

Board of Education Regular Meeting

School District of Seward

410 South Street

Seward, NE 68434

Monday, August 8, 2022 7:00 PM

Attendance Taken at 7:07 PM.

Paul Duer: Present

Jill Hochstein: Present

Jana Hughes: Present

Ryne Seaman: Present

Danielle Shipley: Present

Shawn Svoboda: Present

Attendance Update Taken at 7:51 PM.

Paul Duer: Absent

1. Preliminary Procedures

1.1. Call meeting to order & announce Open Meetings Act is Posted

1.2. Public Notice as publicized per board policy

The public notice was publicized in the Seward County Independent and posted at city hall, library and courthouse. The public notice was dated August 3, 2022.

1.3. Roll Call

1.3.1. Action to excuse board members if necessary

1.4. Pledge of Allegiance

1.5. 1.5 Mission The school district of Seward--where every student, every day is a success--affirms that all students will have the skills to become productive and contributing members of a global community. In cooperation with family and community members, the district is committed to the development of each student academically, emotionally, socially, and physically.

1.6. Approval of Agenda

Motion to approve the agenda as presented Passed with a motion by Paul Duer and a second by Shawn Svoboda.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Ryne Seaman: Yea, Danielle Shipley: Yea, Shawn Svoboda: Yea

2. Public Forum: (The Board President reserves the right to place time limits on individuals and topics.)

2.1. Public Forum on Agenda Items: This is your opportunity to speak to items on the agenda. If you are not a part of the presentation of the agenda item you need to speak now. Thank you for your participation.

There was none.

2.2. Public Forum on Any Topic: This is your opportunity to speak to any topic concerning the school district. Since it is not an agenda item the board cannot discuss or take action at this time on the matter. Future discussion can be requested as an agenda item. Thank you for your participation.

There was none.

3. Reports

3.1. Administrator Reports

Written reports were received from the administrators.

3.1.1. Superintendent's Report

Dr. Fields updated the board on KRATOS. We had great participation over the summer, and they are currently finishing up testing. The next NASB meeting will be September 7, 2022 in York. August 30, 2022 will be our budget meeting at 5:30 p.m.. The Seward County public hearing meeting will be September 26, 2022 at 6:30 at the Civic Center. Our budget hearing will be September 28, 2022 at 5:30 p.m.. Dr. Fields updated the board on assessments. Administrator days went well, covered great topics and had excellent speakers. The flex PD day has gone well this year. Dr. Fields discuss the NSAA wet bulb globe that has been provided to all Nebraska school districts.

4. Discussion Items

4.1. 2022-2023 Reopening Plan

Dr. Fields discussed our reopening plan.

5. Action Items

5.1. Second Reading of Board Policies

Motion to approve the second reading of board policies as presented. Passed with a motion by Jill Hochstein and a second by Paul Duer.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Ryne Seaman: Yea, Danielle Shipley: Yea, Shawn Svoboda: Yea

5.2. Science Curriculum

Motion to approve the Science Curriculum as presented. Passed with a motion by Paul Duer and a second by Jana Hughes.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Ryne Seaman: Yea, Danielle Shipley: Yea, Shawn Svoboda: Yea

5.3. Emergency Operation Plan

Motion to approve the Seward Public School Emergency Operation Plan. Passed with a motion by Jana Hughes and a second by Danielle Shipley.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Ryne Seaman: Yea, Danielle Shipley: Yea, Shawn Svoboda: Yea

5.4. Activity Bus Bids

Motion to approve the bid of \$175,875.00 for the white Thomas bus with air conditioning. Passed with a motion by Paul Duer and a second by Jill Hochstein.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Ryne Seaman: Yea, Danielle Shipley: Yea, Shawn Svoboda: Yea

5.5. Wellness Board

Motion to appoint Jill Hochstein and Shawn Svoboda to the wellness board Passed with a motion by Jana Hughes and a second by Danielle Shipley.

Jill Hochstein: Yea, Jana Hughes: Yea, Ryne Seaman: Yea, Danielle Shipley: Yea, Shawn Svoboda: Yea

6. Future Agenda Items

KRATOS update
summer school update

7. Consent Agenda

7.1. Approval of Minutes

7.2. Approval of Financial Reports

7.2.1. Treasurer

7.2.2. Budget

7.2.3. Activities

7.2.4. Athletic

7.3. Approval of Claims

7.3.1. General Fund

7.3.2. Special Building Fund

7.3.3. Depreciation Fund

7.4. Approval of Consent Agenda

Motion to approve the consent agenda as presented Passed with a motion by Danielle Shipley and a second by Jill Hochstein.

Jill Hochstein: Yea, Jana Hughes: Yea, Ryne Seaman: Yea, Danielle Shipley: Yea, Shawn Svoboda: Yea

8. Adjournment

Motion to adjourn the meeting at 7:56 PM with the next end of year meeting scheduled for August 30 at 5:30. Passed with a motion by Jana Hughes and a second by Jill Hochstein.

Jill Hochstein: Yea, Jana Hughes: Yea, Ryne Seaman: Yea, Danielle Shipley: Yea, Shawn Svoboda: Yea

Please publish the following legal notice in the August 3, 2022 edition of the Seward County Independent. Thank you.

NOTICE OF SCHOOL BOARD MEETING

The board of education of the School District of Seward will meet in regular session on Monday, August 8, 2022 at 5:30 p.m. for a board study session to be followed by the 7:00 p.m. regular business meeting. The meeting will be held at the Administrative Offices located at 410 South St., Seward, Nebraska. An agenda for the meeting which shall be kept continually current is readily available for public inspection at the Superintendent's Office during normal business hours.

To view the agenda go to <http://SewardPublicSchools.org/> and find the eMeeting link.

School District of Seward Board Report

August 8, 2022

Jessica Dominy, Principal
Seward Elementary School

Enrollment: as of August 1, 2022

- Preschool: 71
- Kindergarten: 99
- 1st Grade: 93
- 2nd Grade: 102
- 3rd Grade: 92
- 4th Grade: 107
- Total: 564

Upcoming Seward Elementary Events:

- Monday, August 15th: Open House (5:00 - 6:30 PM)
- Wednesday, August 17th: 1st Day of School (1:15 Elementary Dismissal)
- Friday, August 19th: School Picture Day
- Tuesday, August 23rd: 1st Day of Preschool
- August 25th and 26th: Health Screenings
- August 29th and September 1st: MAP Fluency (K-1 Literacy Screener)
- August 30th: PLC Day
- Monday, September 5th: No School, Labor Day

First Day of School Celebration:

The first day of school is Wednesday, August 17th. Our theme for the 22-23 school year is "Welcome Aboard the S.E.S. Learn!" This nautical/ocean themed year will surely be filled with many different types of adventures: making new friends, reconnecting with old friends, new learning experiences, collaborating with classmates, and so much more! Our year will kick off with our first day of school celebration on August 17th outside, where students will line up with their new teachers and walk into the building together. We are looking forward to all the fun this school year will have to offer!

Staffing Changes:

We have three new teachers joining Seward Elementary this year: Sarah Brumm (art), Jill Olson (1st), and Shanae Hentzen (2nd). We also hired several new paraprofessionals: Elle Wren, Jessica Gross, Nicole Myles, and Lindsay Mueller. Each of these ladies will bring a great deal of talents to our building. We are lucky to have them join the SES team!

Strategic Planning:

This year, we will enter year four in our strategic planning process. We are looking forward to getting started with our new plans to continue to focus on improvement and growth. Action teams will begin their work right away during fall workshop and will continue throughout the year.

Thank You!

Our building is clean, organized, and ready for students, thanks to the maintenance team! I greatly appreciate how much time and effort went into preparing our school for the upcoming year. The carpet and paint look wonderful!

Thank you to Heidi and Christine at the District Office, and Michelle Austin and Jamie Fields as well! They made sure teachers have orders in their classrooms over the summer.

Board of Education Report
Seward Middle School - Kirk J. Gottschalk
8 August, 2022

1. Middle School Activities.

15 August - Middle School Open House, 1800-1900 hrs. (6:00-7:00 pm).
 - 5th Grade student tours begin at 1730 hrs. (5:30 p.m.).

17 August - School starts, 1330 dismissal (1:30 pm)

5 Sept. – Labor Day, No School

*Football and volleyball practices will start on Monday, 22 August with games beginning in mid September. Cross country practice will start on Friday, 19 August as their first meet is on 1 September.

2. Staffing.

Two new full time teachers will be blessing our hallways at the middle school this year. Mrs. Madeline Carlson will be teaching 5th grade resource classes and Ms. Jessica Schreiner will be teaching 5-8 band and 7/8 career classes this year. We are also still working on hiring a couple new para professionals in the middle school.

3. Outdoor Education.

Our Outdoor Ed. experience for 6th graders and HS camp counselors at Camp Carol Joy Holling will take place from 24-26 August. Mr. Schlegel has been making all the preparations and communicating with those involved as we move forward in providing this unique educational experience for our kids.

4. Enrollment.

We are currently at **418** but nothing definite as we get new students coming in daily and getting requests for records of students who moved during the summer. These numbers hopefully are close to what we will begin with.

<u>Aug. 2022</u>	<u>Aug. 2021</u>	<u>Aug. 2020</u>	<u>Aug. 2019</u>
5 th Grade - 93	5 th Grade - 113	5 th Grade - 109	5 th Grade - 102
6 th Grade - 110	6 th Grade - 105	6 th Grade - 101	6 th Grade - 107
7 th Grade - 110	7 th Grade - 103	7 th Grade - 111	7 th Grade - 109
8 th Grade - 105	8 th Grade - <u>108</u>	8 th Grade - <u>110</u>	8 th Grade - <u>107</u>
TOTAL 418	TOTAL 429	TOTAL 431	TOTAL 425

5. Open House.

Our middle school Open House will take place on Monday, 15 August. New students and all 5th graders are invited to come as early as 5:30 pm while the rest of the students and their families will be welcomed between 6:00-7:00 pm. It is designed to give students and their parents an opportunity to get a look at the building, meet and greet teachers, bring in paper work and supplies as well as reduce some of the first day anxieties new students and some 5th grade parents get. I plan to meet with 5th grade and new parents in the gym at 6:05 pm to provide some basic information.



Board of Education Report

August 2022

Seward High School

Scott Axt-Rich Eber-John Moody



SHS Back to School Newsletter

Please see our back to school newsletter at: <https://www.smore.com/0htzu-2022-bluejay-summer-newsletter>

Freshman and New Student Orientation

Seward High School will be hosting a freshman and new student orientation on Monday, August 15th at 7:00 p.m. in the new theater. (Doors will open at 6:30 if students want to arrive early to start getting their T-shirts, schedules, fill out paperwork etc. to beat the rush, and learn more about student activities (tables will be setup in the main gym for more information) Parents/guardians and students will have an opportunity to visit classrooms, meet teachers, find lockers, and get acclimated with the building. Information will also be provided regarding schedules, school policies, college planning, activity tickets, the automated lunch program, school organizations, and other relevant school information. We encourage parents/guardians to come prepared to put money in your son and/or daughter's lunch account and to pay for activity tickets before school starts in order to avoid the rush on the first few days of school. This should be an exciting night to continue the journey of transitioning to high school.

First Day of School

The first day of school will be on Wednesday, August 17. The schedule for the day will be a shortened bell schedule with an 8:15 a.m. start and a 1:30 p.m. end. Lunch will be served. Students will be given an information packet that includes health insurance forms, school lunch information, health history, student demographic update and other school related information. Completed forms from the information packet need to be returned to the high school office by Monday, August 22nd.

Building Preparation

The custodial and maintenance department has been hard at work this summer preparing Seward High School for the first day of school. A special thanks to Tom Vajrt, the summer maintenance crew, and Seward High School custodians.

Canvas

We are implementing a new learning management system this school year to take the place of Google Classroom. This platform is named "Canvas". Staff had the past year to receive training and begin making the transition. The state is paying for much of the start up costs and training. This system is similar to Google Classroom but has quite a bit more features for our students and staff. We are excited by this transition as a majority of colleges are also using Canvas so it will help our students with the transition and provide a robust tool box for our teachers.

Staying Connected with Seward High School

Building/District Website: www.sewardpublicschools.org
Facebook: <http://www.facebook.com/sewardpublicschools>
Twitter Athletic Updates: @SewardBluejays
Activity Calendar: www.centralconference.org
Staff Email: firstname.lastname@sewardschools.org

Activities

Fall sports officially begin on August 8th. Preliminary Pre-Season numbers look to be very large in the majority of the fall sports.

Enrollment numbers as of August 2, 2022

9th-129
10th-128
11th-125
12th-129



School District of Seward
Board Report
Shannon Hall-Schmeckpeper, Director of Special Services
August 8, 2022

It is hard to believe that in a week and a half the 2022-2023 school year be starting. I know our building secretaries have been busy registering new families and sending records for kids that have moved on to another school district.

We have a few new staff joining us in special education. Maddie Carlson will be the 5th grade special education teachers. And we will contract with ESU6 to have Chelsea Larkin with us two days a week to provide services to our children age birth to 3 who are on IFSPs and to our students age 3-5 who receive special education services at community preschools. We also have a number of new para staff who will be supporting our teachers and students.

As of August 1, we have a total of 311 students who are receiving special education services. This includes 33 students in the preschool and 11 children that are served at home on IFSPs. We have 39 students that are eligible for a 504. We have 133 students that are identified as HAL. We have 3 students that are identified as needing ELL support, but we know that we have had a few more family move in to Seward.

We will be involved in some professional learning opportunities this year. NDE has partnered with SPED Strategies and is offering a year long training to learn more about Inclusive Learning Environments for Students with Disabilities. We will have a team of 6 attend these training and develop a plan for implementation here in Seward. The team consist of 2 elementary teachers, 2 middle school teachers, 1 high school teacher and myself. [Here is the schedule for this learning series.](#)

Another professional learning opportunity we will be engaging in this year is exploring curriculum options for our students who qualify for alternative assessment. This professional learning with take place through ESU6. They have a grant that will pay for the training this year. They are also purchasing the curriculum and will loan it to schools to try this year at no cost. We will have a lifeskills program at each of the buildings this year so it is a great time for us to explore curriculum to support these students.

I am excited for the learning we will be doing this year and for how it will help us provide the best support for our students. Again, thanks for all you do to support us!

Dr. Shannon Hall-Schmeckpeper

SCHOOL DISTRICT OF SEWARD
410 South Street
Seward, NE 68434



Dr. Matt Dominy
Director of Curriculum and Staff
Development
Phone: (402) 643-2941
FAX: (402) 643-4986

August 2022 Board Report for Curriculum and Staff Development

Board Members,

Happy New Year! We are in one of those few professions where we get to celebrate the new year twice, once in August and another in January! The new year presents many opportunities for our students, and I am excited to be part of those new opportunities.

Curriculum

Today, we will review the work of our teachers in the area of science. Our teachers spent several hours analyzing materials and planning for instruction that is engaging, rigorous, and meaningful for our students. I am excited to see what our students think of the new materials and the instructional approach at looking at science through the lens of a scientist.

During this school year, we will be in the curriculum review process for the area of English Language Arts. In the fall we will be taking time during our staff development days to immerse ourselves in the Nebraska ELA standards and current research and best practice in reading instruction. In the winter and spring, we will evaluate materials and make recommendations to the board regarding instructional materials in this area.

Instruction

In the area of strategic planning, we will continue our work with grading and assessment. We made good progress last year, but we need to continue to refine some grading practices and look at reporting documents/communication. We will also be diving into Strategy 5 which is about providing opportunities for intervention and enrichment within the MTSS process.

Staff Development

Our new teachers attended the Effective Instruction Series which is organized by ESU #6 and was held at Seward Middle School this year. This training is a great way for us to get to know the new staff and for new staff to get to know each other. I am proud to say that the principals have done an outstanding job selecting teachers who want to get better, love learning, and want

to do what is best for kids. New teachers were brought up to speed on a variety of content and research based instructional strategies.

Fall workshop is coming up. All teachers will report on August 12th. We will have training on the new science materials, the Wellness4All program, and several district/state required trainings. All staff are invited to a breakfast at the High School on Monday, August 15th at 8:00. Breakfast will be provided by our new food service company, Sodexo. All Board members are invited to attend this breakfast as well as the kick-off celebration.

Assessment

The assessment area was looking very murky at the beginning of the summer, but we recently have some clarity. Initially all districts were going to have to give the NSCAS growth assessment in the Fall, Winter, and Spring. We have found that the NSCAS assessment was not consistent in giving us a score on the NWEA side of things that we could use to determine the need for intervention and HAL support. We were considering the need to possibly test with the NSCAS growth and NWEA MAP in the Fall, to have the data that we need, however we have become aware that the Commissioner has waived the requirement to do NSCAS Growth in the Fall and Winter. Our students will only take the NWEA MAP test in the Fall and this will be consistent with prior years and will give us the data we need to make important decisions about instruction.

I look forward to a fantastic school year and I thank you for your support.

Dr. Matt Dominy

Fall Workshop 2022

August, 12,15,16- Please see digital update from Dr. Dominy

Elementary

Required Trainings to be completed on the 12th, 15th, 16th at your discretion:

Username is your SPS Email

Bullying: <https://sewardschools-ne.safeschools.com/login>

Blood Borne Pathogens: <https://sewardschools-ne.safeschools.com/login>

Sexual Harassment: Student Issues and Response <https://sewardschools-ne.safeschools.com/login>

Friday, August 12

7:00-8:00 Optional Coffee Drive-thru at Ridgewood (624 Pinewood Ave)

8:15-8:30 Welcome back reception- In commons

8:30-11:30 McGraw-Hill Science Training (K-5) Multipurpose RM

11:30-12:30 Lunch on your own

12:30-1:30 Action Team Meetings

1:30-4:00 Grade Level Meetings

Monday, August 15

8:00-8:30- All Staff Breakfast- HS Cafeteria

8:30-9:15- Welcome and Message- Dr. Fields- HS Theatre

9:15-9:45- Welcome and Message- Dr. Dominy- HS Theatre

10:00-12:00-Building Meetings- MP Room

Required Training: School safety and security plan, Teacher Evaluation

12:00-1:00- Lunch On Your Own

1:00-2:30 - Building Meetings Continued

2:30-3:00 Counselors meeting ES Conference RM

3:00-3:30 Nurses Meeting- ES Conference RM

2:30-3:30- All HS coaches-SHS Lib.

Required Training- Concussion Awareness- Protocols for Removal From Play, Return to Play, Return to Learn.

3:30-4:00- Varsity Head Coaches- SHS Lib.

Tuesday, August 16

7:00-8:00- Optional Breakfast at Kinship Pointe (500 Heartland Park)

8:00-9:00 Para Meeting - Multipurpose RM

8:00-9:00 Required Self-Directed PD- In your room (see above and Seizure Training)

9:00-9:45 Wellness 4 All- Multipurpose RM

9:45-11:00 Seizure Training <https://learn.epilepsy.com/courses/school-personnel-OD-v2>

11:00-12:00 Required Self-Directed PD-In your room (see above and Seizure Training)

12:00-1:00- SEA Luncheon- HS cafeteria

1:30-2:30 Med Aide Training-SMS art room
1:30-2:30- Crisis Team Meeting- SMS library
2:30-3:30 Emergency Response Team Meeting- SMS library
3:00-4:00 MS Coaches Meeting- SMS Library
Required Training- Concussion Awareness- Protocols for Removal From Play, Return to Play, Return to Learn.
2:45-4:00- Special Education Meeting- SES-Multipurpose RM

Middle

Required Trainings to be completed on the 12th, 15th, 16th at your discretion:

Username is your SPS Email

Bullying: <https://sewardschools-ne.safeschools.com/login>

Blood Borne Pathogens: <https://sewardschools-ne.safeschools.com/login>

Sexual Harassment: Student Issues and Response <https://sewardschools-ne.safeschools.com/login>

Friday, August 12

7:00-8:00 Optional Coffee Drive-thru at Ridgewood (624 Pinewood Ave)
8:15-8:45 Welcome back reception- SMS Library
8:45-11:30 Team Level Meetings
11:30-12:30 Lunch on your own
12:30-1:30 Action Team Meeting
12:30-3:30 McGraw- Hill Science training (6-8 Science Teachers)

Monday, August 15

8:00-8:30- All Staff Breakfast- HS Cafeteria
8:30-9:15- Welcome and Message- Dr. Fields- HS Theatre
9:15-9:45- Welcome and Message- Dr. Dominy- HS Theatre
10:00-12:00-Building Meetings-MS Library
Required Training: Dating Violence Prevention, School safety and security plan, Teacher Evaluation
12:00-1:00- Lunch On Your Own
1:15 - 2:30 Building Meetings Continued
2:30-3:00 Counselors meeting SES Conf. Room
3:00-3:30 Nurses Meeting- SES Conf. Room
2:30-3:30- All HS coaches-SHS Lib.
Required Training- Concussion Awareness- Protocols for Removal From Play, Return to Play, Return to Learn.
3:30-4:00- Varsity Head Coaches- SHS Lib.

Tuesday, August 16

7:00-8:00- Optional Breakfast at Kinship Pointe (500 Heartland Park)
8:00-10:00 Required Self-Directed PD-In your room (see above and Seizure Training)
10:00-10:45 Wellness 4 All- Jen and Jamie
10:45-12:00 Seizure Training <https://learn.epilepsy.com/courses/school-personnel-OD-v2>
12:00-1:00— SEA Luncheon- HS cafeteria
1:30-2:30 Med Aide Training- SMS Art room
1:30-2:30- Crisis Team Meeting- SMS library
2:30-3:30 Emergency Response Team Meeting- SMS library
3:00-4:00 MS Coaches Meeting- SMS Library
Required Training- Concussion Awareness- Protocols for Removal From Play, Return to Play, Return to Learn.

2:45-4:00- Special Education Meeting- SES-110

High

Required Trainings to be completed on the 12th, 15th, or 16th at your discretion:

Username is your SPS Email

Bullying: <https://sewardschools-ne.safeschools.com/login>

Blood Borne Pathogens: <https://sewardschools-ne.safeschools.com/login>

Sexual Harassment: Student Issues and Response <https://sewardschools-ne.safeschools.com/login>

Friday, August 12

7:00-8:00 Optional Coffee Drive-thru at Ridgewood (624 Pinewood Ave)

8:15-8:45 Welcome back reception- SHS Library

10:00-12:00 Savvas Science Training- HS Science Teachers- SHS Library

11:30-12:30 Lunch on your own

12:30-1:30 Action Team Meeting

1:30-4:00 Department Meetings

Monday, August 15th

8:00-8:30- All Staff Breakfast- HS Cafeteria

8:30-9:15- Welcome and Message- Dr. Fields- HS Theatre

9:15-9:45- Welcome and Message- Dr. Dominy- HS Theatre

10:00-12:00 -Building Meetings- HS Lib

Required Training: Dating Violence Prevention, School safety and security plan, Teacher Evaluation

12:00-1:00- Lunch On Your Own

1:00-2:30- Building Meetings Continued

2:30-3:00 Counselors meeting SES Conf. Room

3:00-3:30 Nurses Meeting- SES Conf. Room

2:30-3:30- All HS coaches-SHS Lib.

Required Training- Concussion Awareness- Protocols for Removal From Play, Return to Play, Return to Learn.

3:30-4:00- Varsity Head Coaches- SHS Lib.

Tuesday, August 16th

7:00-8:00- Optional Breakfast at Kinship Pointe (500 Heartland Park)

8:00-9:30- Required Self Directed PD-In your room (see above and Seizure Training)

9:30-11:00 Seizure training <https://learn.epilepsy.com/courses/school-personnel-OD-v2>

11:00-11:45 Wellness 4 ALL

12:00-1:00— SEA Luncheon- HS cafeteria

1:00-2:30- Crisis Team Meeting- SMS library

1:30-2:30 Med Aide Training- SMS art room

2:30-3:30 Emergency Response Team Meeting- SMS library

3:00-4:00 MS Coaches Meeting- SMS Library

Required Training- Concussion Awareness- Protocols for Removal From Play, Return to Play, Return to Learn.

2:45-4:00- Special Education Meeting- SES-Multipurpose RM



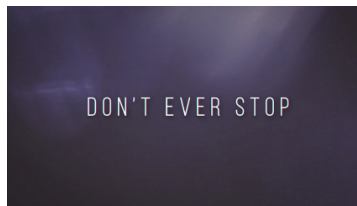
NASB Monthly Update for Board Meeting Agenda Item

August 2022

WATCH: August Agenda Video Update

<http://members.nasbonline.org/index.php/news-resources/videos>

While you're there ... watch & share with your staff & community:



DON'T EVER STOP = <https://vimeo.com/646189771>

and

I AM PUBLIC EDUCATION IN NEBRASKA = <https://vimeo.com/194260783>

and

FOR ME = <https://vimeo.com/243667570>

and

THAT'S WHY I SERVE = <https://vimeo.com/300383420>

**August is the perfect time to remind your board, your staff, your community
and YOURSELF why we do what we do!**

Latest 'Board Notes' – Monthly Newsletters

(www.NASBonline.org - News & Resources - Board Notes)

- *LB 644 - The Postcard Bill ... What you need to know (key links, videos & resources)*
- *At The Board Table*
- *Leadership at the Local Level*
- *NASB Participates in National Forum on Education Policy*
- *Education Leaders from Nebraska travel to Ghana*
- *Nominations for the NASB Board & Legislation Committee*
- *Unity Through Collective Voice*
- *... And Much More!*

“NASB Update – Annual Board Calendar Summary”

View the full detailed calendar at: <http://members.nasbonline.org/index.php/resources>

(www.NASBOnline.org – Board Leadership – Resources)

As a board, some items you should doing, or have on the monthly agenda include:

POLICY GOVERNANCE

- Option Enrollment Application period. School districts will accept option enrollment applications between Sept 1 and March 15 for attendance during the following and subsequent school years.
- Personnel Report. On or before Sept 15, all schools shall file with the Department of Ed a fall personnel report, which shall specify the names of all individuals employed by the school who are certificated.
- Federal Family Educational Rights and Privacy Act (FERPA). Annual notice provided to parents/guardians and eligible students of their rights to inspect and review educational records, amend education records, consent to disclose personally identifiable information in education records and file a complaint with the U.S. Department of Education.
- Federal Protection of Pupil Rights Amendment (PPRA). Annual notice provided to parents of the policies regarding surveys of students, instructional materials, physical examinations, personal information used for marketing.
- Federal Child Nutrition Programs. If school districts participate in National School Lunch Programs the School Breakfast Program or the Special Milk Program, they must provide parents and the public information about free and reduced- price meals and/or free milk and must provide parents with an application form.
- Federal Asbestos Hazard Emergency Response Act (AHERA). Requires school districts to have an asbestos management plan for each school building in the district (whether lease or own). Annually, school districts must notify parents, teachers, and employee organizations of the availability of the asbestos management plan. All members of the custodial staff who work in a building containing asbestos must have awareness training and all new custodial staff must be training within the first 60 days of hiring.
- Federal McKinney-Vento Homeless Assistance Act. Requires public notice of the education rights of homeless students. The notice must be disseminated in places where homeless students receive services including schools, family shelters, and soup kitchens. They must be understandable to homeless students and their parents and when necessary, in their native language.
- Federal Non-Discrimination. Requires all recipients of federal funds to notify their students, parents, and others that they do not discriminate on the basis of race, color, national origin, sex, CONTINUED ON PAGE 5 disability, and age, and, if applicable, that they provide equal access to the Boy Scouts of America and other designated youth groups.
- Federal Individuals with Disabilities Education Act (IDEA). Annual notice to parents of a child with a disability of the district’s procedural safeguards. A notice must also be placed on the district’s website. The notice must be easily understandable and in the native language of the parents

ADVOCACY

- Discuss the NASB Legislative Committee Report and outcome of proposals submitted for consideration

DISTRICT/ESU RESOURCES (BUDGET)

- Collective Bargaining; Timelines. On or before Sept 15, negotiations contract dispute decision; Boards may enter into collective bargaining agreements for periods not to exceed four years.
- Collective Bargaining Timeline. On or before Sept 1, of the year preceding the contract year in question, the certificated and instructional employees’ collective-bargaining agent shall request recognition as bargaining agent. The governing board shall respond to such request not later than the following Oct 1

- Board/Administrators Budget Work Session
- Certification of District's Assessed Valuation Public Budget Hearing / Adopt Budget; Due on or before Sept 20
- Board Adopted Budget. On or before Sept 30, General Budget Adoption. The board shall file with, certify to the levying board, and file with the auditor a copy of the adopted budget statement together with the amount of the tax required to fund the adopted budget.
- Report to County Board. On or before Sept 30, a [Class III school district boards] are required to report to the county board and the learning community coordinating council (if applicable) the entire revenue raised by taxation and all other sources for the previous fiscal year and a budget for the ensuing fiscal year.
- Class IV District Report to County Board. On or before Sept 30, [Class IV school district boards] are required to report to the county board an estimate of the amount of funds required for the next school fiscal year.
- Class V District Report to County Board. On or before Sept 20, [Class V school district boards] that is a member of a learning community is required to report to the county board and the learning community coordinating council the entire revenue raised by taxation and all other sources for the previous school fiscal year and a budget for the ensuing school fiscal year

REPORTS

- Board Committees; Superintendent; Administrators
- American Civics Committee. Beginning of every school year, the school board must appoint a committee of three to be known as the Committee on American Civics. The committee will hold no fewer than two public meetings annually, at least one when public testimony is accepted. Examine and ensure that the social studies curriculum used in the district is aligned with the social studies standards adopted pursuant to section-724. *Reference: (January) Board Committee Appointments.
- Security Assessment. State school safety director is required to complete an assessment of the security of each school building no later than Aug 31.

BOARD LEADERSHIP DEVELOPMENT

- Board Candidate Webinars: Wednesday, September 14 at 12 p.m. and 7 p.m. and Wednesday, October 5 at 12 p.m. and 7 p.m.
- Review and discuss Board Governance Standard VI. District Resources
- NASB Area Membership Meetings

LEARNING COMMUNITY

- Learning Community Attendance Reports. On or before Sept 1, each district that is a member of a learning community needs to report to the learning community coordinating council attendance reports including violations of attendance, results of attendance investigations, policies on excessive absenteeism and records of notices and reports. • Learning Community Budget. On or before Sept 1, the Learning Community shall file a copy of the adopted budget statement with member school districts.

NASB's Video Resources:

<http://members.nasbonline.org/index.php/news-resources/videos>

(www.NASBonline.org – News & Resources – Videos)

Legal Resources, NASB's Live & Learn Series, Member Zoom's, Q&A's with the Governor and Commissioner Blomstedt, EHA Updates, Advocacy breakdowns, Monthly Board Agendas, and MUCH more!

Networking & Events ... Register Now

<http://members.nasbonline.org/index.php/events>

(www.NASBonline.org – Events)

All Dates & Locations Tentative & Subject to Change

2022 NASB Board Candidate Webinars

~~Tuesday, June 7 – 7:00 to 8:30 PM CT~~

~~Thursday, June 9 – 12:00 to 1:30 PM CT~~

~~Wednesday, June 15 – 12:00 to 1:30 PM CT~~

~~Wednesday, July 13 – 7:00 to 8:30 PM CT~~

Wednesday, September 14 at 12:00 PM to 1:00 PM CT

Wednesday, September 14 at 7:00 PM to 8:30 PM CT

Wednesday, October 5 at 12:00 PM to 1:00 PM CT

Wednesday, October 5 at 7:00 PM to 8:30 PM CT

Area Membership Meetings

LEADERSHIP AT THE LOCAL LEVEL

https://nasb.envisiams.com/docs/default-source/event-mailers/amm-2022-mailer1d2f2b24-f4de-4990-bb59-9e0a4a112d41.pdf?Status=Master&sfvrsn=10037c5_3

August 23 – Nebraska City

August 24 - Fremont

August 29 - Gering

August 30 - Valentine

August 31 - Norfolk

September 1 - La Vista

September 7 - York

September 20 – North Platte

September 21 – Kearney

Annual Sparq Date Solutions Tailgate

September 17 – Lincoln

Facilities & Construction Workshop

September 22 – Kearney

NASB Member Virtuals

<http://members.nasbonline.org/index.php/nasb-member-virtuals>

(www.NASBonline.org – Events – NASB Member Virtuals)

- **Previous Member Virtuals Available to Watch Include:**

- 2022 Legislative Recap & Look Ahead
- Tough Times & Tough Meetings: The Board’s Role in Navigating Hot Button Issues
- NASB Member Virtuals w/ Commissioner Blomstedt & Dr. Jeffrey Gold of UNMC, Bryce Wilson of NDE on Cares Act Funds Q&A for School Boards, and More ...

Advocacy

<http://members.nasbonline.org/index.php/government-relations>

(www.NASBonline.org – Government Relations)

New to the NASB GR Page ...

LB 644 - THE POSTCARD BILL - WHAT YOU NEED TO KNOW

KEY LINKS, VIDEOS & RESOURCES

Upcoming Legislative Meet & Greets ... Join Us!

MEET & GREET W/ DISTRICT 36 LEGISLATIVE CANDIDATE HOLDCROFT

AUGUST 11 - SPRINGFIELD - 9:00 AM TO 11:00 AM CT

MEET & GREET W/ DISTRICT 24 LEGISLATIVE CANDIDATE HUGHES

AUGUST 17 - YORK - 11:00 AM TO 1:00 PM CT

MEET & GREET W/ DISTRICT 48 LEGISLATIVE CANDIDATES HARDIN & LEASE II

AUGUST 28 - GERING - TIME TBD

MEET & GREET W/ DISTRICT 40 LEGISLATIVE CANDIDATE DEKAY

AUGUST 31 - PLAINVIEW - 11:00 AM TO 1:00 PM CT

MEET & GREET W/ DISTRICT 18 LEGISLATIVE CANDIDATE YOUNG

SEPTEMBER 8 - ELKHORN - 4:00 TO 6:00 PM CT

All Dates & Locations Tentative & Subject to Change

Follow NASB on twitter at www.twitter.com/NASBonline using the hashtag #liveNASB

and on Facebook at www.facebook.com/NASBonline

Watch all of the NASB videos at <http://members.nasbonline.org/index.php/news-resources/videos>

(www.NASBonline.org – News & Resources – Videos)

To see a quick glimpse at the various items the NASB is involved in, check out pages 10 & 11 each month in the **Board Notes newsletter** for “This Month In ...” To access the latest newsletter, click here:

<http://members.nasbonline.org/index.php/news-resources/board-notes>

(www.NASBonline.org - News & Resources - Board Notes)



Posted August
Updated August 1, 2022

Reopening Plan for 2022-2023 School Year

Seward Public Schools will again be open in the fall of 2022 for in-person teaching and learning. We will continue to work closely with the Four Corners Health Department and state officials if an outbreak of COVID-19 occurs within our schools. We will utilize only if needed the protocols that were put into place from our 2021-2022 reopening plan. Our goal is to have as much as a normal school year as possible, but we will communicate any changes that may need to be made throughout the school year. Thank you for your continued support of Seward Public Schools as we look forward to a great 2022-2023 school year.

COVID-19 Vaccination:

Seward Public Schools is an active community partner with the Four Corners Health Department and other state and local public health leaders to promote COVID-19 vaccination. The summary below represents the strategies Seward Public School District will continue to use to support the overall public health message and strategy to vaccinate individuals against COVID-19.

- Regular parent, staff, and student email updates which include factual information regarding the safety and efficacy of the COVID-19 vaccine. This will include sharing public health recommendations to mitigate COVID-19 spread for vaccinated and unvaccinated individuals.
- Regular coordination with the Four Corners Health Department and Seward County Memorial Health Care Systems to assist with planning, coordinating, and communicating information related to community COVID-19 vaccine clinics.
- Provide flexibility to staff and students who need to miss work/school to gain access to a COVID-19 vaccine or in response to its short-term side effects.

2022-23 Core Protocols:

Seward Public Schools Covid-19 Mitigation Protocols	If needed Enhanced Protocols with Mitigation Protocols
<ul style="list-style-type: none"> ● Continue to request that students and staff self screen daily for COVID-19 	<ul style="list-style-type: none"> ● Will work with local health departments and ESU 6 during the

symptoms using the self-screening protocol.

- Encourage and enable students and staff to frequently wash and sanitize hands.
- Promote appropriate coughing and sneezing etiquette.
- Utilize targeted enhanced cleaning protocols on high touch surfaces throughout each school and in school transportation vehicles.
- Continue to ensure students and staff who are sick stay home from school.
- Require anyone testing positive for COVID-19 to isolate for (5) days since onset of symptoms and symptoms have improved and the individual is fever free for at least 24 hours without fever reducing medication.

- Continue to assist local health department officials with contact tracing as necessary for COVID-19 exposures that occur on campus and at school activities or events.
- Follow directives from the local health department for someone who has been exposed to COVID-19 (e.g., potential quarantine, self-monitor, etc.).
- Communicate information about the COVID-19 vaccine and encourage students and staff to be vaccinated and where they can be vaccinated in Seward County.
- *Communicate about Covid case counts in our schools using the Covid Dashboard if needed.*
- Increase fresh air mixture into HVAC systems throughout all schools.
- Students with special needs will have access to all safety protocols discussed above as well as safety measures agreed to in the IEP.

summer months.

- Seward Public Schools will adjust protocols as necessary to address changing conditions. During the school year, protocols and requirements may change for a specific school building, program, classroom or setting based on the number of positive cases, outbreaks, community conditions and risk of spread.
- Seward Public Schools will collaborate with our local health department, and the department of education, to implement recommended measures to maintain in-person learning.

2008 Meetings

The formation of policy is public business and will be conducted openly in accordance with the Nebraska Open Meetings Act.

1. Types of Meetings

- a. The board shall hold its regular meetings on or before the third Monday of each month.
- b. Special and emergency meetings may be called as provided by law.
- c. The board may schedule work sessions and retreats in order to provide board members and administrators with the opportunity to plan, research, and engage in discussion.

2. Notice

The board shall give reasonable advance publicized notice of the time and place of each of its meetings, which generally will be 48 hours or more in advance of the meeting. Such notice shall be transmitted to all members of the board and to the public. Notice of regular and special meetings shall be published in a newspaper of general circulation within the district and, if available, on the newspaper's website. Newspapers of general circulation in the district include, but are not necessarily limited to, Seward County Independent, Lincoln Journal Star or the Omaha World-Herald. Such notice shall contain a statement that the agenda shall be readily available for public inspection at the administration office of the school during the normal business hours. In addition, the superintendent is authorized, but not required, to publish the notice of any meeting on the school district's website, posting in three prominent places within the school district, or by any other appropriate method designated by the board.

When it is necessary to hold an emergency meeting without reasonable advance public notice, the nature of the emergency shall be stated in the minutes of the meeting, and any formal action taken in such meeting shall pertain only to the emergency. Complete minutes of such emergency meetings specifying the nature of the emergency and any formal action taken at the meeting shall be made available to the public no later than the end of the next regular business day.

3. Weather Delays

In the event of inclement weather which makes it dangerous or unreasonable for board members or members of the public to attend a meeting for which notice has already been given, such meeting may be postponed by the board president. The board will communicate the delay to members of the public by posting it on the district's website and by following the same communication protocol that the district follows when student attendance at school is called off due to inclement weather. When possible, the board president and superintendent will attempt to communicate the information to local media members and business owners to assist in notifying the public of the delay. Notice of the date, time, and location of the postponed meeting will be advertised as required in the "Notice" section above.

4. Minutes

- a. The board shall keep minutes of all meetings showing the time, place, members present and absent, the method(s) and date(s) of the meeting notice, and the substance of all matters discussed.
- b. Any action taken on any question or motion duly moved and seconded shall be by roll call vote of the board in open session, and the record shall state how each member voted, or if the member was absent or not voting.
- c. The minutes of all meetings and evidence and documentation received or disclosed in open session shall be public record and shall be published on the school district's website within ten working days of the last meeting or prior to the next convened meeting, whichever occurs earlier. The minutes shall be available on the website for at least six months.

Adopted on: _____
Revised on: _____
Reviewed on: _____

**2010
Preparation for Board Meetings**

The superintendent will create the agenda and board packet in consultation with the board president. The materials will be sent or delivered to each board member in advance of the meeting. Members of the public have no entitlement to place an item on the board’s agenda, but may address the board during the next meeting at which the board receives public comment. **The agenda shall be placed on the district’s website at least 24 hours before the school board meeting and shall remain available on the website for at least six months.**

Adopted on: _____
Revised on: _____
Reviewed on: _____

**3003.1
Bidding for Construction, Remodeling, Repair, or Related Projects
Financed with Federal Funds**

I. Applicability of the Policy

This policy applies only to construction and contracts undertaken with federal funds which are subject to the federal Uniform Grant Guidance (UGG) and other applicable federal law, including but not limited to the Education Department and General Administration Regulations (EDGAR) and the United States Department of Agriculture (USDA) regulations governing school food service programs. In the event this policy conflicts or is otherwise inconsistent with mandatory provisions of the UGG, EDGAR or other applicable federal law, the mandatory provisions of the laws shall control.

The District will also comply with the requirements of the public lettings laws (NEB. REV. STAT. §§ 73-101 through 73-106) when the contemplated expenditure for the complete project exceeds \$109,000, the Political Subdivisions Construction Alternatives Act (NEB. REV. STAT. §§ 13-2901 through 13-2914), energy financing contracts (NEB. REV. STAT. §§ 66-1062 through 66-1066), other applicable state laws, and the board's general policy on Bidding for Construction and Related Projects. In addition, all procurement and construction shall comply with the rules and requirements of 2 CFR part 200.317 through 200.326 and 34 CFR sections 75.601 through 75.615. In the event of a conflict between state and federal law, the more stringent requirement shall apply.

II. All projects undertaken pursuant to this policy will be subject to the following bond requirements

- A. A bid guarantee from each bidder equivalent to five percent of the bid price. The "bid guarantee" must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute such contractual documents as may be required within the time specified.
- B. A performance bond on the part of the contractor for 100 percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.
- C. A payment bond on the part of the contractor for 100 percent of the contract price. A "payment bond" is one executed in connection with a contract to assure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract.

III. Construction Projects with an Anticipated Cost of Under \$250,000

- A. Methods of Bidding/Soliciting Quotations or Estimates

The type of procedures required depends on the anticipated cost of the project.

1. Construction with an Anticipated Cost of up to \$10,000 (Micro-Purchases)

Micro-purchase means a purchase of supplies or services using

simplified acquisition procedures, the annual aggregate amount of which does not exceed \$10,000. Micro-purchases may be made or awarded without soliciting competitive quotations, to the extent district staff determine that the cost of the purchase is reasonable. For purposes of this policy "reasonable" means the purchase is comparable to market prices for the geographic area.

To the extent practicable, the District distributes micro-purchases equitably among qualified suppliers. The District will follow its standard policy on purchasing.

2. Construction with an Anticipated Cost of between \$10,000 and \$250,000 (Small Purchase Procedures)

For construction projects subject to this policy, small purchases are purchases that, in the aggregate amount, is more than \$10,000 and less than \$250,000 annually. For small purchases, price or rate quotes shall be obtained in advance from a reasonable number of qualified sources as detailed in the district's standard policies on purchasing and on bid letting and contracts.

B. Construction Projects with an estimated cost of between \$109,000 and \$249,999 will be made pursuant to the District's Policy on Bid Letting and Contracts.

Pursuant to Nebraska law, construction projects which have an anticipated aggregate cost of \$109,000 or more are subject to state public lettings laws (NEB. REV. STAT. §§ 73-101 through 73-106). The board will follow its standard policy on bid letting and contracts for construction projects financed with federal funds which have an anticipated aggregate cost of between \$109,000 and \$250,000.

IV. Construction Projects with an Anticipated Cost Over \$250,000

A. Sealed Bids: All constructions projects subject to this policy with an anticipated cost of \$250,000 or more will be publicly solicited using the sealed bid method

1. Bids must be solicited from an adequate number of known suppliers, providing them sufficient response time prior to the date set for opening the bids, for state, local, and tribal

governments, the invitation for bids must be publicly advertised;

2. The invitation for bids, which will include any specifications and pertinent attachments, must define the items or services in order for the bidder to properly respond;

3. Sealed bids will be publicly opened in a place and at the specific time stated in the bid solicitation. Bidders shall be notified of the opening and invited to be present.

4. The contract will be awarded to the lowest responsive and responsible bidder.

a) Where specified in bidding documents, factors such as discounts, transportation cost, and life cycle costs must be considered in determining which bid is lowest.

b) Payment discounts will only be used to determine the low bid when prior experience indicates that such discounts are usually taken advantage of.

c) Any or all bids may be rejected if there is a sound documented reason.

5. The board shall have discretion in determining which bidders are responsible and responsive and shall award the contract to the lowest, responsible, and responsive bidder whose bid meets the bid specifications. This means that the board will select the bid that offers the best value and award a contract based upon the amount of the bid and the bidder's ability and capacity to carry on the work, its equipment and facilities, honesty, integrity, skills, business judgment, experience, equipment, facilities, financial stability, past performance, and other relevant factors.

6. The board will generally complete its review of bids and select a vendor within 30 days of bid submission.

B. Advertising for Bids.

1. The superintendent or designee will arrange to advertise for bids by publishing notice in any newspaper of general circulation within the school district at least 7 calendar days prior to the date on which bids are due.

2. Nothing shall prevent the superintendent or designee from advertising in additional media outlets or for a longer period of

time.

C. Bid Documents

1. The bid documents shall identify the day upon which the bids shall be returned, received, or opened and shall identify the hour at which the bids will close or be received or opened.
2. The bid documents shall also provide that such bids shall be opened simultaneously in the presence of the bidders or their representatives.
3. Bids received after the date and time specified in the bid documents shall be returned to the bidder unopened.
4. If bids are being opened on more than one contract, the board, in its discretion, may award each contract as the bids are opened.
5. Sealed bids will be opened in a place and at the specific time stated in the bid solicitation. Bidders shall be notified of the opening and invited to be present.
6. Bids will be reviewed by the Superintendent and/or designee and submitted to the board for approval.
7. The board shall have discretion in determining which bidders are responsible and responsive and shall award the contract to the lowest, responsible, and responsive bidder whose bid meets the bid specifications. This means that the board will select the bid that offers the best value and award a contract based upon the amount of the bid and the bidder's ability and capacity to carry on the work, its equipment and facilities, honesty, integrity, skills, business judgment, experience, equipment, facilities, financial stability, past performance, and other relevant factors.
8. The board will generally complete its review of bids and

select a vendor within 30 days of bid submission.

- D. The terms of any construction project undertaken pursuant to this policy will be memorialized in a written contract which has been reviewed by the district's legal counsel and approved by the board.

V. Other Contract Matters.

A. Required Terms

The non-Federal entity's contracts must contain the applicable provisions required by section 200.326 and described in Appendix II to Part 200—Contract Provisions for non-Federal Entity Contracts Under Federal Awards.

B. Contracting with Certain Vendors

Pursuant to the standards contained in 2 C.F.R. § 200.321, the District will take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible and consistent with state law.

To the maximum extent practicable, the school food program shall purchase domestic commodities or products produced in the U.S. or processed in the U.S. substantially using agricultural commodities produced in the U.S.

C. Full and Open Competition

The district's procurement transactions will be conducted in a manner providing full and open competition consistent with 2 C.F.R §200.319.

D. Debarment and Suspension

The District awards contracts only to responsible contractors possessing the ability to perform successfully under the terms and conditions of a proposed procurement. Consideration will be given to such matters as contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

The District may not subcontract with or award subgrants to any person or company who is debarred or suspended. For all contracts over \$25,000 the District verifies that the vendor with whom the District intends to do business with is not excluded or disqualified. 2 C.F.R. Part 200, Appendix II(1) and 2 C.F.R. §§ 180.220 and 180.300.

The District will verify debarment or suspension by revising the excluded parties list on SAM.gov, collecting a certification through the bidding process, and/or by including a debarment and suspension provision in the bid and contract documents. The Superintendent or his/her designee shall be responsible for such verification.

E. Settlements of Issues Arising Out of Contract

The District alone is responsible, in accordance with good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of procurements. These issues include, but are not limited to, source evaluation, protests, disputes, and claims. These standards do not relieve the District of any contractual responsibilities under its contracts. Violations of law will be referred to the local, state, or federal authority having proper jurisdiction.

F. Record Keeping

1. Record Retention

- a) The District maintains all records that fully show (1) the amount of funds under the grant or subgrant; (2) how the subgrantee uses those funds; (3) the total cost of each project; (4) the share of the total cost of each project provided from other sources; (5) other records to facilitate an effective audit; and (6) other records to show compliance with federal program requirements. 34 C.F.R. §§ 76.730-.731 and §§ 75.730-.731. The District also maintains records of significant project experiences and results. 34 C.F.R. § 75.732. These records and accounts must be retained and made available for programmatic or financial audit.
- b) The U.S. Department of Education is authorized to recover any federal funds misspent within 5 years before the receipt of a program determination letter. 34 C.F.R. § 81.31(c). Schedule 10 (Local School Districts) and Schedule 24 (Local Agencies General Records) of the Nebraska Records Management Division as approved by the Nebraska Secretary of State/State Records Administrator requires the District to maintain records regarding construction projects for a minimum of five (5) years after the sale or demolition of the building. However, if any litigation, claim, or audit is started

before the expiration of the record retention period, the records will be retained until all litigation, claims, or audit findings involving the records have been resolved and final action taken. 2 C.F.R. § 200.333.

- c) Records will be destroyed in compliance with Schedule 10, Schedule 24, and State law. This includes the completion of a Records Disposition Report.
2. Maintenance of Construction Records for Projects Financed with Federal Funds
- a) The District must maintain records sufficient to detail the history of all construction projects financed with federal funds. These records will include, but are not necessarily limited to the following: rationale for the method of construction, selection of contract type, contractor selection or rejection, the basis for the contract price (including a cost or price analysis), and verification that the contractor is not suspended or debarred.
 - b) Retention of construction records shall be in accordance with applicable law and Board policy.

VI. Conflict of Interest and Code of Conduct

- A. Board and staff member conflicts of interest are governed by the district's conflict of interest policies.
- B. Contracts covered by this policy are subject to the following additional provisions.
 - 1. Employees, officers, and agents engaged in the selection, award, and/or administration of district contracts which are prohibited from engaging in such actions if a real or apparent conflict of interest is present.
 - 2. Such a conflict of interest would arise when the employee, officer, or agent, any member of his or her immediate family, his or her partner, or an organization which employs or is about to employ any of the parties indicated herein, has a financial or other interest in or a tangible personal benefit from a firm considered for a contract.

3. The board may determine at its discretion that a financial interest is not substantial enough to give rise to a conflict of interest.

C. Favors and Gifts

The officers, employees, and agents of the District may neither solicit nor accept gratuities, favors, or anything of monetary value from contractors or parties to subcontracts, with the limited exception of unsolicited items of nominal value.

D. Enforcement

Disciplinary Actions will be applied for violations of such standards by officers, employees, or agents of the District at the board's discretion.

VII. Financial Management

A. Identification.

The District will identify, in its accounts, all federal awards received and expended and the federal programs under which they were received. Federal program and award identification include, as applicable, the CFDA title and number, federal award identification number and year, name of the federal agency, and, if applicable, name of the pass-through entity.

B. Financial Reporting

The District will make an accurate, current, and complete disclosure of the financial results of each federal award or program in accordance with the

financial reporting requirements set forth in the Education Department General Administrative Regulations (EDGAR).

C. Accounting Records

The District maintains records which adequately identify the source and application of funds provided for federally-assisted activities. These records must contain information pertaining to grant or subgrant awards, authorizations, obligations, unobligated balances, assets, expenditures, income and interest and be supported by source documentation.

D. Internal Controls

The Superintendent or his/her designee must maintain effective control and accountability for all funds, real and personal property, and other assets through board review and approval of claims, an annual audit of the district's finances pursuant to the applicable Nebraska Department of Education and federal rules and regulations, and comparison of expenditures and outlays to budgeted amounts. The District adequately safeguards all such property and assures that it is used solely for authorized purposes.

E. Budget Control

Actual expenditures or outlays will be compared with budgeted amounts for each federal award at least annually and more often as required by law or deemed prudent by the board or administrative staff.

F. Payment Methods

The District will comply with applicable methods and procedures for payment that minimize the time elapsing between the transfer of funds and disbursement by the District, in accordance with the Cash Management Improvement Act at 31 CFR Part 205. Generally, the District receives

payment from the Nebraska Department of Education on a reimbursement basis. 2 CFR § 200.305. However, if the District receives an advance in federal grant funds, the District will remit interest earned on the advanced payment quarterly to the federal agency. The District may retain interest amounts up to \$500 per year for administrative expenses. 2 CFR § 200.305(b)(9).

Consistent with state and federal requirements, the District will maintain source documentation supporting the federal expenditures (invoices, time sheets, payroll stubs, etc.) and will make such documentation available for the Nebraska Department of Education to review upon request.

G. Allowability of Costs

Expenditures must be aligned with approved budgeted items. Any changes or variations from the state-approved budget and grant application need prior approval.

When determining how the District will spend its grant funds, the Superintendent or his/her designee will review the proposed cost to determine whether it is an allowable use of federal grant funds before obligating and spending those funds on the proposed good or service. All costs supported by federal education funds must meet the standards outlined in EDGAR, 2 CFR Part 3474 and 2 CFR Part. The Superintendent or his/her designee must consider these factors when making an allowability determination.

The Superintendent or his/her designee will consider Part 200's cost guidelines when federal grant funds are expended. The Superintendent or his/her designee will also consider whether all state - and District-level requirements and policies regarding expenditures have been followed.

H. Use of Program Income – Deduction, Addition, or Cost Sharing or Matching

The default method for the use of program income for the District is the deduction method. 2 C.F.R. § 200.307(e). Under the deduction method, program income is deducted from total allowable costs to determine the net allowable costs. Program income will only be used for current costs unless the District is otherwise directed by the federal awarding agency or pass-through entity. 2 C.F.R. § 200.307(e)(1). The District may also request prior approval from the federal awarding agency to use the addition method. Under the addition method, program income may be added to the Federal award by the Federal agency and the non-Federal entity. The program income must then be used for the purposes and under the conditions of the Federal award.

2 C.F.R. § 200.307(e)(2). The District may also request prior approval from the federal awarding agency to use the cost sharing or matching method.

While the deduction method is the default method, the District always refers to the grant award notice prior to determining the appropriate use of program income.

I. Cost Sharing or Matching

For all Federal awards, any shared costs or matching funds and all contributions, including cash and third-party in-kind contributions, must be accepted as part of the non-Federal entity's cost sharing or matching when such contributions meet all of the following criteria:

- (1) Are verifiable from the non-Federal entity's records;
- (2) Are not included as contributions for any other Federal award;
- (3) Are necessary and reasonable for accomplishment of project or program objectives;
- (4) Are allowable under subpart E (Cost Principles) of this part;
- (5) Are not paid by the Federal Government under another Federal award, except where the Federal statute authorizing a program specifically provides that Federal funds made available for such program can be applied to matching or cost sharing requirements of other Federal programs;
- (6) Are provided for in the approved budget when required by the Federal awarding agency; and
- (7) Conform to other provisions of this part, as applicable.

J. Documentation of Personnel Expenses

Records that reflect charges to federal awards for salaries and wages will comply with the rules and requirements of 2 CFR 200.430.

VIII. Other Contract Matters.

A. Required Terms

The non-Federal entity's contracts must contain the applicable provisions required by section 200.326 and described in Appendix II to Part 200—

Contract Provisions for non-Federal Entity Contracts Under Federal Awards.

B. Contracting with Certain Vendors

Pursuant to the standards contained in 2 C.F.R. § 200.321, the District will take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible consistent with state law.

To the maximum extent practicable, the school food program shall purchase domestic commodities or products produced in US or processed in US substantially using agricultural commodities produced in US.

C. Record Keeping

1. Record Retention

a) The District maintains all records that fully show (1) the amount of funds under the grant or subgrant; (2) how the subgrantee uses those funds; (3) the total cost of each project; (4) the share of the total cost of each project provided from other sources; (5) other records to facilitate an effective audit; and (6) other records to show compliance with federal program requirements. 34 C.F.R. §§ 76.730-.731 and §§ 75.730-.731. The District also maintains records of significant project experiences and results. 34 C.F.R. § 75.732. These records and accounts must be retained and made available for programmatic or financial audit.

b) The U.S. Department of Education is authorized to recover any federal funds misspent within 5 years before the receipt of a program determination letter. 34 C.F.R. § 81.31(c). Schedule 10 (Local School Districts) and Schedule 24 (Local Agencies General Records) of the Nebraska Records Management Division as approved by the Nebraska Secretary of State/State Records Administrator requires the District to maintain records regarding federal awards for a minimum of six (6) years. Consequently, the District shall retain records for a minimum of six (6) years from the date on which the final Financial Status Report is submitted, unless otherwise notified in writing to extend the retention period by the awarding agency, cognizant agency for audit,

oversight agency for audit, or cognizant agency for indirect costs. However, if any litigation, claim, or audit is started before the expiration of the record retention period, the records will be retained until all litigation, claims, or audit findings involving the records have been resolved and final action taken. 2 C.F.R. § 200.333.

c) Records will be destroyed in compliance with Schedule 10, Schedule 24, and State law. This includes the completion of a Records Disposition Report.

2. Maintenance of Procurement Records

a) The District must maintain records sufficient to detail the history of all procurements. These records will include, but are not necessarily limited to the following: rationale for the method of procurement, selection of contract type, contractor selection or rejection, the basis for the contract price (including a cost or price analysis), and verification that the contractor is not suspended or debarred.

b) Retention of procurement records shall be in accordance with applicable law and Board policy.

D. Privacy

The District has protections in place to ensure that the personal information of both students and employees is protected. These include the use of passwords that are changed on a regular basis; staff training on the requirements of the Family Educational Rights and Privacy Act (FERPA) and State confidentiality requirements; and training on identifying whether an individual requesting access to records has the right to the documentation.

Adopted on: _____

Revised on: _____

Reviewed on: _____

3004.1

Fiscal Management for Purchasing and Procurement Using Federal Funds

IX. Applicability of Policy

This policy applies only to non-construction related purchases undertaken with federal funds which are subject to the federal Uniform Grant Guidance (UGG) and other applicable federal law, including but not limited to the Education Department and General Administration Regulations (EDGAR) and the United States Department of Agriculture (USDA) regulations governing school food service programs. In the event this policy conflicts or is otherwise inconsistent with mandatory provisions of the UGG, EDGAR or other applicable federal law, the mandatory provisions of the laws shall control.

All other non-construction purchases will be governed by the Board's general purchasing policy, which can be found earlier in this subsection. In the event of a conflict between state and federal law, the more stringent requirement shall apply.

This procurement policy shall govern all purchasing activities that relate to any aspect of the National School Lunch and Breakfast Programs. The district's goal is to fully implement all required procurement rules, regulations and policies set forth in 2 CFR 200, 7 CFR parts 210, 3016 and 3019, and by the Nebraska Department of Education.

X. Procurement System

The District maintains the following purchasing procedures.

A. Responsibility for Purchasing

The authority to make purchases shall be governed by the District's purchasing policy, which can be found elsewhere in this section. Except as otherwise provided in the District's purchasing policy, the acquisition of services, equipment, and supplies shall be centralized in the administration office under the supervision of the superintendent of schools, who shall be responsible for developing and administering the purchasing program of the school district. Purchases or commitments of district funds that are not authorized by this policy will be the responsibility of the person making the commitment.

B. Methods of Purchasing

The type of purchase procedures required depends on the cost of the item(s) being purchased.

1. Purchases up to \$10,000 (Micro-Purchases)

Micro-purchase means a purchase of supplies or services using simplified acquisition procedures, the annual aggregate amount of which does not exceed \$10,000. Micro-purchases may be made or awarded without soliciting competitive quotations, to the extent district staff determine that the cost of the purchase is reasonable. For purposes of this policy “reasonable” means the purchase is comparable to market prices for the geographic area.

To the extent practicable, the District distributes micro-purchases equitably among qualified suppliers. The District will follow its standard policy on purchasing, which can be found earlier in this subsection.

2. Purchases between \$10,000 and \$250,000 (Small Purchase Procedures)

Small purchases are purchases that, in the aggregate amount, is more than \$10,000 and less than \$250,000 annually. For small purchases, price or rate quotes shall be obtained in advance from a reasonable number of qualified sources as detailed in the district’s standard policies on purchasing and on bid letting and contracts, which can be found earlier in this subsection.

3. Purchases Over \$250,000

a) Sealed Bids (Formal Advertising)

For purchases over \$250,000, the district will generally follow the bidding process outlined in the board’s policy on Bidding for Construction, Remodeling, Repair or Site Improvement.

b) Contract/Price Analysis

The District performs a cost or price analysis in connection with every procurement action in excess of \$250,000, including contract modifications. The district will make an independent estimate of costs prior to receiving bids or proposals.

4. Noncompetitive Proposals (Sole Sourcing)

- a) Procurement by noncompetitive proposals is procurement through solicitation of a proposal from only one source and may be used only when one or more of the following circumstances apply:
- (1) The item is available only from a single source;
 - (2) The public exigency or emergency for the requirement will not permit a delay resulting from competitive solicitation;
 - (3) The federal awarding agency or pass-through entity expressly authorizes noncompetitive proposals in response to a written request from the District; or
 - (4) After solicitation of a number of sources, competition is determined inadequate.
- b) Noncompetitive proposals may only be solicited with the approval of the superintendent or the board. Sufficient and appropriate documentation that justifies the sole sourcing decision must be maintained by the superintendent or designee.
- c) A cost or price analysis will be performed for noncompetitive proposals when the price exceeds \$250,000.

Deleted:

5. Competitive Proposals.

- a) The technique of competitive proposals is normally conducted with more than one source submitting an offer, and either a fixed price or cost-reimbursement type contract is awarded. It is generally used when conditions are not appropriate for the use of sealed bids. If this method is used, the following requirements apply:
- (1) Requests for proposals must be publicized and identify all evaluation factors and their relative importance. Any response to publicized requests for proposals must be considered to the maximum extent practical;

(2) Proposals must be solicited from an adequate number of qualified sources; and

(3) Contracts must be awarded to the responsible firm whose proposal is most advantageous to the program, with price and other factors considered.

b) The District may use competitive proposal procedures for qualifications-based procurement of architectural/engineering (A/E) professional services whereby competitors' qualifications are evaluated and the most qualified competitor is selected, subject to negotiation of fair and reasonable compensation. The method, where price is not used as a selection factor, can only be used in procurement of A/E professional services. It cannot be used to purchase other types of services though A/E firms are a potential source to perform the proposed effort.

c) The District may select a proposal that offers the best value and that is based upon the proposer's responsiveness to the proposal, experience, reputation, staff qualifications, ability and capacity to carry on the work, price, honesty, integrity, skills, business judgment, financial stability, past performance, and other relevant factors. The evaluation may be conducted by the school board, a designated committee, or another designee of the school board.

C. Use of Purchase (Debit & Credit) Cards

District use of purchase cards is subject to the policy on purchase cards which can be found elsewhere in this subsection.

D. Federal Procurement System Standards

The district's procurement transactions will be conducted in a manner providing full and open competition consistent with 2 C.F.R §200.319.

The District will maintain and follow general procurement standards consistent with 2 C.F.R. §200.318.

E. Debarment and Suspension

The District awards contracts only to responsible contractors possessing the ability to perform successfully under the terms and conditions of a proposed procurement. Consideration will be given to such matters as contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

The District may not subcontract with or award subgrants to any person or company who is debarred or suspended. For all contracts over \$25,000 the District verifies that the vendor with whom the District intends to do business with is not excluded or disqualified. 2 C.F.R. Part 200, Appendix II(1) and 2 C.F.R. §§ 180.220 and 180.300.

The District will verify debarment or suspension by revising the excluded parties list on SAM.gov, collecting a certification through the bidding process, and/or by including a debarment and suspension provision in the bid and contract documents. The Superintendent or his/her designee shall be responsible for such verification.

F. Settlements of Issues Arising Out of Procurements

The District alone is responsible, in accordance with good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of procurements. These issues include, but are not limited to, source evaluation, protests, disputes, and claims. These standards do not relieve the District of any contractual responsibilities under its contracts. Violations of law will be referred to the local, state, or federal authority having proper jurisdiction.

XI. Conflict of Interest and Code of Conduct

- A. Board and staff member conflicts of interest are governed by the district's conflict of interest policies.

B. Purchases covered by this policy are subject to the following additional provisions.

1. Employees, officers, and agents engaged in the selection, award, and/or administration of district contracts which are prohibited from engaging in such actions if a real or apparent conflict of interest is present.

2. Such a conflict of interest would arise when the employee, officer, or agent, any member of his or her immediate family, his or her partner, or an organization which employs or is about to employ any of the parties indicated herein, has a financial or other interest in or a tangible personal benefit from a firm considered for a contract.

3. The board may determine at its discretion that a financial interest is not substantial enough to give rise to a conflict of interest.

C. Favors and Gifts

The officers, employees, and agents of the District may neither solicit nor accept gratuities, favors, or anything of monetary value from contractors or parties to subcontracts, except that this provision does not prohibit the receipt of unsolicited items of nominal value. For purposes of this policy, "nominal value" means a fair market value of \$25 or less.

D. Enforcement

Disciplinary Actions including, but not limited to, counseling, oral reprimand, written reprimand, suspensions without pay, or termination of employment, will be applied for violations of such standards by officers, employees, or agents of the District.

XII. Property Management Systems

A. Property Classifications

1. Equipment means tangible personal property (including information technology systems) having a useful life of more than one year and a per-unit acquisition cost which equals or exceeds the lesser of the capitalization level established by the District for financial statement purposes, or \$5,000.

2. Supplies means all tangible personal property other than those described in §200.33 Equipment. A computing device is a supply if the acquisition cost is less than the lesser of the capitalization level established by the District for financial statement purposes or \$5,000, regardless of the length of its useful life. 2 C.F.R. §200.94.

3. Computing Devices means machines used to acquire, store, analyze, process, and publish data and other information electronically, including accessories (or "peripherals") for printing, transmitting and receiving, or storing electronic information. 2 C.F.R. §200.20.

4. Capital Assets means tangible or intangible assets used in operations having a useful life of more than one year which are capitalized in accordance with GAAP. Capital assets include:

a) Land, buildings (facilities), equipment, and intellectual property (including software) whether acquired by purchase, construction, manufacture, lease-purchase, exchange, or through capital leases; and

b) Additions, improvements, modifications, replacements, rearrangements, reinstallations, renovations or alterations to capital assets that materially increase their value or useful life (not ordinary repairs and maintenance). 2 C.F.R. §200.12.

B. Inventory Procedure

Newly purchased property shall be received and inspected by the staff member who ordered it to ensure that that it matches the purchase order, invoice, or contract and that it is in acceptable

condition.

Equipment, Computing Devices, and Capital Assets must be tagged with an identification number, manufacturer, model, name of individual who tagged the item, and date tagged).

C. Inventory Records

For equipment, computing devices, and capital assets purchased with federal funds, the following information is maintained in the property management system:

1. Serial number;
2. District identification number;
3. Manufacturer;
4. Model;
5. Date tagged and individual who tagged it;
6. Source of funding for the property;
7. Who holds title;
8. Acquisition date and cost of the property;
9. Percentage of federal participation in the project costs for the federal award under which the property was acquired;
10. Location, use and condition of the property; and
11. Any ultimate disposition data including the date of disposal and sale price of the property.

The inventory list shall be adjusted by the superintendent of schools or his/her designee for property that is sold, lost, stolen, cannot be repaired, or that cannot be located.

D. Physical Inventory

1. A physical inventory of the property must be taken and the

results reconciled with the property records at least once every two years.

2. The Superintendent or his/her designee will ensure that the physical inventory is performed. The physical inventory will generally occur during the months of June or July, but may be conducted during other time periods with the approval of the superintendent.

E. Maintenance

In accordance with 2 C.F.R. 313(d)(4), the District maintains adequate maintenance procedures to ensure that property is kept in good condition.

F. Lost or Stolen Items

The District maintains a control system that ensures adequate safeguards are in place to prevent loss, damage, or theft of the property.

G. Use of Equipment

Equipment must be used in the program or project for which it was acquired as long as needed, whether or not the project or program continues to be supported by the federal award, and the District will not encumber the property for any non-federal program use without prior approval of the federal awarding agency and the pass-through entity.

H. Disposal of Equipment

When it is determined that original or replacement equipment acquired under a federal award is no longer needed for the original project or program or for other activities currently or previously supported by a federal awarding agency, the Superintendent or his/her designee will contact the awarding agency (or pass-through for a state-administered grant) for disposition instructions.

If the item has a current FMV of \$5,000 or less, it may be retained, sold, or otherwise disposed of with no further obligation to the federal awarding agency.

I. Equipment and Capital Expenditures

All equipment and capital expenditures shall comply with the rules and requirements of 2 CFR 200.439.

J. Depreciation

All depreciation shall comply with the rules and requirements of 2 CFR 200.436.

XIII. Financial Management

A. Identification

Deleted: .

The District will identify, in its accounts, all federal awards received and expended and the federal programs under which they were received. Federal program and award identification include, as applicable, the CFDA title and number, federal award identification number and year, name of the federal agency, and, if applicable, name of the pass-through entity.

B. Financial Reporting

The District will make an accurate, current, and complete disclosure of the financial results of each federal award or program in accordance with the financial reporting requirements set forth in the Education Department General Administrative Regulations (EDGAR).

C. Accounting Records

The District maintains records which adequately identify the source and application of funds provided for federally-assisted activities. These records must contain information pertaining to grant or subgrant awards, authorizations, obligations, unobligated balances, assets, expenditures, income and interest and be supported by source documentation.

D. Internal Controls

The Superintendent or his/her designee must maintain effective control and accountability for all funds, real and personal property, and other assets through board review and approval of claims, an annual audit of the district's finances pursuant to the applicable Nebraska Department of Education and federal rules and regulations, and comparison of expenditures and outlays to budgeted amounts. The District adequately safeguards all such property and assures that it is used solely for authorized purposes.

E. Budget Control

Actual expenditures or outlays will be compared with budgeted amounts for each federal award at least annually and more often as required by law or deemed prudent by the board or administrative staff.

F. Payment Methods

The District will comply with applicable methods and procedures for payment that minimize the time elapsing between the transfer of funds and disbursement by the District, in accordance with the Cash Management Improvement Act at 31 CFR Part 205. Generally, the District receives payment from the Nebraska Department of Education on a reimbursement basis. 2 CFR § 200.305. However, if the District receives an advance in federal grant funds, the District will remit interest earned on the advanced payment quarterly to the federal agency. The District may retain interest amounts up to \$500 per year for administrative expenses. 2 CFR § 200.305(b)(9).

Consistent with state and federal requirements, the District will maintain source documentation supporting the federal expenditures (invoices, time sheets, payroll stubs, etc.) and will make such documentation available for the Nebraska Department of Education to review upon request.

G. Allowability of Costs

Expenditures must be aligned with approved budgeted items. Any changes or variations from the state-approved budget and grant application need prior approval.

When determining how the District will spend its grant funds, the Superintendent or his/her designee will review the proposed cost to determine whether it is an allowable use of federal grant funds before obligating and spending those funds on the proposed good or service. All costs supported by federal education funds must meet the standards outlined in EDGAR, 2 CFR Part 3474 and 2 CFR Part. The Superintendent or his/her designee must consider these factors when making an allowability determination.

The Superintendent or his/her designee will consider Part 200's cost guidelines when federal grant funds are expended. The Superintendent or his/her designee will also consider whether all state - and District-level requirements and policies regarding expenditures have been followed.

H. Use of Program Income – Deduction, Addition, or Cost Sharing or Matching

The default method for the use of program income for the District is the deduction method. 2 C.F.R. § 200.307(e). Under the deduction method, program income is deducted from total allowable costs to determine the net allowable costs. Program income will only be used for current costs unless the District is otherwise directed by the federal awarding agency or pass-through entity. 2 C.F.R. § 200.307(e)(1). The District may also request prior approval from the federal awarding agency to use the addition method. Under the addition method, program income may be added to the Federal award by the Federal agency and the non-Federal entity. The program income must then be used for the purposes and under the conditions of the Federal award. 2 C.F.R. § 200.307(e)(2). The District may also request prior approval from the federal awarding agency to use the cost sharing or matching method.

While the deduction method is the default method, the District always refers to the grant award notice prior to determining the appropriate use of program income.

I. Cost Sharing or Matching

For all Federal awards, any shared costs or matching funds and all contributions, including cash and third-party in-kind contributions, must be accepted as part of the non-Federal entity's cost sharing or matching when such contributions meet all of the following criteria:

- (1) Are verifiable from the non-Federal entity's records;
- (2) Are not included as contributions for any other Federal award;
- (3) Are necessary and reasonable for accomplishment of project or program objectives;
- (4) Are allowable under subpart E (Cost Principles) of this part;
- (5) Are not paid by the Federal Government under another Federal award, except

Deleted: ¶



where the Federal statute authorizing a program specifically provides that Federal funds made available for such program can be applied to matching or cost sharing requirements of other Federal programs;

- (6) Are provided for in the approved budget when required by the Federal awarding agency; and
- (7) Conform to other provisions of this part, as applicable.

J. Documentation of Personnel Expenses

Records that reflect charges to federal awards for salaries and wages will comply with the rules and requirements of 2 CFR 200.430.

XIV. Written Compensation Policies

A. Time and Effort Standards

All employees who are paid in full or in part with federal funds must keep specific documents to demonstrate the amount of time they spent on grant activities. This includes an employee whose salary is paid with state or local funds but is used to meet a required “match” in a federal program. These documents, known as time and effort records, are maintained in order to charge the costs of personnel compensation to federal grants. Charges to federal awards for salaries and wages must be based on records that accurately reflect the work performed. These records must:

- (1) Be supported by a system of internal controls which provides reasonable assurance that the charges are accurate, allowable, and properly allocated;
- (2) Be incorporated into official records;
- (3) Reasonably reflect total activity for which the employee is compensated, not exceeding 100% of compensated activities;
- (4) Encompass both federally assisted and all other activities compensated by the District on an integrated basis;
- (5) Comply with the established accounting policies and practices of the District and
- (6) Support the distribution of the employee’s salary or wages among specific activities or costs objectives.

B. Time and Effort Procedures

Time and effort procedures will follow and comply with 2 CFR 200.430(i).

C. Fringe Benefits

Except as provided otherwise by federal law, the costs of fringe benefits will be allowable provided that the benefits are reasonable and required by law, a district-employee agreement, or another policy of the District.

D. Leave

The cost of fringe benefits in the form of regular compensation paid to employees during periods of authorized absences from the job, such as for annual leave, family-related leave, sick leave, holidays, court leave, military leave, administrative leave, and other similar benefits, are allowable if they are provided under established written District leave policies.

E. Unexpected or Extraordinary Circumstances

In the event of a pandemic or other unexpected or extraordinary circumstance, the District may close school or individual buildings. In such case, the District may compensate federally funded or other employees during such closure to ensure the return of staff to employment after the closure as allowed by state or federal law.

F. Documentation for Personnel Expenses

Records that reflect charges to federal awards for salaries and wages will comply with the rules and requirements of 2 CFR 200.430.

XV. Other Contract Matters.

A. Required Terms

The non-Federal entity's contracts must contain the applicable provisions required by section 200.326 and described in Appendix II to Part 200—Contract Provisions for non-Federal Entity Contracts Under Federal Awards.

B. Contracting with Certain Vendors

Pursuant to the standards contained in 2 C.F.R. § 200.321, the District will take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible consistent with state law.

To the maximum extent practicable, the school food program shall purchase domestic

commodities or products produced in US or processed in US substantially using agricultural commodities produced in US.

C. Record Keeping

1. Record Retention

a) The District maintains all records that fully show (1) the amount of funds under the grant or subgrant; (2) how the subgrantee uses those funds; (3) the total cost of each project; (4) the share of the total cost of each project provided from other sources; (5) other records to facilitate an effective audit; and (6) other records to show compliance with federal program requirements. 34 C.F.R. §§ 76.730-.731 and §§ 75.730-.731. The District also maintains records of significant project experiences and results. 34 C.F.R. § 75.732. These records and accounts must be retained and made available for programmatic or financial audit.

b) The U.S. Department of Education is authorized to recover any federal funds misspent within 5 years before the receipt of a program determination letter. 34 C.F.R. § 81.31(c). Schedule 10 (Local School Districts) and Schedule 24 (Local Agencies General Records) of the Nebraska Records Management Division as approved by the Nebraska Secretary of State/State Records Administrator requires the District to maintain records regarding federal awards for a minimum of six (6) years. Consequently, the District shall retain records for a minimum of six (6) years from the date on which the final Financial Status Report is submitted, unless otherwise notified in writing to extend the retention period by the awarding agency, cognizant agency for audit, oversight agency for audit, or cognizant agency for indirect costs. However, if any litigation, claim, or audit is started before the expiration of the record retention period, the records will be retained until all litigation, claims, or audit findings involving the records have been resolved and final action taken. 2 C.F.R. § 200.333.

c) Records will be destroyed in compliance with Schedule 10, Schedule 24, and State law. This includes the completion of a Records Disposition Report.

2. Maintenance of Procurement Records

a) The District must maintain records sufficient to detail the history of all procurements. These records will include, but are not necessarily limited to the following: rationale for the method of procurement, selection of contract type, contractor selection or rejection, the basis for the contract price (including a cost or price analysis), and verification that the contractor is not suspended or debarred.

b) Retention of procurement records shall be in accordance with applicable law and Board policy.

D. Privacy

The District has protections in place to ensure that the personal information of both students and employees is protected. These include the use of passwords that are changed on a regular basis; staff training on the requirements of the Family Educational Rights and Privacy Act (FERPA) and State confidentiality requirements; and training on identifying whether an individual requesting access to records has the right to the documentation.

Adopted on: _____

Revised on: _____

Reviewed on: _____

**3057
Title IX Policy**

It is the policy of the school district that no person shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any of the school district's programs or activities. The district is required by Title IX (20 U.S.C. § 1681) and 34 C.F.R. part 106 to not discriminate in such a manner.

1. **Title IX Coordinator**

1.1. **Designation.** The district will designate and authorize at least one employee to coordinate its efforts to comply with its responsibilities under this policy, who will be referred to as the "**Title IX Coordinator.**" The district will notify applicants for admission and employment, students, parents or legal guardians of students, employees, and all unions or professional organizations holding collective bargaining or professional agreements with the district, of the name or title, office address, electronic mail address, and telephone number of the Title IX Coordinator. Any person may report sex discrimination, including sexual harassment (whether or not the person reporting is the person alleged to be the victim of conduct that could constitute sex discrimination or sexual harassment). This report may be made by any means, including but not limited to, in person, by mail, by telephone, or by electronic mail, using the contact information listed for the Title IX Coordinator, or by any other means that results in the Title IX Coordinator receiving the person's verbal or written report. Such a report may be made at any time (including during non-business hours).

2. **Definitions.** As used in this policy, the following terms are defined as follows:

2.1. **Actual knowledge** means notice of sexual harassment or allegations of sexual harassment to any district employee. Imputation of knowledge based solely on vicarious liability or constructive notice is insufficient to constitute actual knowledge. This standard is not met when the only district employee with actual knowledge is the respondent (as that term is defined below). "Notice" as used in this paragraph includes, but is not limited to, a report of sexual harassment to the Title IX Coordinator as described in subsection 1.1 above.

2.2. **Complainant** means an individual who is alleged to be the victim of conduct that could constitute sexual harassment.

2.3. **Formal complaint** means a document filed by a complainant or signed by the Title IX Coordinator alleging sexual harassment against a respondent and requesting that the district investigate the allegation of sexual harassment. The only district official who is authorized to initiate the Grievance Process for Formal Complaints of Sexual Harassment against a respondent is the Title IX Coordinator (by signing a formal complaint). At the time of filing a formal complaint with the district, a complainant must be participating in or attempting to participate in the district's education program or activity. A formal complaint may be filed with the Title IX Coordinator in person, by mail, or by electronic mail,

by using the contact information required to be listed for the Title IX Coordinator under subsection 1.1 above, and by any additional method designated by the district. As used in this paragraph, the phrase “document filed by a complainant” means a document or electronic submission (such as by electronic mail or through an online portal provided for this purpose by the district) that contains the complainant’s physical or digital signature, or otherwise indicates that the complainant is the person filing the formal complaint. Where the Title IX Coordinator signs a formal complaint, the Title IX Coordinator is not a complainant or otherwise a party under this policy or under 34 C.F.R. part 106, and will comply with the requirements of this policy and 34 C.F.R. part 106, including subsections 5.1.3–5.1.4 and 34 C.F.R. § 106.45(b)(1)(iii).

2.4. **Respondent** means an individual who has been reported to be the perpetrator of conduct that could constitute sexual harassment.

2.5. **Consent** for purposes of this policy means the willingness in fact for conduct to occur. An individual may, as a result of age, incapacity, disability, lack of information, or other circumstances be incapable of providing consent to some or all sexual conduct or activity. Neither verbal nor physical resistance is required to establish that an individual did not consent. District officials will consider the totality of the circumstances in determining whether there was consent for any specific conduct. Consent may be revoked or withdrawn at any time.

2.6. **Sexual harassment** means conduct on the basis of sex that satisfies one or more of the following:

- 2.6.1. An employee of the district conditioning the provision of an aid, benefit, or service of the district on an individual’s participation in unwelcome sexual conduct;
- 2.6.2. Unwelcome conduct determined by a reasonable person to be so severe, pervasive, and objectively offensive that it effectively denies a person equal access to the district’s education program or activity;
- 2.6.3. **Sexual assault**, as defined in 20 U.S.C. § 1092(f)(6)(A)(v), which means an offense classified as a forcible or nonforcible sex offense under the uniform crime reporting system of the Federal Bureau of Investigation:

- 2.6.3.1. **Sex Offenses, Forcible**—Any sexual act directed against another person, without the consent of the victim including instances where the victim is incapable of giving consent.
- 2.6.3.1.1. **Rape**—(Except Statutory Rape) The carnal knowledge of a person, without the consent of the victim, including instances where the victim is incapable of giving consent because of his/her age or because of his/her temporary or permanent mental or physical incapacity.
- 2.6.3.1.2. **Sodomy**—Oral or anal sexual intercourse with another person, without the consent of the victim, including instances where the victim is incapable of giving consent because of his/her age or because of his/her temporary or permanent mental or physical incapacity
- 2.6.3.1.3. **Sexual Assault With An Object**—To use an object or instrument to unlawfully penetrate, however slightly, the genital or anal opening of the body of another person, without the consent of the victim, including instances where the victim is incapable of giving consent because of his/her age or because of his/her temporary or permanent mental or physical incapacity
- 2.6.3.1.4. **Fondling**—The touching of the private body parts of another person for the purpose of sexual gratification, without the consent of the victim, including instances where the victim is incapable of giving consent because of his/her age or because of his/her temporary or permanent mental or physical incapacity
- 2.6.3.2. **Sex Offenses, Non-forcible**—(Except Prostitution Offenses) Unlawful, non-forcible sexual intercourse.
- 2.6.3.2.1. **Incest**—Non-Forcible sexual intercourse between persons who are related to each other within the degrees wherein marriage is prohibited by law

2.6.3.2.2. **Statutory Rape**—Non-Forcible sexual intercourse with a person who is under the statutory age of consent

2.6.4. **Dating violence**, as defined in 34 U.S.C. § 12291(a), which means violence committed by a person—

2.6.4.1. who is or has been in a social relationship of a romantic or intimate nature with the victim; and

2.6.4.2. where the existence of such a relationship shall be determined based on a consideration of the following factors:

2.6.4.2.1. The length of the relationship.

2.6.4.2.2. The type of relationship.

2.6.4.2.3. The frequency of interaction between the persons involved in the relationship.

2.6.5. **Domestic violence**, as defined in 34 U.S.C. § 12291(a), which includes felony or misdemeanor crimes committed by a current or former spouse or intimate partner of the victim under the family or domestic violence laws of the jurisdiction receiving grant funding and, in the case of victim services, includes the use or attempted use of physical abuse or sexual abuse, or a pattern of any other coercive behavior committed, enabled, or solicited to gain or maintain power and control over a victim, including verbal, psychological, economic, or technological abuse that may or may not constitute criminal behavior, by a person who—

2.6.5.1. is a current or former spouse or intimate partner of the victim, or person similarly situated to a spouse of the victim;

2.6.5.2. is cohabitating, or has cohabitated, with the victim as a spouse or intimate partner;

2.6.5.3. shares a child in common with the victim; or

Commented [C1]: The 2022 Reauthorization of the Violence Against Women Act (“VAWA”) recodified the definition of **dating violence** at 12291(a)(11). This revision makes the statutory reference more general but still consistent with both the (now outdated) regulations and the new statute.

Deleted:)(10

Formatted: Indent: Left: 1.31", Hanging: 0.69", Outline numbered + Level: 4 + Numbering Style: 1, 2, 3, ... + Start at: 1 + Alignment: Left + Aligned at: 0.75" + Indent at: 1.2"

Formatted: Indent: Hanging: 0.69"

Formatted: Indent: Left: 1.31", Hanging: 0.69", Outline numbered + Level: 4 + Numbering Style: 1, 2, 3, ... + Start at: 1 + Alignment: Left + Aligned at: 0.75" + Indent at: 1.2"

Formatted: Left, Indent: Left: 0.5"

Formatted: Indent: Hanging: 1"

Formatted: Indent: Hanging: 1"

Commented [C2]: The 2022 VAWA recodified the definition of **domestic violence** at 12291(a)(12). This revision makes the statutory reference more general but still consistent with both the (now outdated) regulations and the new statute.

Deleted:)(8

Deleted: of violence

Deleted: , by a person with whom the

Deleted: shares a child in common

Deleted:

Deleted: with

Deleted: , by a person similarly situated to a spouse of the victim under the domestic or family violence laws of the jurisdiction receiving grant monies, or by other person

2.6.5.4. ~~commits acts against a youth or adult victim who is~~
protected from ~~those acts under the family or~~
~~domestic violence laws of the jurisdiction.~~

2.6.6. **Stalking**, as defined in 34 U.S.C. § 12291(a), which means
engaging in a course of conduct directed at a specific person
that would cause a reasonable person to—

2.6.6.1. fear for his or her safety or the safety of others; or

2.6.6.2. suffer substantial emotional distress.

2.7. **Supportive measures** means non-disciplinary, non-punitive individualized services offered as appropriate, as reasonably available, and without fee or charge to the complainant or the respondent before or after the filing of a formal complaint or where no formal complaint has been filed. Such measures are designed to restore or preserve equal access to the district's education program or activity without unreasonably burdening the other party, including measures designed to protect the safety of all parties or the district's educational environment, or deter sexual harassment. Supportive measures may include counseling, extensions of deadlines or other course-related adjustments, modifications of work or class schedules, campus escort services, mutual restrictions on contact between the parties, changes in work or housing locations, leaves of absence, increased security and monitoring of certain areas of the campus, and other similar measures. The district will maintain as confidential any supportive measures provided to the complainant or respondent, to the extent that maintaining such confidentiality would not impair the ability of the district to provide the supportive measures. The Title IX Coordinator is responsible for coordinating the effective implementation of supportive measures.

3. **Discrimination Not Involving Sexual Harassment.**

3.1. **General Prohibition.** Except as provided elsewhere in Title IX, 34 C.F.R. part 106, or this policy, no person shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any academic, extracurricular, research, occupational training, or other education program or activity operated by the district.

Deleted: an

Deleted: or youth

Formatted: Indent: Left: 1.31", Hanging: 0.69", Outline numbered + Level: 4 + Numbering Style: 1, 2, 3, ... + Start at: 1 + Alignment: Left + Aligned at: 0.75" + Indent at: 1.2"

Deleted: that person's

Commented [C3]: See 2022 Updates to VAWA.

Deleted: or family

Formatted: Justified, Indent: Left: 2"

Deleted:)(30

3.2. **Specific Prohibitions.** Except as provided elsewhere in Title IX, 34 C.F.R. part 106, or this policy, in providing any aid, benefit, or service to a student, the district will not on the basis of sex:

- 3.2.1. Treat one person differently from another in determining whether such person satisfies any requirement or condition for the provision of such aid, benefit, or service;
- 3.2.2. Provide different aid, benefits, or services or provide aid, benefits, or services in a different manner;
- 3.2.3. Deny any person any such aid, benefit, or service;
- 3.2.4. Subject any person to separate or different rules of behavior, sanctions, or other treatment;
- 3.2.5. Apply any rule concerning the domicile or residence of a student or applicant;
- 3.2.6. Aid or perpetuate discrimination against any person by providing significant assistance to any agency, organization, or person which discriminates on the basis of sex in providing any aid, benefit or service to students or employees;
- 3.2.7. Otherwise limit any person in the enjoyment of any right, privilege, advantage, or opportunity.

3.3. **Complaint Procedure.** All complaints regarding any alleged discrimination on the basis of sex, including without limitation violations of this policy, 34 C.F.R. part 106, Title IX, Title VII, or other state or federal law—when the alleged discrimination does not arise from or relate to an allegation of sexual harassment as defined in subsection 2.6 above—shall be addressed pursuant to the district’s general complaint procedure, Board Policy 2006

4. **Response to Sexual Harassment**

4.1. **Reporting Sexual Harassment.** Any person who witnesses an act of unlawful sexual harassment is encouraged to report it to the District’s Title IX Coordinator. No person will be retaliated against based on any report of suspected sexual harassment or retaliation. Any District employee who receives a report of sexual harassment or has

actual knowledge of sexual harassment must convey that information to the Title IX Coordinator as soon as reasonably practicable, but in no case later than the end of the following school day.

4.2. General Response to Sexual Harassment. When the district has actual knowledge of sexual harassment in its education program or activity against a person in the United States, the district will respond promptly in a manner that is not deliberately indifferent. The district will be deemed to be deliberately indifferent only if its response to sexual harassment is clearly unreasonable in light of the known circumstances. For the purposes of this policy "education program or activity" includes locations, events, or circumstances over which the district exercised substantial control over both the respondent and the context in which the sexual harassment occurs. The district's response will treat complainants and respondents equitably by offering supportive measures as defined in subsection 2.7 above to a complainant, and by following the grievance process described in section 5 below before the imposition of any disciplinary sanctions or other actions that are not supportive measures, against a respondent. The Title IX Coordinator will promptly contact the complainant to discuss the availability of supportive measures, consider the complainant's wishes with respect to supportive measures, inform the complainant of the availability of supportive measures with or without the filing of a formal complaint, and explain to the complainant the process for filing a formal complaint.

4.3. Emergency Removal. Nothing in this policy precludes the district from removing a respondent from the district's education program or activity on an emergency basis, provided that the district undertakes an individualized safety and risk analysis, and determines that an immediate threat to the physical health or safety of any student or other individual arising from the allegations of sexual harassment justifies removal. In the event that the district so removes a respondent on an emergency basis, then the district will provide the respondent with notice and an opportunity to challenge the decision immediately following the removal. This provision may not be construed to modify any rights under the Individuals with Disabilities Education Act, Section 504 of the Rehabilitation Act of 1973, or the Americans with Disabilities Act.

4.4. Administrative Leave. Nothing in this policy precludes the district from placing a non-student employee respondent on administrative leave during the pendency of a grievance process that complies with section 5 below. This provision may not be construed to

modify any rights under Section 504 of the Rehabilitation Act of 1973 or the Americans with Disabilities Act.

4.5. General Response Not Conditioned on Formal Complaint. With or without a formal complaint, the district will comply with the obligations and procedures described in this section 4.

5. Grievance Process for Formal Complaints of Sexual Harassment.

5.1. General Requirements.

- 5.1.1. **Equitable Treatment.** The district will treat complainants and respondents equitably by providing remedies to a complainant where a determination of responsibility for sexual harassment has been made against the respondent, and by following the grievance process described in this section 5 before the imposition of any disciplinary sanctions or other actions that are not supportive measures against a respondent. Remedies will be designed to restore or preserve equal access to the district's education program or activity. Remedies may include the same individualized services described in subsection 2.7 as "supportive measures"; however, remedies need not be non-disciplinary or non-punitive and need not avoid burdening the respondent.
- 5.1.2. **Objective Evaluation.** This grievance process requires an objective evaluation of all relevant evidence—including both inculpatory and exculpatory evidence. Credibility determinations may not be based on a person's status as a complainant, respondent, or witness.
- 5.1.3. **Absence of Conflicts of Interest or Bias.** The district will require that any individual designated by a recipient as a Title IX Coordinator, investigator, decision-maker, or any person designated by a recipient to facilitate an informal resolution process, not have a conflict of interest or bias for or against complainants or respondents generally or an individual complainant or respondent.
- 5.1.4. **Training.** The district will ensure that all individuals or entities described in this Training section 5.1.4 receive training as provided below. Any materials used to train

these individuals will not rely on sex stereotypes and will promote impartial investigations and adjudications of formal complaints of sexual harassment.

- 5.1.4.1. **All District Employees and Board Members.** All district employees and board members will be trained on how to identify and report sexual harassment.
- 5.1.4.2. **Title IX Coordinators, Investigators, Decision-Makers, or Informal Resolution Facilitators.** The district will ensure that Title IX Coordinators, investigators, decision-makers, or any person designated by the district to facilitate an informal resolution process receive training on:
 - 5.1.4.2.1. The definition of sexual harassment in subsection 2.6;
 - 5.1.4.2.2. The scope of the district's education program or activity;
 - 5.1.4.2.3. How to conduct an investigation and grievance process including hearings, appeals, and informal resolution processes, as applicable; and
 - 5.1.4.2.4. How to serve impartially, including by avoiding prejudgment of the facts at issue, conflicts of interest, and bias.
- 5.1.4.3. **Decision-Makers.** The district will ensure that decision-makers receive training on issues of relevance of questions and evidence, including when questions and evidence about the complainant's sexual predisposition or prior sexual behavior are not relevant, as set forth in subsection 5.6.2.
- 5.1.4.4. **Investigators.** The district will also ensure that investigators receive training on issues of relevance to create an investigative report that fairly summarizes relevant evidence, as set forth in subsection 5.5.8.

5.1.5. **Presumption.** It is presumed that the respondent is not responsible for the alleged conduct until a determination regarding responsibility is made at the conclusion of the grievance process.

5.1.6. **Reasonably Prompt Time Frames.** This grievance process shall include reasonably prompt time frames for conclusion of the grievance process, including reasonably prompt time frames for filing and resolving appeals and informal resolution processes if the district offers informal resolution processes. The process shall also allow for the temporary delay of the grievance process or the limited extension of time frames for good cause with written notice to the complainant and the respondent of the delay or extension and the reasons for the action. Good cause may include considerations such as the absence of a party, a party's advisor, or a witness; concurrent law enforcement activity; or the need for language assistance or accommodation of disabilities.

5.1.7. **Range of Possible Sanctions and Remedies.** Following a determination of responsibility, the district may impose disciplinary sanctions and remedies in conformance with this and the district's student discipline policy, and other state and federal laws. Depending upon the circumstances, these policies provide for disciplinary sanctions and remedies up to and including expulsion.

5.1.8. **Range of Supportive Measures.** The range of supportive measures available to complainants and respondents include those listed in subsection 2.7.

5.1.9. **Respect for Privileged Information.** The district will not require, allow, rely upon, or otherwise use questions or evidence that constitute, or seek disclosure of, information protected under a legally recognized privilege, unless the person holding such privilege has waived the privilege.

5.2. **Notice of Allegations.**

5.2.1. **Initial Notice.** Upon receipt of a formal complaint, the district will provide the following written notice to the parties who are known:

5.2.1.1. A copy of this policy.

5.2.1.2. Notice of the allegations of sexual harassment potentially constituting sexual harassment as defined in subsection 2.6, including sufficient details known at the time and with sufficient time to prepare a response before any initial interview. Sufficient details include the identities of the parties involved in the incident, if known, the conduct allegedly constituting sexual harassment, and the date and location of the alleged incident, if known. The written notice will include a statement that the respondent is presumed not responsible for the alleged conduct and that a determination regarding responsibility is made at the conclusion of the grievance process. The written notice will inform the parties that they may have an advisor of their choice, who may be, but is not required to be, an attorney, under subsection 5.5.5, and may inspect and review evidence under subsection 5.5.5. The written notice will inform the parties of any provision in the district's code of conduct that prohibits knowingly making false statements or knowingly submitting false information during the grievance process.

5.2.2. **Supplemental Notice.** If, in the course of an investigation, the district decides to investigate allegations about the complainant or respondent that are not included in the Initial Notice described above, the district will provide notice of the additional allegations to the parties whose identities are known.

5.3. **Dismissal of Formal Complaint.**

5.3.1. The district will investigate the allegations in a formal complaint.

5.3.2. **Mandatory Dismissals.** The district **must** dismiss a formal complaint if the conduct alleged in the formal complaint:

- 5.3.2.1. Would not constitute sexual harassment as defined in subsection 2.6 even if proved;
- 5.3.2.2. Did not occur in the district's education program or activity; or
- 5.3.2.3. Did not occur against a person in the United States.
- 5.3.3. **Discretionary Dismissals.** The district **may** dismiss the formal complaint or any allegations therein, if at any time during the investigation or hearing:
 - 5.3.3.1. The complainant notifies the Title IX Coordinator in writing that the complainant would like to withdraw the formal complaint or any allegations therein;
 - 5.3.3.2. The respondent is no longer enrolled in or employed by the district; or
 - 5.3.3.3. Specific circumstances prevent the district from gathering evidence sufficient to reach a determination as to the formal complaint or allegations therein.
- 5.3.4. Upon a dismissal required or permitted pursuant to subsections 5.3.2 or 5.3.3 above, the district will promptly send written notice of the dismissal and an explanation of that action simultaneously to the parties.
- 5.3.5. Dismissal of a formal complaint under this policy does not preclude the district from taking action under another provision of the district's code of conduct or pursuant to another district policy.

5.4. **Consolidation of Formal Complaints.** The district may consolidate formal complaints as to allegations of sexual harassment against more than one respondent, or by more than one complainant against one or more respondents, or by one party against the other party, where the allegations of sexual harassment arise out of the same facts or circumstances. Where a grievance process involves more than one complainant or more than one respondent, references in this policy to the singular "party," "complainant," or "respondent" include the plural, as applicable.

5.5. Investigation of Formal Complaint. When investigating a formal complaint and throughout the grievance process, the district will:

- 5.5.1. Designate and authorize one or more persons (which need not be district employees) as investigator(s) to conduct the district's investigation of a formal complaint;
- 5.5.2. Ensure that the burden of proof and the burden of gathering evidence sufficient to reach a determination regarding responsibility rest on the district and not on the parties provided that the district cannot access, consider, disclose, or otherwise use a party's records that are made or maintained by a physician, psychiatrist, psychologist, or other recognized professional or paraprofessional acting in the professional's or paraprofessional's capacity, or assisting in that capacity, and which are made and maintained in connection with the provision of treatment to the party, unless the district obtains that party's voluntary, written consent to do so for a grievance process under this section (if a party is not an "eligible student," as defined in 34 CFR 99.3, then the district will obtain the voluntary, written consent of a "parent," as defined in 34 CFR 99.3);
- 5.5.3. Provide an equal opportunity for the parties to present witnesses, including fact and expert witnesses, and other inculpatory and exculpatory evidence;
- 5.5.4. Not restrict the ability of either party to discuss the allegations under investigation or to gather and present relevant evidence;
- 5.5.5. Provide the parties with the same opportunities to have others present during any grievance proceeding, including the opportunity to be accompanied to any related meeting or proceeding by the advisor of their choice, who may be, but is not required to be, an attorney, and not limit the choice or presence of advisor for either the complainant or respondent in any meeting or grievance proceeding; however, the district may establish restrictions regarding the extent to which the advisor may participate in the proceedings, as long as the restrictions apply equally to both parties;

- 5.5.6. Provide, to a party whose participation is invited or expected, written notice of the date, time, location, participants, and purpose of all hearings, investigative interviews, or other meetings, with sufficient time for the party to prepare to participate;
- 5.5.7. Provide both parties an equal opportunity to inspect and review any evidence obtained as part of the investigation that is directly related to the allegations raised in a formal complaint, including the evidence upon which the district does not intend to rely in reaching a determination regarding responsibility and inculpatory or exculpatory evidence whether obtained from a party or other source, so that each party can meaningfully respond to the evidence prior to conclusion of the investigation. Prior to completion of the investigative report, the district will send to each party and the party's advisor, if any, the evidence subject to inspection and review in an electronic format or a hard copy, and the parties will have at least 10 calendar days to submit a written response, which the investigator will consider prior to completion of the investigative report; and
- 5.5.8. Create an investigative report that fairly summarizes relevant evidence and, at least 10 calendar days prior to the time of determination regarding responsibility, send to each party and the party's advisor, if any, the investigative report in an electronic format or a hard copy, for their review and written response.

5.6. Determination Regarding Responsibility

- 5.6.1. Decision-Maker(s). The decision-maker(s) cannot be the same person as the Title IX Coordinator or the investigator(s).
- 5.6.2. **Exchange of Written Questions.** After the district has sent the investigative report to the parties pursuant to subsection 5.5.8, but before reaching a determination regarding responsibility, the decision-maker(s) will afford each party the opportunity to submit written, relevant questions that a party wants asked of any party or witness, provide each party with the answers, and allow for additional, limited follow-up questions from each party.

Moved (insertion) [1]

Formatted: Indent: Left: 0.75", Hanging: 0.75", Outline numbered + Level: 3 + Numbering Style: 1, 2, 3, ... + Start at: 1 + Alignment: Left + Aligned at: 0.5" + Indent at: 0.85"

Questions and evidence about the complainant's sexual predisposition or prior sexual behavior are not relevant, unless such questions and evidence about the complainant's prior sexual behavior are offered to prove that someone other than the respondent committed the conduct alleged by the complainant, or if the questions and evidence concern specific incidents of the complainant's prior sexual behavior with respect to the respondent and are offered to prove consent. The decision-maker(s) will explain to the party proposing the questions any decision to exclude a question as not relevant.

5.6.3. **Written Determination.** The decision-maker(s) will issue a written determination regarding responsibility. To reach this determination, the decision-maker(s) will apply the preponderance of the evidence standard. The written determination will include:

- 5.6.3.1. Identification of the allegations potentially constituting sexual harassment as defined in subsection 2.6;
- 5.6.3.2. A description of the procedural steps taken from the receipt of the formal complaint through the determination, including any notifications to the parties, interviews with parties and witnesses, site visits, methods used to gather other evidence, and hearings held;
- 5.6.3.3. Findings of fact supporting the determination;
- 5.6.3.4. Conclusions regarding the application of the district's code of conduct to the facts;
- 5.6.3.5. A statement of, and rationale for, the result as to each allegation, including a determination regarding responsibility, any disciplinary sanctions the district imposes on the respondent, and whether remedies designed to restore or preserve equal access to the district's education program or activity will be provided by the district to the complainant; and

Commented [C5]: This section was moved from a stand-alone section 5.6 (that was wedged in between the investigation and decision-making process) and placed under the decision-making umbrella. The change is intended to clarify that the decision-maker will facilitate the written exchange of questions and helps avoid situation where the decision-maker fails to facilitate such an exchange.

Moved up [1]: Determination Regarding Responsibility

Decision-Maker(s). The decision-maker(s) cannot be the same person as the Title IX Coordinator or the investigator(s).

Deleted:

- 5.6.3.6. The district's procedures and permissible bases for the complainant and respondent to appeal.
- 5.6.4. The district will provide the written determination to the parties simultaneously. The determination regarding responsibility becomes final either on the date that the district provides the parties with the written determination of the result of the appeal, if an appeal is filed, or if an appeal is not filed, the date on which an appeal would no longer be considered timely.
- 5.6.5. The Title IX Coordinator is responsible for effective implementation of any remedies.
- 5.7. **Appeals.** The district will offer both parties the opportunity to appeal from a determination regarding responsibility, and from the district's dismissal of a formal complaint or any allegations therein, on the grounds identified below.
- 5.7.1. **Time for Appeal.** Appeals may only be initiated by submitting a written Notice of Appeal to the Office of the Superintendent of Schools within ten (10) calendar days [of the date of the respective written determination of responsibility or dismissal from which the appeal is taken. The Notice of Appeal must include (a) the name of the party or parties making the appeal, (b) the determination, dismissal, or portion thereof being appealed, and (c) a concise statement of the specific grounds (from subsection 5.7.2 below) upon which the appeal is based. A party's failure to timely submit a Notice of Appeal will be deemed a waiver of the party's right to appeal under this policy, 34 C.F.R. part, 106, and Title IX.
- 5.7.2. **Grounds for Appeal.** Appeals from a determination regarding responsibility, and from the district's dismissal of a formal complaint or any allegations therein, are limited to the following grounds:
- 5.7.2.1. Procedural irregularity that affected the outcome of the matter;
- 5.7.2.2. New evidence that was not reasonably available at the time the determination regarding responsibility or

dismissal was made, that could affect the outcome of the matter; and

5.7.2.3. The Title IX Coordinator, investigator(s), or decision-maker(s) had a conflict of interest or bias for or against complainants or respondents generally or the individual complainant or respondent that affected the outcome of the matter.

5.7.3. As to all appeals, the district will:

5.7.3.1. Notify the other party in writing when an appeal is filed and implement appeal procedures equally for both parties;

5.7.3.2. Ensure that the decision-maker(s) for the appeal is not the same person as the decision-maker(s) that reached the determination regarding responsibility or dismissal, the investigator(s), or the Title IX Coordinator;

5.7.3.3. Ensure that the decision-maker(s) for the appeal complies with the standards set forth in subsections 5.1.3–5.1.4.

5.7.3.4. Give both parties a reasonable, equal opportunity to submit a written statement in support of, or challenging, the outcome;

5.7.3.5. Issue a written decision describing the result of the appeal and the rationale for the result; and

5.7.3.6. Provide the written decision simultaneously to both parties.

5.8. **Informal Resolution.** The district will not require as a condition of enrollment or continuing enrollment, or employment or continuing employment, or enjoyment of any other right, waiver of the right to an investigation and adjudication of formal complaints of sexual harassment consistent with this section. Similarly, the district will not require the parties to participate in an informal resolution process under this section and may not offer an informal resolution process unless a formal complaint is filed. However, at any time prior to reaching a

determination regarding responsibility the district may facilitate an informal resolution process, such as mediation, that does not involve a full investigation and adjudication, provided that the district:

- 5.8.1. Provides to the parties a written notice disclosing:
 - 5.8.1.1. The allegations;
 - 5.8.1.2. The requirements of the informal resolution process including the circumstances under which it precludes the parties from resuming a formal complaint arising from the same allegations;
 - 5.8.1.3. That at any time prior to agreeing to a resolution, any party has the right to withdraw from the informal resolution process and resume the grievance process with respect to the formal complaint; and
 - 5.8.1.4. Any consequences resulting from participating in the informal resolution process, including the records that will be maintained or could be shared;
- 5.8.2. Obtains the parties' voluntary, written consent to the informal resolution process; and
- 5.8.3. Does not offer or facilitate an informal resolution process to resolve allegations that an employee sexually harassed a student.

5.9. Recordkeeping.

- 5.9.1. The district will maintain for a period of seven years records of:
 - 5.9.1.1. Each sexual harassment investigation including any determination regarding responsibility, any disciplinary sanctions imposed on the respondent, and any remedies provided to the complainant designed to restore or preserve equal access to the district's education program or activity;
 - 5.9.1.2. Any appeal and the result therefrom;

- 5.9.1.3. Any informal resolution and the result therefrom;
and
 - 5.9.1.4. All materials used to train Title IX Coordinators, investigators, decision-makers, and any person who facilitates an informal resolution process. The district will make these training materials publicly available on its website, or if the district does not maintain a website then the district will make these materials available upon request for inspection by members of the public.
- 5.9.2. For each response required under section 4, the district will create, and maintain for a period of seven years, records of any actions, including any supportive measures, taken in response to a report or formal complaint of sexual harassment. In each instance, the district will document the basis for its conclusion that its response was not deliberately indifferent, and document that it has taken measures designed to restore or preserve equal access to the district's education program or activity. If the district does not provide a complainant with supportive measures, then the district will document the reasons why such a response was not clearly unreasonable in light of the known circumstances. The documentation of certain bases or measures does not limit the district in the future from providing additional explanations or detailing additional measures taken.

6. **Superintendent Authorized to Contract.** The board authorizes the Superintendent to contract for, designate, and appoint individuals to serve in the roles of the district's investigator(s), decision-maker(s), informal resolution facilitator(s), or appellate decision-maker(s) as contemplated by this policy.

7. **Access to Classes and Schools.**

7.1. **General Standard.** Except as provided in this section or otherwise in 34 C.F.R. part 106, the district will not provide or otherwise carry out any of its education programs or activities separately on the basis of sex, or require or refuse participation therein by any of its students on the basis of sex.

- 7.1.1. **Contact sports in physical education classes.** This section does not prohibit separation of students by sex within physical education classes or activities during participation in wrestling, boxing, rugby, ice hockey, football, basketball, and other sports the purpose or major activity of which involves bodily contact.
- 7.1.2. **Ability grouping in physical education classes.** This section does not prohibit grouping of students in physical education classes and activities by ability as assessed by objective standards of individual performance developed and applied without regard to sex.
- 7.1.3. **Human sexuality classes.** Classes or portions of classes that deal primarily with human sexuality may be conducted in separate sessions for boys and girls.
- 7.1.4. **Choruses.** The district may make requirements based on vocal range or quality that may result in a chorus or choruses of one or predominantly one sex.

7.2. **Classes and Extracurricular Activities.** The district may provide nonvocational single-sex classes or extracurricular activities as permitted by 34 C.F.R. part 106.

8. **Athletics.** It is the policy of the district that no person shall, on the basis of sex, be excluded from participation in, be denied the benefits of, be treated differently from another person or otherwise be discriminated against in any interscholastic, club, or intramural athletics offered by the district, and that the district will not provide any such athletics separately on such basis.

8.1. **Separate Teams.** Notwithstanding the foregoing paragraph, the district may operate or sponsor separate teams for members of each sex where selection for such teams is based upon competitive skill or the activity involved is a contact sport.

8.2. **Equal opportunity.** The district will provide equal athletic opportunity for members of both sexes. Unequal aggregate expenditures for members of each sex or unequal expenditures for male and female teams will not constitute noncompliance with this section.

9. Certain Different Treatment on the Basis of Sex Permitted.

Nothing herein shall be construed to prohibit the district from treating persons differently on the basis of sex as permitted by Title IX or 34 C.F.R. part 106. For example, and without limiting the foregoing, the district may provide separate toilet, locker room, and shower facilities on the basis of sex, but such facilities provided for students of one sex shall be comparable to such facilities provided for students of the other sex.

10. Retaliation Prohibited. Neither the district nor any other person may intimidate, threaten, coerce, or discriminate against any individual for the purpose of interfering with any right or privilege secured by Title IX, 34 C.F.R. part 106, or this policy, or because the individual has made a report or complaint, testified, assisted, or participated or refused to participate in any manner in an investigation, proceeding, or hearing under this policy. The district will keep confidential the identity of any individual who has made a report or complaint of sex discrimination, including any individual who has made a report or filed a formal complaint of sexual harassment, any complainant, any individual who has been reported to be the perpetrator of sex discrimination, any respondent, and any witness, except as may be permitted by the FERPA statute, 20 U.S.C. § 1232g, or FERPA regulations, 34 C.F.R. part 99, or as required by law, or to carry out the purposes of 34 C.F.R. part 106, including the conduct of any investigation, hearing, or judicial proceeding arising thereunder. Complaints alleging retaliation may be filed according to shall be addressed pursuant to Board Policy 2006 (Complaint Procedure).

10.1. Specific Circumstances.

- 10.1.1. The exercise of rights protected under the First Amendment does not constitute retaliation prohibited by this section.
- 10.1.2. Charging an individual with a code of conduct violation for making a materially false statement in bad faith in the course of a grievance proceeding under this part does not constitute retaliation prohibited under this section, provided, however, that a determination regarding responsibility, alone, is not sufficient to conclude that any party made a materially false statement in bad faith.

11. Notification of Policy. The district will notify applicants for admission and employment, students, parents or legal guardians of students, employees, and all unions or professional organizations holding collective bargaining or professional agreements with the district of the existence of this

policy. The requirement to not discriminate, as stated in Title IX and 34 C.F.R. part 106, in the district's education program(s) or activities extends to admission and employment, and inquiries about the application of Title IX and 34 C.F.R. part 106 to the district may be referred to the district's Title IX Coordinator, the Assistant Secretary for Civil Rights of the United States Department of Education, or both.

12. **Publication of Policy.** The district will prominently display on its website, if any, and in each handbook that it makes available to applicants for admission and employment, students, parents or legal guardians of students, employees, and all unions or professional organizations holding collective bargaining or professional agreements with the district, the name or title, office address, electronic mail address, and telephone number of the employee or employees designated as the Title IX Coordinator(s).

13. **Application Outside the United States.** The requirements of this policy apply only to sex discrimination occurring against a person in the United States.

14. **Scope of Policy.** Nothing herein shall be construed to be more demanding or more constraining upon the district than the requirements of Title IX (20 U.S.C. § 1681) and 34 C.F.R. part 106. To the extent that the district is in compliance with Title IX and 34 C.F.R. part 106, then all of the district's obligations under this policy shall be deemed to be fulfilled and discharged.

4056 Resignation of Certificated Staff

Certificated staff members who know they will not be returning to employment at the school district for the following school year are encouraged to submit their resignations as early as possible, to enable the board to find suitable replacements. Unless otherwise required by law or contract, the following resignation requirements apply.

Staff members who submit their resignations to the board of education by the earlier of (a) April 15th or (b) the date designated in a written request of the school board or the administrators to accept employment for the next school year pursuant to section 79-829 (provided that such acceptance date may not be earlier than March 15th of each year) will be released from the next school year's contract. Staff members who refuse to fulfill their contractual

obligations will be reported to the Professional Practices Committee of the Nebraska Department of Education.

Adopted on: _____
Revised on: _____
Reviewed on: _____

**5012
Testing and Assessment Program**

I. Basic Testing and Assessment Program

The school district will use a basic testing and assessment program to evaluate the outcome of the educational program and to provide information needed in working with individuals. The program will be supplemented by such individual and supplementary tests as the needs of the educational program and the district indicate. The superintendent and designees will coordinate the program from Kindergarten through twelfth grade to provide continuity. Teachers are prohibited from engaging in any behavior that adversely affects the validity of test scores as a measure of student achievement. Teachers should consult with relevant board policies and district protocols assessment administration and security.

II. Accountability Reporting

At the board of education's regular July meeting, or as soon after as a report can be completed, the superintendent of schools shall provide an annual written report as required by NDE Rule 10. The report shall be presented to the board and made available to the public. The report must contain the elements required by Rule 10, including but not limited to: student academic performance as reported to NDE (demographics, achievement, educational input characteristics, as defined in section 005.02 of Rule 10); school system demographics; school improvement goals and progress; and financial information about the school district. Building level results will be reported only to appropriate staff for review, goal setting, and intervention as needed.

This report shall not include any individual test scores or assessment, but individual student test scores or assessment results will be reported to the student's parents or legal guardian(s). If the school has fewer than ten

students in the grades being reported, or if reporting would allow for the identification of students because they all had comparable scores, no public reports of student performance are provided for those grades.

A comprehensive evaluation of the district shall be conducted at least once every five years using instruments and guides approved by NDE.

Adopted on: _____

Revised on: _____

Reviewed on: _____

**5045
Student Fees**

The school district shall provide free instruction in accordance with the Nebraska State Constitution and the Nebraska statutes. The district also provides activities, programs, and services that extend beyond the minimum level of constitutionally required free instruction. Under the Public Elementary and Secondary Student Fee Authorization Act, the district is permitted to charge students fees for these activities or to require students to provide specialized equipment and attire for certain purposes. This policy is subject to further interpretation or guidance by administrative or board regulations. Students are encouraged to contact their building administration, their teachers or their coaches, and sponsors for further specifics.

A. Definitions.

1. "Students" means students, their parents, guardians or other legal representatives.
2. "Extracurricular activities" means student activities or organizations that (1) are supervised or administered by the district; (2) do not count toward graduation or advancement between grades; and (3) are not otherwise required by the district.
3. "Post-secondary education costs" means tuition and other fees associated with obtaining credit from a post-secondary educational institution.

B. Listing of Fees Charged by this District.

1. Guidelines for Clothing Required for Specified Courses and Activities.

Students are responsible for complying with the district's grooming and attire guidelines and for furnishing all clothing required for any special programs, courses or activities in which they participate. The teacher, coach, or sponsor of the activity will generally provide students with written guidelines that detail any special clothing requirements and explain why the special clothing is required for the specific program, course or activity.

2. Safety Equipment and Attire.

The district will provide students with all safety equipment and attire that is required by law. Building administrators will assure that (a) such equipment is available in the appropriate classes and areas of the school buildings, (b) teachers are directed to instruct students in the use of such devices, and (c) students use the devices as required. Students are responsible for using the devices safely and as instructed.

3. Personal or Consumable Items.

The district will provide students with personal or consumable items for participation in courses and activities including, but not limited to, pencils, paper, pens, erasers and notebooks. Students who wish to supply their own personal or consumable items may do so, as long as those items comply with the requirements of the district. The district will provide students with facilities, equipment, materials and supplies, including books. Students are responsible for the careful and appropriate use of such property. Students will be charged for damage to school property caused by the student and will be held responsible for the reasonable replacement cost of any school property that they lose.

4. Materials Required for Course Projects.

The district will provide students with the materials necessary to complete all basic curricular projects. In courses where students choose to produce a project that requires materials beyond the basic materials provided by the district, the students will furnish the materials, purchase the materials from the school, or purchase the materials from an outside vendor with an order form provided by the school.

The maximum dollar amount charged by the district for course materials shall be:

- Industrial Technology Classes \$15.00
- Art Classes \$10.00
- Ceramics \$15.00
- High School FCS \$20.00
- Band \$10.00
- Outdoor Education – Middle School \$25.00
- Middle School Honor Choir – if selected \$25.00
- Elementary After School Program \$20.00
- Introduction to STS- Career Safe OSHA 10 certification- \$12.50

- **Welding Class** **\$20.00**

5. Extracurricular Activities.

The district may charge students a fee to participate in extracurricular activities to cover the district's reasonable costs in offering such activities. The district may require students to furnish specialized equipment and clothing that is required for participation in extracurricular activities, or may charge a reasonable fee for the use of district-owned equipment or attire. Attached to this policy is a list of the fees charged for particular activities. The coach or sponsor will provide students with additional written guidelines detailing the fees charged, the equipment and/or clothing required, or the usage fee charged. The guidelines will explain the reasons that fees, equipment and/or clothing are required for the activity.

The following list details the maximum dollar amount of all extracurricular activities fees and the specifications for any equipment or attire required for participation in extracurricular activities:

- Student activity card \$20.00
Covers admission to most regular season athletic events
- Student participation fee \$20.00
Required of all students who participate in athletics and/or other extracurricular activities (Pay only one fee per year)
- Middle School Builders Club \$ 1.00
- Football students must provide their own football shoes, and undergarments
- Golf students must provide their own Golf shoes, undergarments, and clubs
- Softball and Baseball students must provide their own shoes, gloves, and undergarments
- Track, Volleyball, Wrestling, Soccer, Bowling and Basketball , students must provide their own shoes and undergarments
- FFA, FCCLA, FBLA, Key Club, Skills USA Dues

student pay dues of \$20.00 per activity

- Dance and Cheerleading

Students must purchase outfits and shoes selected by the sponsor and/or student group.

6. Post-Secondary Education Costs.

Some students enroll in postsecondary courses while still enrolled in the district's high school. As a general rule, students must pay all costs associated with such post-secondary courses. However, for a course in which students receive high school credit or a course being taken as part of an approved accelerated or differentiated curriculum program, the district shall offer the course without charge for tuition, transportation, books, or other fees. Students who chose to apply for post-secondary education credit for these courses must pay tuition and all other fees associated with obtaining credits from a post-secondary educational institution.

7. Transportation Costs.

The district will charge students reasonable fees for transportation services provided by the district to the extent permitted by federal and state statutes and regulations.

8. Copies of Student Files or Records.

The district will charge a fee for making copies of a student's files or records for the parents or guardians of such student. The Superintendent or the Superintendent's designee shall establish a schedule of student record fees. Parents of students have the right to inspect and review the students' files or records without the payment of a fee, and the district shall not charge a fee to search for or retrieve any student's files or records.

9. Participation in Before-and-After-School or Pre-Kindergarten Services.

The district will charge reasonable fees for participation in pre-kindergarten services offered by the district pursuant to statute.

The maximum dollar amount charged by the district for these services shall be \$3.00 per day.

10. Participation in Summer School or Night School.

The district will charge reasonable fees for participation in summer school or night school and may charge reasonable fees for correspondence courses.

11. Charges for Musical Extracurricular Activities.

Students who qualify for fee waivers under this policy will be provided, at no charge, the use of a musical instrument in optional music courses that are not extracurricular activities. For musical extracurricular activities, the school district will require students to provide the following equipment and/or attire:

- Band Students must provide their own instruments and marching band shoes.
- Show Choir Students must purchase outfits and shoes selected by the sponsor and/or student group.

12. Contributions for Junior and Senior Class Extracurricular Activities.

Students are eligible to participate in a number of unique extracurricular activities during their last two years in high school, including prom, various senior recognitions, and graduation. In order to fund these extracurricular activities, the school district will ask each student to make a contribution to their class's fund. This contribution is completely voluntary. Students who chose not to contribute to the class fund are still eligible to participate in the extra activities. The suggested donation to the class fund will be \$10.00.

C. Waiver Policy.

Students who qualify for free or reduced-price lunches under United States Department of Agriculture child nutrition programs shall be provided a fee waiver or be provided the necessary materials or equipment without charge for (1) participation in extracurricular activities, (2) materials for course projects, and (3) the use of a musical instrument in optional music courses that are not extracurricular activities. Actual participation in the free or reduced-price lunch program is not required to qualify for the waivers provided in this section. The district is not obligated to provide any particular type or quality of equipment or other material to eligible students. Students who wish to be considered for waiver of a particular fee must submit a completed fee waiver application to their building principal.

D. Distribution of Policy.

This policy will be published in the Student Handbook or its equivalent that will be provided to students at no cost.

E. Voluntary Contributions to Defray Costs.

The district will, when appropriate, request donations of money, materials, equipment or attire from parents, guardians and other members of the community to defray the costs of providing certain services and activities to students. These requests are not requirements and staff members of the district are directed to clearly communicate that fact to students, parents and patrons.

F. Student Fee Fund.

The school board hereby establishes a Student Fee Fund. The Student Fee Fund shall be a separate school district fund that will not be funded by tax revenue, and that will serve a depository for all monies collected from students for (1) participation in extracurricular activities, (2) post-secondary education costs, and (3) summer school or night school courses. Monies in the Student Fee Fund shall be expended only for the purposes for which they were collected from students.

G. Student Fee Hearing

Annually the Board of Education of The School District of Seward will hold a public hearing on the student fee policy. Such hearing will include a review of the amount of money collected from students and uses of said fees.

Adopted on: June 9, 2014

Revised on: June 13, 2016, August 13, 2018, August 12, 2019, July 11, 2022

Reviewed on: _____

6021

District Criteria for Selecting Evaluators to be Used for Special Education Evaluation and Verification and Independent Educational Evaluations

The following criteria shall be used for selecting evaluators according to 92 Nebraska Administrative Code 51-006.07B:

1. Those in-state service agencies that have approved rates for the current year established by the Nebraska Department of Education. A list of service agencies with approved rates, including state agencies, individual providers, and in-state providers may be found at <https://www.education.ne.gov/sped/service-agencies/>.
2. Those Nebraska providers located within 100 miles of the building of the district where the child attends when driving by ordinary public roadways, except
3. Evaluations must consider the educational, health, or other student records of the student provided by the district. The parents, guardians, or age-appropriate student must provide any required consent to the disclosure of these records unless disclosure is already authorized by state and federal law.
4. Evaluations must be provided to the district, including all educational, health, student, or other records created as part of or relied upon to complete the evaluation. The parents, guardians, or age-appropriate student must provide any required consent to the disclosure of these records unless disclosure is already authorized by state and federal law.
5. Evaluations must be conducted by a provider that is authorized, available, and willing to discuss, confer, or otherwise cooperate with the district regarding the evaluation, its results, or any other information related to the evaluation. Such cooperation may include reasonable participation in, or the submission of additional reports or information to, an IEP, MDT, or SAT team. **Evaluators must make available to the district any documents or records created in relation to the evaluation, including evaluation and assessment protocols and responses, when the district determines in its sole discretion that such documentation is necessary in order to permit meaningful parental participation.** The parents, guardians, or age-appropriate student must provide any required consent to the disclosure of these records or information unless disclosure is already authorized by state and federal law.
6. Evaluations must be sufficiently comprehensive for the evaluator to submit to the district a report that specifically details whether the student should be considered eligible for special education and related services, the nature of special education and related services recommended to accommodate the student's suspected disability, and the particular facts or findings underlying the evaluator's conclusions. This report must be submitted to the district within 45 days after the conclusion of the evaluation.
7. Evaluations must meet the then-current state standards for reliability, research-based processes, and educational or professional best practices.
8. Reimbursement to any evaluator chosen in conformance with this policy shall not exceed the cost that would be charged by the school district's contracted providers for the same or substantially similar evaluation.
9. All special education evaluations, including those independently obtained at the district's expense, must be obtained in a manner consistent with the criteria set forth above, unless state or federal law requires waiver of one or more criteria in order to accommodate unique circumstances.

Adopted on: _____
Revised on: _____
Reviewed on: _____

6037
Selection and Review of Library Media

The board approves curriculum and curriculum-related materials for the district with input from administrators and staff. Those processes are covered in other board policies. Staff members seeking to procure materials for use during instruction must follow board policy, practices, and directives. Those items are not covered by this policy.

The district procures library books and other media available to students that are not part of a specific class or curriculum. For purposes of this policy, those will be called library materials. This policy addresses the selection and review of library materials, regardless of their source. This policy applies regardless of whether library materials are purchased using district funds, donated, or shared at no cost to the district.

No Right to Materials. The board supports having excellent educational opportunities for students, including availability of library materials used to enrich the educational experience. However, the board and administration are responsible for considering materials based on a variety of factors and legal obligations. There is no right to force any material to be included or excluded. Staff requesting library materials do so only within the course and scope of their employment with the district.

Selection Process. The selection and approval of new library materials must comply with the district's general requisition, donation, and budgeting requirements. To ensure materials selected are appropriate for the district's students and consistent with the district's legal obligations, the following process applies to selection of library materials.

[OPTION 1: PRINCIPAL OR SUPERINTENDENT REVIEW] The school librarian, media specialist, or any individual requesting library materials is responsible for submitting the request in writing to the building principal or to superintendent if there is no principal assigned to the building. The request must include the following

1. Name of the book, material, or resource;
2. The author, publisher, and supplier of the material;
3. The physical medium (*i.e.*, book, magazine, video, game, digital subscription, etc.);
4. The cost of the material;
5. A summary of the content of the material, including how it supports age-appropriate learning objectives, enriches the curriculum, and/or supports student development and learning;
6. The material's accolades, such as presence on best seller lists, awards won, and recommendations from professional library journals and organizations with a focus on K-12 school library materials; and

7. Whether any of the content in the material represents a perspective that may not be universal, such as a political, religious, or social perspective for which disagreement or differences of opinion exist. The summary should include a description of these items.

The building principal or superintendent will review the library material request and inform the requester whether the material will be accepted or denied. Materials which require expenditure of district funds will be processed consistently with the district's purchasing and procurement policies and practices. There is no appeal from this determination.

[OPTION 2: COMMITTEE REVIEW] The superintendent will establish a library material review committee on an as-needed basis, consisting of at least one administrator, one teacher, and the librarian or media specialist and one parent. If the district has no assigned librarian or media specialist, then the committee will include two administrators and a teacher. The superintendent may appoint any teacher he or she deems appropriate based on availability and expertise related to the requested materials.

The school librarian, media specialist, or any individual requesting inclusion of library materials is responsible for submitting the request in writing to the library material review committee. The request must include the following

1. Name of the book, material, or resource;
2. The author, publisher, and supplier of the material;
3. The physical medium (*i.e.*, book, magazine, video, game, digital subscription, etc.);
4. The cost of the material;
5. A summary of the content of the material, including how it supports age-appropriate learning objectives, enriches the curriculum, and/o supports student development and learning;
6. The material's accolades, such as presence on best seller lists, awards won, and recommendations from professional library journals and organizations with a focus on K-12 school library materials; and
7. Whether any of the content in the material represents a perspective that may not be universal, such as a political, religious, or social perspective for which disagreement or differences of opinion exist. The summary should include a description of these items.

The committee will review the requested materials within the timeframe established by the superintendent. In the event the committee does not agree on a particular request, the administrator makes the final determination. There is no appeal from this determination.

[OPTION 3: BOARD COMMITTEE REVIEW—DISCOURAGED, BUT LAWFUL]. The school librarian, media specialist, or any individual requesting library materials is responsible for submitting the request in writing to the superintendent. The superintendent will review the request(s) with the curriculum committee of the board, who will make a recommendation to the

board for approval or denial of the request.

The request must include the following:

1. Name of the book, material, or resource;
2. The author, publisher, and supplier of the material;
3. The physical medium (*i.e.*, book, magazine, video, game, digital subscription, etc.);
4. The cost of the material;
5. A summary of the content of the material, including how it supports age-appropriate learning objectives, enriches the curriculum, and/o supports student development and learning;
6. The material's accolades, such as presence on best seller lists, awards won, and recommendations from professional library journals and organizations with a focus on K-12 school library materials; and
7. Whether any of the content in the material represents a perspective that may not be universal, such as a political, religious, or social perspective for which disagreement or differences of opinion exist. The summary should include a description of these items.

There is no appeal from the determination of the board.

Requested Review of Library Materials. A concerned parent of a current student or patron living within the school district boundaries may request the review of a specific library material (*i.e.*, a specific book, magazine, etc.) or portion of a specific library material. The parent or patron must first discuss their concern with the building principal and explain their concern regarding the library material. If there is no principal assigned to that building, the parent or patron should discuss their concern with the superintendent. The board believes most concerns will be resolved in this manner.

[OPTION 1: SUPERINTENDENT REVIEW] If the parent or patron is dissatisfied after the informal review and discussion with the relevant administrator, they may request a review in writing. To request a review, the individual must complete the Library Material Review Request form and submit it to the superintendent.

The superintendent will review the request within a reasonable time after receiving it. The superintendent may consult with the school's librarian or media specialist, staff, and legal counsel at his or her discretion. The superintendent may decide to remove the material, keep the material, restrict access to the material to students based on age or grade level, or make any other determination the superintendent deems appropriate. The superintendent's decision regarding the review will be communicated to the requester in writing.

The decision of the superintendent is final, and the board will not hear any appeal regarding the review of library material.

[OPTION 2: BOARD COMMITTEE REVIEW] If the parent or patron is unsatisfied after the informal review and discussion with the relevant administrator, they may request a review in

writing. To request a review, the individual must complete the Library Material Review Request form and submit it to the superintendent.

The superintendent will review the request with the board curriculum committee within a reasonable time after receiving it. The committee may consult with or seek input from the school's librarian or media specialist, staff, and legal counsel at its discretion. The committee will make a recommendation to the board to remove the material, keep the material, restrict access to the material to students based on age or grade level, or make any other determination or recommendation the committee deems appropriate. The board will review the request, consider the committee's recommendation, and make a determination regarding the requested review. The decision regarding the review will be communicated to the requester in writing by the superintendent.

The decision of the board is final, and there is no appeal regarding the review of library material.

Additional Rules for Library Media Review. Unless the superintendent decides otherwise, the library material will remain in circulation while a review is pending. Unless otherwise required by law, no library material will be reviewed again within 4 years after a requested review is completed. Any parent or patron requesting review of multiple library materials may only request a maximum of 5 materials to be reviewed at one time, and a new request cannot be submitted until the prior review is completed and notice of the determination is provided to the requesting party. Nothing in this policy prohibits the superintendent or their designee from reviewing library material outside of the review process contained in this policy and taking any action the superintendent or their designee deems appropriate.

Adopted on: _____
Revised on: _____
Reviewed on: _____

Library Material Review Request Form

Only a patron of the district or parent of a current student may request review of a library material. Prior to submitting a request, please review the board's policy on Selection and Review of Library Materials. The policy is located on the district's website, or you can request a copy via email from the superintendent.

Name: _____ **Phone:** _____

Address: _____

Written requests to review library materials will not be considered unless the requester identifies the specific material in question and first discusses their concern with the appropriate administrator as required by board policy. Please list the date of the conversation with the administrator: _____

Title of Material: _____

Author/Publisher: _____

Type of Material (book, magazine, video, etc.): _____

Reason for Requesting Review (attach additional page if necessary):

Please list the specific portion of the material you find objectionable, including specific page references, sections, volumes, etc.:

Signature: _____

For District Use Only
Date Received: _____
Received By: _____
Reviewed on: _____
Date Determination Sent to Requester: _____

[DISTRICT LETTERHEAD]

[DATE]

[NAME OF REQUESTER]
[ADDRESS]
[EMAIL ADDRESS (if sent electronically)]

Dear [NAME OF REQUESTER],

On [DATE], the district received your request to review [INSERT REQUESTED

MATERIAL]. After considering your concerns and reviewing the material, we have made the following determination.

[EXPLAIN DETERMINATION: Remain in circulation; removed from circulation; remain in circulation with restrictions (only accessible by students of a certain age, grade, etc.)].

[OPTIONAL: INCLUDE RATIONALE. For requests based on sensitive topics like religion, sex, gender, etc., we recommend receiving legal advice.]

There is no appeal from this review. The district does not place restrictions on students who can access library materials on an individual basis. Some materials are limited generally based on age, grade level, and expected student ability. If you do not want your student to access any particular material, please discuss that with your student and set that expectation as the parent or guardian. If your student has checked out a book or material you do not approve, I am happy to work with you and your student's teacher to return that material and check out something else.

Sincerely,

[NAME],
Superintendent

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/Activity
	Forces and Interactions: Pushes and Pulls.	The students will gather, analyze, and communicate evidence of forces and their interactions.	McGraw Hill Inspire Science Unit 4		
Pushes and Pulls	SC.K.1.1 Gather, analyze, and communicate evidence of forces and their interactions.	The students will gather, analyze, and communicate evidence of forces and their interactions.	Unit 4 all lessons		End of unit STEM project p. 45-46
	SC.K.1.1.A Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.	The students will gather, analyze, and communicate evidence of forces and their interactions.	Unit 4, Lesson 1 & 2	distance, force, motion, push, pull, position	Lesson 1: p. 7-18, inquiry activities informal assessment Lesson 2: p. 19-30, inquiry activities informal assessment End of unit STEM project p. 45-46
	SC.K.1.1.B Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or pull.	The students will gather, analyze, and communicate evidence of forces and their interactions.	Unit 4, Lesson 2 & 3	speed, direction, collide, object	Lesson 2: p. 19-30, inquiry activities informal assessment Lesson 3: p. 31-44, inquiry activities informal assessment End of unit STEM project p. 45-46
Animals, Plants and Their Environment	SC.K.7 Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment	The students will gather, analyze, and communicate evidence of ecosystems.	McGraw Hill Inspire Science Unit 1 & Unit 2	Ecosystem, Environment, Animal, Plant, Habitat, Living, Non-living, Survive, Water	
	SC.K.7.2 Gather, analyze and communicate evidence of interdependent relationships in ecosystems.	The students will gather, analyze, and communicate evidence of ecosystems.	Unit 1, all lessons		Unit 1 End of unit STEM project p. 55-56
	SC.K.7.2.A Use observations to describe patterns of what plants and animals (including humans) need to survive.	The students will gather, analyze, and communicate evidence of ecosystems.	Unit 1, Lesson 2, 3 & 4	animal, ecosystem, habitat, plan, water, survive	Unit 1, Lesson 2: p. 20-30, inquiry activities informal assessment Unit 1, Lesson 3: p. 32-40, inquiry activities informal assessment Unit 1, Lesson 4: p. 42-54, inquiry activities informal assessment Unit 1, End of unit STEM project p. 55-56
	SC.K.7.2.B Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.	The students will gather, analyze, and communicate evidence of ecosystems.	Unit 2, all lessons	burrow, dam, environment, farm, garden, human, shelter, sunlight, food, soil	Unit 2, Lesson 1: p. 8-18, inquiry activities informal assessment Unit 2, Lesson 2: p. 19-32, inquiry activities informal assessment Unit 2, Lesson 3: p. 33-48, inquiry activities informal assessment Unit 2, End of unit STEM project p. 49-50
	SC.K.7.2.C Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.	The students will gather, analyze, and communicate evidence of ecosystems.	Unit 1 & Unit 2		Unit 1, End of unit STEM project, p. 45-46 Unit 2, End of unit STEM project, p. 49-50
	SC.K.7.2.D Communicate solutions that will increase the positive impact of humans on the land, water, air, and /or other living things in the local environment.	The students will gather, analyze, and communicate evidence of ecosystems.	Module: Protect Earth	natural resources, recycle, reduce, reuse, cause, effect, pattern, solution	Module, Lesson 1: p. 57-68, inquiry activities informal assessment Module, Lesson 2: p. 69-82, inquiry activities informal assessment Module, End of module project, p. 83-84
		SC.K.12 Weather and Climate	The students will gather, analyze, and communicate evidence of weather and climate.	McGraw Hill Inspire Science Unit 3	

Weather and Climate	SC.K.12.3 Gather, analyze and communicate evidence of weather and climate.	The students will gather, analyze, and communicate evidence of weather and climate.	Unit 3 all lessons/modules	data, observation	
	SC.K.12.3.A Use and share observations of local weather conditions to describe patterns over time.	The students will gather, analyze, and communicate evidence of weather and climate.	Unit 3, Lesson 1 Unit 3, Lesson 2	clouds, cool, rain, snow, temperature, thermometer, warm, weather, wind season, fall, spring, summer, winter, cumulus, cirrus, stratus	Lesson 1: inquiry activities informal assessment p. 10-17 Lesson 2: inquiry activities informal assessment p. 25-31
	SC.K.12.3.B Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather	The students will gather, analyze, and communicate evidence of weather and climate.	Unit 3, Lesson 3 Unit 3, Lesson 4	forecast, predict, meteorologist blizzard, drought, hurricane, thunderstorm, tornado	Lesson 3: inquiry activities informal assessment p. 36-41 Lesson 4: inquiry activities informal assessment p. 48-59
	SC.K.12.3.C Make observations to determine the effect of sunlight on Earth's surface.	The students will gather, analyze, and communicate evidence of weather and climate.	Unit 3, Lesson 2 Module: Sun & Earth	thermometer, warm, cool, season Earth, sun, shade, protect, shelter	Lesson 2: inquiry activity informal assessment p. 22-23 Module: inquiry activities informal assessment p.72-91
	SC.K.12.3.D Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.	The students will gather, analyze, and communicate evidence of weather and climate.	Module: Sun & Earth		End of unit STEM Project p. 95
	SC.K.12.3.E Ask questions, make observations and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	The students will gather, analyze, and communicate evidence of weather and climate.	Unit 3, all lessons/modules		End of unit STEM Project p. 95

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/Activity
Waves: Light and Sound	SC.1.2 Waves: Light and Sound	The students will gather, analyze, and communicate evidence of light and sound waves.	McGraw Hill Inspire Science Grade 1 Unit 3	Waves, Light, Sound, Vibrate, Illuminate, Shadows, Material, Mirror, Cause, Effect	Student will revisit the Module phenomenon and explain their learning.
	SC.1.2.1 Gather, analyze, and communicate evidence of light and sound waves.	The students will gather, analyze, and communicate evidence of light and sound waves.	Unit 4 All Lessons	Cause, Effect	
	SC.1.2.1.A Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.	The students will gather, analyze, and communicate evidence of light and sound waves.	Supplement (Book-Sounds All Around)	Sound, Waves, Vibrate	Rubberband Vibrations, Handbells Inquiry-Why do the handbells make different sounds?
	SC.1.2.1.B Make observations to construct an evidence-based account that objects can be seen only when illuminated.	The students will gather, analyze, and communicate evidence of light and sound waves.	Unit 4 Lesson 1	Illuminate, Light	Lesson 1: Light Inquiry Activity pages 16-17, Lesson 1 Review Explain the Phenomenon pages 18-19
	SC.1.2.1.C Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.	The students will gather, analyze, and communicate evidence of light and sound waves.	Unit 4 Lesson 2	Material, Opaque, Shadow, Translucent, Transparent	Lesson 2: Light and Materials Inquiry Activity pages 32-33, Lesson 2 Review Explain the Phenomenon pages 34-35
	SC.1.2.1.D Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.	The students will gather, analyze, and communicate evidence of light and sound waves.	Unit 4 Lesson 3	Mirror, Reflect	Lesson 3: Light Uses Inquiry Activity pages 52-53, Lesson 3 Review Explain the Phenomenon pages 54-55. STEM Module Project: Design a Light Message

Structure, Function and Information Processing	SC.1.6 Structure, Function, and Information Processing	The students will gather, analyze, and communicate evidence to show the relationship between structure and function in living things.	McGraw Hill Inspire Science Grade 1 Unit 2 and Unit 1	Survive, Grow, Needs, Structure, Function, Offspring, Parents, Mimicking, External, Trait, Behavior, Learn, Signal, Amphibian, Bird, Fish, Insect, Mammal, Reptile, Protection, Flower, Fruit, Leaf, Root, Seed, Stem, Inherit, Seedling, Pollen	Students will revisit the Module phenomenon and explain their learning.
	SC.1.6.2 Gather, analyze, and communicate evidence to show the relationship between structure and function in living things.	The students will gather, analyze, and communicate evidence to show the relationship between structure and function in living things.	Unit 2 All Lessons Unit 1 All Lessons	Survive, Grow, Needs	STEM Module Project Plant Structures and Functions Students will use what they have learned throughout this module to design and build a model of a solar-powered light stand. They will explain how their light stand is similar to a plant's structure and function. STEM Module Project Plant Parents and Their Offspring Students will use what they have learned throughout the module to design a seed that can travel. They will build and test a model seed.
	SC.1.6.2.A Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.	The students will gather, analyze, and communicate evidence to show the relationship between structure and function in living things.	Unit 2 Lesson 2 Unit 1 Lesson 1	Protection, Mimicking, External, Structure	Lesson 2: Functions of Animal Structures Inquiry Activity pages 30-31, Lesson 2 Review Explain the Phenomenon pages 32-33 STEM Module Project: Design Protective Gear for a Sport. Students will design protective sports gear based on what they have learned about animals. Lesson 1: Plant Parts Inquiry Activity pages 22-23, Lesson 1 Review Explain the Phenomenon pages 24-25

	<p>SC.1.6.2.B Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p>	<p>The students will gather, analyze, and communicate evidence to show the relationship between structure and function in living things.</p>	<p>Unit 2 Lesson 1 Unit 1 Lesson 2</p>	<p>Amphibian, Bird, Fish, Insect, Mammal, Reptile, Flower, Fruit, Function, Leaf, Root, Seed, Stem</p>	<p>Lesson 1: Animal Structures Activity pages 16-17, Lesson 1 Review Explain the Phenomenon pages 18-19 Lesson 2: Functions of Plant Parts Inquiry Activity pages 38-39, Lesson 2 Review Explain the Phenomenon pages 40-41</p>
	<p>SC.1.6.2.C Read texts and use media to determine patterns in a behavior of parents and offspring survive.</p>	<p>The students will gather, analyze, and communicate evidence to show the relationship between structure and function in living things.</p>	<p>Unit 2 Lesson 4 Unit 1 Lesson 2 Section 2</p>	<p>Behavior, Learn, Signal, Offspring, Parents, Need, Pollen, Survive</p>	<p>Lesson 4: Animal Behaviors Inquiry Activity pages 64-65, Lesson 4 Review Explain the Phenomenon pages 66-67 Lesson 2: Plant Survival Inquiry Activity pages 82-83, Lesson 2 Review Explain the Phenomenon pages 84-85</p>
	<p>SC.1.6.2.D Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.</p>	<p>The students will gather, analyze, and communicate evidence to show the relationship between structure and function in living things.</p>	<p>Unit 2 Lesson 3 Unit 1 Lesson 1 Section 2</p>	<p>Trait, Offspring, Parents, Inherit, Seedling</p>	<p>Lesson 3: Animals and Their Parents Inquiry Activity pages 46-47, Lesson 3 Review Explain the Phenomenon pages 48-49 Lesson 1: Plants and Their Parents Inquiry Activity pages 64-65, Lesson 1 Review Explain the Phenomenon pages 66-67</p>
	<p>SC.1.11 Space Systems: Patterns and Cycles</p>	<p>The students will gather, analyze, and communicate evidence of patterns and cycles of space systems.</p>	<p>McGraw Hill Inspire Science Grade 1 Unit 4</p>	<p>Patterns, Cycles, Systems, Sun, Moon, Daylight, Earth, Planet, Star, Horizon, Moon Phases, Sunrise, Sunset, Season, Spring, Fall, Summer, Winter</p>	<p>Students will revisit the Module phenomenon and explain their learning.</p>

Space Systems: Patterns and Cycles	<p>SC.1.11.3 Gather, analyze, and communicate evidence of patterns and cycles of space systems.</p>	<p>The students will gather, analyze, and communicate evidence of patterns and cycles of space systems.</p>	<p>Unit 4 All Lessons</p>	<p>Patterns, Cycles, Systems</p>	<p>STEM Module Project Observe the Sky Students will use what they have learned throughout the module to record data and describe patterns they observe about the seasonal changes over three months.</p>
	<p>SC.1.11.3.A Use observations of the sun, moon, and stars to describe patterns that can be predicted.</p>	<p>The students will gather, analyze, and communicate evidence of patterns and cycles of space systems.</p>	<p>Unit 4 Lesson 1</p>	<p>Earth, Moon, Planet, Star, Sun</p>	<p>Lesson 1: Objects in the Sky Inquiry Activity pages 18-19, Lesson 1 Review Explain the Phenomenon pages 22-23</p>
	<p>SC.1.11.3.B Make observations at different time of the year to relate the amount of daylight to the time of year.</p>	<p>The students will gather, analyze, and communicate evidence of patterns and cycles of space systems.</p>	<p>Unit 4 Lesson 2 Unit 4 Lesson 3</p>	<p>Horizon, Moon Phases, Sunrise, Sunset, Fall, Season, Spring, Summer, Winter, Daylight</p>	<p>Lesson 2: Day and Night Patterns Inquiry Activity pages 34-35, Lesson 2 Review Explain the Phenomenon pages 36-37 Lesson 3: Patterns During the Year Inquiry Activity pages 50-51, Lesson 3 Review Explain the Phenomenon pages 52-53</p>

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/Activity
Structure and Properties of Matter	SC.2.3 Structure and Properties of Matter	The students will gather, analyze, and communicate evidence of the structure, properties, and interactions of matter.	McGraw Hill Inspire Science Unit 2	gas, matter, material, surface	
	SC.2.3.1 Gather, analyze, and communicate evidence of the structure, properties, and interactions of matter.	The students will gather, analyze, and communicate evidence of the structure, properties, and interactions of matter.	McGraw Hill Inspire Science Unit 2		Unit 2: all Modules, STEM Module Projects
	SC.2.3.1.A Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.	The students will gather, analyze, and communicate evidence of the structure, properties, and interactions of matter.	McGraw Hill Inspire Science Unit 2	absorb, liquid, property, solid, texture	Unit 2: Module - Describe Materials/lesson 1 pgs 5 - 26, STEM Module Project
	SC.2.3.1.B Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.	The students will gather, analyze, and communicate evidence of the structure, properties, and interactions of matter.	McGraw Hill Inspire Science Unit 2	flexible, strong	Unit 2: Module - Describe Materials/lesson 2 pgs 27 - 48, STEM Module Project
	SC.2.3.1.C Analyze data from tests to two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	The students will gather, analyze, and communicate evidence of the structure, properties, and interactions of matter.	McGraw Hill Inspire Science Unit 2		Unit 2: Module - Changes to Materials Lesson 1 & 2, STEM Module Projects
	SC.2.3.1.D Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.	The students will gather, analyze, and communicate evidence of the structure, properties, and interactions of matter.	McGraw Hill Inspire Science Unit 2	assemble, disassemble	Unit 2: Module - Changes to Materials/lesson 1 pgs 59 - 76, STEM Module Project
	SC.2.3.1.E Construct and argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.	The students will gather, analyze, and communicate evidence of the structure, properties, and interactions of matter.	McGraw Hill Inspire Science Unit 2	cool, heat, reversible, temperature	Unit 2: Module - Changes to Materials/lesson 2 pgs 77 - 96
Interdependent Relationships in Ecosystems	SC.2.7 Interdependent Relationships in Ecosystems	The students will gather, analyze, and communicate evidence of interdependent relationships in ecosystems.	McGraw Hill Inspire Science Unit 4	photosynthesis, ecosystem	
	SC.2.7.2 Gather, analyze, and communicate evidence of interdependent relationships in ecosystems.	The students will gather, analyze, and communicate evidence of interdependent relationships in ecosystems.	McGraw Hill Inspire Science Unit 4		Unit 4: all Modules, STEM Module Projects
	SC.2.7.2.A Plan and conduct an investigation to determine if plants need sunlight and water to grow.	The students will gather, analyze, and communicate evidence of interdependent relationships in ecosystems.	McGraw Hill Inspire Science Unit 4	leaf, mineral, nutrient, root, stem	Unit 4: Module - Plants in Landscapes lesson 1 pgs 5 - 26
	SC.2.7.2.B Develop a simple model that mimics the function of an animal dispersing seeds or pollinating plants.	The students will gather, analyze, and communicate evidence of interdependent relationships in ecosystems.	McGraw Hill Inspire Science Unit 4	dispersal, flower, pollen, pollination, seed	Unit 4: Module - Plants in Landscapes lesson 2 pgs 27 - 46, STEM Project

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/Activity
	SC.2.7.2.C Make observations of plants and animals to compare the diversity of life in different habitats.	The students will gather, analyze, and communicate evidence of interdependent relationships in ecosystems.	McGraw Hill Inspire Science Unit 4	habitat, shelter, survive, Arctic, desert, forest, grassland, fresh water, salt water, pond, river, ocean	Unit 4: Module - Living Things in Habitats lesson 1 pgs 57 - 72, Unit 4: Module - Living Things in Habitats lesson 2 pgs 73 - 90, Unit 4: Module - Living Things in Habitats lesson 3 pgs 91 - 112, STEM Project
Earth's Systems: Processes That Shape the Earth	SC.2.13 Earth's Systems: Processes That Shape the Earth	The students will gather, analyze, and communicate evidence of the processes that shape the earth.	McGraw Hill Inspire Science Unit 1 & 3	plains, plateau, terracing, erosion, bay, coast, tributary	
	SC.2.12.3 Gather, analyze and communicate evidence of the processes that shape the earth.	The students will gather, analyze, and communicate evidence of the processes that shape the earth.	McGraw Hill Inspire Science Unit 1 & 3	compass rose, landscape, map, slope, symbol	Unit 1: Module - Earth's Landscape lesson 1 pgs 5 - 22, lesson 2 pgs 23 - 40, lesson 3 pgs 41 - 58, STEM Project
	SC.2.13.3.A Use information from several sources to provide evidence that Earth events can occur quickly or slowly.	The students will gather, analyze, and communicate evidence of the processes that shape the earth.	McGraw Hill Inspire Science Unit 1 & 3	erosion, weathering, earthquake, erupt, flood, landslide, volcano	Unit 3: Module - Landscape Changes lesson 1 pgs 5 - 28, Unit 3: Module - Landscape Changes lesson 2 pgs 29 - 50, STEM Project
	SC.2.13.3.B Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.	The students will gather, analyze, and communicate evidence of the processes that shape the earth.	McGraw Hill Inspire Science Unit 1 & 3	natural resource, prevent, solution	Unit 3: Module - Landscape Changes lesson 3 pgs 51 - 66
	SC.2.12.3.C Develop a model to represent the shapes and kinds of land and bodies of water in the area.	The students will gather, analyze, and communicate evidence of the processes that shape the earth.	McGraw Hill Inspire Science Unit 1 & 3	canyon, continent, island, landform, mountain, plain, valley	Unit 1: Module - Earth's Landscape lesson 2 pgs 23 - 40, STEM Project
	SC.2.13.3.D Obtain information to identify where water is found on Earth and that it can be solid or liquid.	The students will gather, analyze, and communicate evidence of the processes that shape the earth.	McGraw Hill Inspire Science Unit 1 & 3	glacier, lake, ocean, pond, river, stream	Unit 1: Module - Earth's Landscape lesson 3 pgs 41-58

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/Activity
Forces and Interactions: Motion and Stability	SC.3.1 Forces and Interactions: Motion and Stability	The students will gather, analyze and communicate evidence of forces and their interactions.	Unit 1	balanced forces, force, friction, unbalanced forces, direction, distance, motion, position, speed, attract, electrical charge, repel, static electricity, magnet, magnetic field, magnetism, pole	
	SC.3.1.1 Gather, analyze, and communicate evidence of forces and their interactions	The students will gather, analyze and communicate evidence of forces and their interactions.	Unit 1--All Lessons		
	SC.3.1.1.A Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object	The students will gather, analyze and communicate evidence of forces and their interactions.	Unit 1 Module 1 Lesson 2	balanced forces, force, friction, unbalanced forces	Pre-Test Lesson 2 Launch pg 21; Encounter the Phenomenon pg 23; Inquiry Activity--Force Affect the way objects move-pg 24-25; Make a Claim pg 27; Inquiry Activity-On The Move- pg 36-37; Post Assessment Lesson 2 Review pg 38-39
	SC.3.1.1.B Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.	The students will gather, analyze and communicate evidence of forces and their interactions.	Unit 1 Module 1 Lesson 1	direction, distance, motion, position, speed	Pre Assessment Lesson 1 Launch pg 5; Encounter the Phenomenon pg 7; Inquiry Activity-Moving Marbles pg 8-9; Inquiry Activity-Movement of a windup toy pg 16-17; Post Assessment Lesson 1 Review pg 18-19
	SC.3.1.1.C Ask questions to determine cause and effect relationships or electrical or magnetic interactions between two objects not in contact with each other.	The students will gather, analyze and communicate evidence of forces and their interactions.	Unit 1 Module 2 Lesson 1	attract, electrical charge, repel, static electricity	Pre-Test Lesson 1 Launch pg 49; Encounter the Phenomenon pg 51; Inquiry Activity-Static Charge pg 52-54; Make a Claim pg 55; Inquiry Activity-Eliminate Static Electricity pg 63; Post Assessment Lesson 1 Review pg 64-65

	<p>SC.3.1.1.D Define a simple design problem that can be solved by applying scientific ideas about magnets.</p>	<p>The students will gather, analyze and communicate evidence of forces and their interactions.</p>	<p>Unit 1 Module 2 Lesson 2</p>	<p>magnet, magnetic field, magnetism, pole</p>	<p>Pre-Test Lesson 2 Launch pg 67; Encounter the Phenomenon pg 69; Inquiry Activity-Magnet Investigation pg 70-71; Inquiry Activity-Magnetic Forces Pass Through Objects pg 74; Using Magnets pg 78-79; Post Assessment Lesson 2 Review pg 82-83</p>
	<p>SC.3.7 Interdependent Relationships in Ecosystems</p>	<p>The students will gather and analyze data to communicate an understanding of the interdependent relationships in ecosystems.</p>		<p>competition, ecosystem, resource, adaptation, behavior, camouflage, hibernation, migrate, mimicry, extinction, fossils, invasive species</p>	
	<p>SC.3.7.2 Gather and analyze data to communicate an understanding of the interdependent relations in ecosystems.</p>	<p>The students will gather and analyze data to communicate an understanding of the interdependent relationships in ecosystems.</p>	<p>Unit 3--all lessons</p>		
	<p>SC.3.7.2.A Construct an argument that some animals form groups that help members survive.</p>	<p>The students will gather and analyze data to communicate an understanding of the interdependent relationships in ecosystems.</p>	<p>Unit 3 Module 1 Lesson 1</p>	<p>competition, ecosystem, resource</p>	<p>Pre-Assessment Lesson 1 Launch pg 5; Encounter the Phenomenon pg 7; Inquiry Activity-Plant Hunt pg 8-9; Inquiry Activity-Needs of Plant pg 11; Post Assessment Lesson 1 Review pg 20-21</p>

Interdependent Relationships in Ecosystems	SC.3.7.2.B Analyze and interpret data from fossils to provide evidence of the organisms and environments in which they lived long ago.	The students will gather and analyze data to communicate an understanding of the interdependent relationships in ecosystems.	Unit 3 Module 2 Lesson 1	extinction, fossils	Pre-Assessment Lesson 1 Launch pg. 51; Encounter the Phenomenon pg 53; Inquiry Activity-Layers and Fossils part 1 pg 54-55; Continued Inquiry on page 59; Inquiry Activity-Fossil Dig pg 61 (whole group stimulation); Inquiry Activity-Fossil Mystery pg 64-65; Post Assessment Lesson 1 Review pg 66-67
	SC.3.7.2.C Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	The students will gather and analyze data to communicate an understanding of the interdependent relationships in ecosystems.	Unit 3 Module 1 Lesson 2	adaptation, behavior, camouflage, hibernation, migrate, mimicry	Pre-Assessment Lesson 2 Launch pg 23; Encounter the Phenomenon pg 25; Inquiry Activity-Bird Beak Shapes-pg 26-29; Inquiry Activity-Camouflaged Beans pg 31; Inquiry Activity-Design a Bird pg 38-39; Post Assessment Lesson 2 Review pg 40-41
	SC.3.7.2.D Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.	The students will gather and analyze data to communicate an understanding of the interdependent relationships in ecosystems.	Unit 3 Module 2 Lesson 2	invasive species	Pre-Assessment Lesson 2 Launch pg 69; Encounter the Phenomenon pg 71; Inquiry Activity-Changes by Humans pg 72; Post Assessment Lesson 2 Review pg 82-83
	SC.3.7.2.E Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	The students will gather and analyze data to communicate an understanding of the interdependent relationships in ecosystems.	Unit 3 Module 2 Lesson 2 Inquiry Activity	invasive species	Inquiry Activity-Solve for Invasive Species-pg 81

Inheritance and Variation: Life Cycles and Traits	SC.3.9 Inheritance and Variation: Life Cycles and Traits	The students will gather and analyze data to communicate an understanding of inheritance and variation of traits through life cycles and environmental influences.		Inheritance, Variation, Life Cycle, Trait, Species	**Will be covered when we do embryology--chicks
	SC.3.9.3 Gather and analyze data to communicate an understanding of inheritance and variation of traits through life cycles and environmental influences.	The students will gather and analyze data to communicate an understanding of inheritance and variation of traits through life cycles and environmental influences.	Unit 2 Module 2 Lesson 2	environmental trait, instinct, learned trait	Pre-Assessment Lesson 2 Launch pg 63; Encounter the Phenomenon pg 65; Inquiry Activity-Inherited Traits-pg 66-67; Inquiry Activity-Traits and Survival-pg 75; Post Assessment-Lesson 2 Review pg 76-77
	SC.3.9.3.A Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.	The students will gather and analyze data to communicate an understanding of inheritance and variation of traits through life cycles and environmental influences.	Unit 2 Module 1 Lesson 1/ Unit 2 Module 2 Lesson 1	germinate, life cycle, pollination, reproduce, birth, metamorphosis	Pre-Assessment-Lesson 1 Launch pg 5; Encounter the Phenomenon pg 7; Inquiry Activity-pg 8-9; Seed Growth Activity-pg 14; Inquiry Activity pg 17; Lesson 1 Review Assessment pg 18-19; Pre-Assessment-Lesson 1 Launch pg 47 ; Encounter the Phenomenon pg 49 ; Inquiry Activity-Grow a Caterpillar pg 50-51 ; Video-Strange Animal Life Cycles ; Inquiry-Animal Life Cycle Research-pg 59 ; Lesson Review Assessment pg 61
	SC.3.9.3.B Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.	The students will gather and analyze data to communicate an understanding of inheritance and variation of traits through life cycles and environmental influences.	Unit 2 Module 1 Lesson 2	inherited trait, trait, variation	Pre-Assessment Lesson 2 Launch pg 21; Encounter the Phenomenon pg 23; Inquiry Activity-Plant Families pg 24; Inquiry Activity-Parent Plants pg. 28; Lesson 2 Review Assessment pg 34-35

	<p>SC.3.9.3.C Use evidence to support the explanation that traits can be influenced by the environment.</p>	<p>The students will gather and analyze data to communicate an understanding of inheritance and variation of traits through life cycles and environmental influences.</p>	<p>Unit 2 Module 2 Lesson 3</p>	<p>group, population, survival</p>	<p>Pre-Assessment Lesson 3 Launch pg 79; Encounter the Phenomenon pg 81; Inquiry Activity-Ant Workers-pg 82-84; Making Claim Activity-pg 85; Lesson 3 Review Assessment pg 94-95</p>
	<p>SC.3.9.3.D Use evidence to construct an explanation for how the variation in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.</p>	<p>The students will gather and analyze data to communicate an understanding of inheritance and variation of traits through life cycles and environmental influences.</p>	<p>Unit 2 Module 2 Lesson 2 Inquiry Activity-Traits and Survival</p>	<p>Behavior traits</p>	<p>Close Reading Activity (Inherited Physical and Behavior Traits) pg 70-71; Inquiry Activity (Traits and Survival) pg 75</p>
	<p>SC.3.12 Weather and Climate</p>	<p>The students will gather and analyze data to communicate an understanding of weather and climate.</p>		<p>Weather, Climate</p>	
	<p>SC.3.12.4 Gather and analyze data to communicate an understanding of weather and climate.</p>	<p>The students will gather and analyze data to communicate an understanding of weather and climate.</p>	<p>Unit 4 Module 1 Lesson 1</p>	<p>temperature, weather</p>	<p>Unit 4 Module 1 Lesson 1-- Inquiry Activity-Predicting weather; Inquiry Activity-Becoming a Meteorologist pg 16-17</p>
	<p>SC.3.12.4.A Represent data in table, pictograph, and bar graph displays to describe typical weather conditions expected during a particular season.</p>	<p>The students will gather and analyze data to communicate an understanding of weather and climate.</p>	<p>Unit 4 Module 1 Lesson 1</p>	<p>atmosphere, precipitation</p>	<p>Pre-Assessment Lesson 1 Launch pg. 5; Encounter the Phenomenon pg 7; Inquiry Activity-Predict Weather pg 8-9; Inquiry Activity-Becoming a Meteorologist pg 16-17; Post-Assessment-Lesson 1 Review pg 18-19</p>

Weather and Climate	<p>SC.3.12.4.B Obtain and combine information to describe climates in different regions of the world.</p>	<p>The students will gather and analyze data to communicate an understanding of weather and climate.</p>	<p>Unit 4 Module 1 Lesson 2</p>	<p>axis, climate, season</p>	<p>Pre-Assessment Lesson 2 Launch pg 21; Encounter the Phenomenon pg 23; Inquiry Activity--Compare Weather Patterns pg 24-25; Inquiry Activity--Land and Temperature Change pg 34-35; Post-Assessment Lesson 2 Review pg 36-37</p>
	<p>SC.3.12.4.C Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.</p>	<p>The students will gather and analyze data to communicate an understanding of weather and climate.</p>	<p>Unit 4 Module 1 Lesson 3; Unit 4 Module 1 Lesson 4</p>	<p>natural hazard; floodwall; levee, lightning rod</p>	<p>Pre-Assessment Lesson 3 Launch pg 39; Encounter the Phenomenon pg 41; Inquiry Activity-Landslides pg 47; Close Reading-Growing up in Tornado Alley-pg 48-49; Inquiry Activity-Research Natural Hazards; Post Assessment Lesson 3 Review pg 52-53; Lesson 4-Pre-Assessment Lesson 4 Launch pg 55; Encounter the Phenomenon pg 57; Inquiry Activity-Build Sugar Structures pg 58-59; Inquiry Activity-Sandbags and Floods pg 64-65; Inquiry Activity-Build Weatherproof Structures pg 70; Post Assesment-Lesson 4 Review pg 72-73</p>

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/Activity
Waves: Waves and Information	SC.4.2 Waves: Waves and Information	The students will gather, analyze, and communicate evidence of waves and the information they transfer.		Waves, amplitude, wavelength	
	SC.4.2.1 Gather, analyze, and communicate evidence of waves and the information they transfer.	The students will gather, analyze, and communicate evidence of waves and the information they transfer.	McGraw Hill Unit 2	U2L2; longitudinal wave, medium, solar cell, sound wave, vibration: U3L2; amplitude, magnitude, seismic wave, seismograph, transverse wave, wavelength	U2: pre-test (whole group), 2 inquiry activity U3: pre-test (whole group), 2 inquiry activities
	SC.4.2.1.A Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.	The students will gather, analyze, and communicate evidence of waves and the information they transfer.	McGraw Hill Unit 2	U2L2; longitudinal wave, medium, solar cell, sound wave, vibration: U3L2; amplitude, magnitude, seismic wave, seismograph, transverse wave, wavelength	U2: pre-test (whole group), 2 inquiry activity U3: pre-test (whole group), 2 inquiry activities
	SC.4.2.1.B Generate and compare multiple solutions that use patterns to transfer information.	The students will gather, analyze, and communicate evidence of waves and the information they transfer.	McGraw Hill Unit 2	U2L2; longitudinal wave, medium, solar cell, sound wave, vibration: U3L2; amplitude, magnitude, seismic wave, seismograph, transverse wave, wavelength	U2: pre-test (whole group), 2 inquiry activity U3: pre-test (whole group), 2 inquiry activities
Energy: Conservation and Transfer	SC.4.4 Energy: Conservation and Transfer	The students will gather, analyze, and communicate evidence of energy conservation and transfer.			
	SC.4.4.2 Gather, analyze and communicate evidence of energy conservation and transfer.	The students will gather, analyze, and communicate evidence of energy conservation and transfer.	McGraw Hill Unit 2	chemical energy, nuclear energy, thermal energy, longitudinal wave, medium, solar cell, sound wave, vibration, circuit, conductor, electric current, insulator, resistor, conduction, convection, heat, radiation	Module: Energy Transfer: pre-test (whole group), 9 Inquiry Activity, Summative Assessment (lesson check)
	SC.4.4.2.A Use evidence to construct an explanation relating the speed of an object to the energy of that object	The students will gather, analyze, and communicate evidence of energy conservation and transfer.	McGraw Hill Unit 2	acceleration, force, friction, inertia, motion, speed, velocity, energy, collision, conservation of energy, energy transfer	pre-test (whole group), 6-Inquiry Activity, Module Activity Summative Assessment (lesson check)
	SC.4.4.2.B Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electrical currents.	The students will gather, analyze, and communicate evidence of energy conservation and transfer.	McGraw Hill Unit 2	chemical energy, nuclear energy, thermal energy, longitudinal wave, medium, solar cell, sound wave, vibration, circuit, conductor, electric current, insulator, resistor, conduction, convection, heat, radiation	Module: Energy Transfer: pre-test (whole group), 9 Inquiry Activity, Summative Assessment (lesson check)
	SC.4.4.2.C Ask questions and predict outcomes about the changes in energy that occur when objects collide.	The students will gather, analyze, and communicate evidence of energy conservation and transfer.	McGraw Hill Unit 2	force, friction, inertia, motion, speed, velocity	pre-test (whole group), 6-Inquiry Activity, Module Activity Summative Assessment (lesson check)
	SC.4.4.2.D Apply scientific ideas to design, test and refine a device that converts energy from one form to another	The students will gather, analyze, and communicate evidence of energy conservation and transfer.	McGraw Hill Unit 2	unit 2 Lesson 3: circuit, conductor, electric current, insulator, resistor	have students review what they learned in lesson 3 before the inquiry activities

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/Activity
	<p>SC.4.4.2.E Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.</p>	<p>The students will gather, analyze, and communicate evidence of energy conservation and transfer.</p>	<p>McGraw Hill Unit 2</p>	<p>U2L2; longitudinal wave, medium, solar cell, sound wave, vibration: unit 2 Lesson 3: circuit, conductor, electric current, insulator, resistor</p>	<p>have students review what they learned in lesson 2 before the inquiry activity: have students review what they learned in lesson 3 before the inquiry activities</p>
	<p>SC.4.4.2.F Obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment.</p>	<p>The students will gather, analyze, and communicate evidence of energy conservation and transfer.</p>	<p>McGraw Hill Unit 2</p>	<p>fossil fuel, natural resource, nonrenewable resource, alternative energy source, biofuel, geothermal energy, hydroelectricity, renewable resource, solar power, conservation, pollution, constraint, criteria, design process, prototype</p>	<p>Module: Natural Resources in the Environment: pre-test (whole group), 7 Inquiry Activity, Summative Assessment (lesson check)</p>
Structure, Function and Information Processing	<p>SC.4.6 Structure, Function, and Information Processing</p>	<p>The students will gather and analyze data to communicate an understanding of structure, function, and information processing of living things.</p>		<p>organisms, reflecting, behavior, reproduction, senses</p>	
	<p>SC.4.6.3 Gather and analyze data to communicate an understanding of structure, function and information processing of living things.</p>	<p>The students will gather and analyze data to communicate an understanding of structure, function, and information processing of living things.</p>	<p>McGraw Hill Unit 3</p>		
	<p>SC.4.6.3.A Develop a model to describe that light reflecting from objects and entering the eyes allows objects to be seen.</p>	<p>The students will gather and analyze data to communicate an understanding of structure, function, and information processing of living things.</p>	<p>McGraw Hill Unit 3</p>	<p>brain, central nervous system, echolocation, nervous system peripheral nerve, sensory organs, spinal cord, concave lens, convex lens, image, opaque, reflections, refractions, translucent, transparent, binary code, coding</p>	<p>Module: Information Processing and Transfer: pre-test (whole group), 7 Inquiry Activity, Summative Assessment (lesson check)</p>
	<p>SC.4.6.3.B Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior and reproduction.</p>	<p>The students will gather and analyze data to communicate an understanding of structure, function, and information processing of living things.</p>	<p>McGraw Hill Unit 3</p>	<p>adaptation, response, stimulus, transpirations, tropism, external structure, internal structure, structural adaptation,</p>	<p>Module: Structures and Functions of Living Things: pre-test (whole group), 4 Inquiry Activity, Summative Assessment (lesson check)</p>
	<p>SC.4.6.3.C Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information.</p>	<p>The students will gather and analyze data to communicate an understanding of structure, function, and information processing of living things.</p>	<p>McGraw Hill Unit 3</p>	<p>brain, central nervous system, echolocation, nervous system peripheral nerve, sensory organs, spinal cord, concave lens, convex lens, image, opaque, reflections, refractions, translucent, transparent, binary code, coding</p>	<p>Module: Information Processing and Transfer: pre-test (whole group), 7 Inquiry Activity, Summative Assessment (lesson check)</p>
	<p>SC.4.13 Earth's Systems: Processes That Shape the Earth</p>	<p>The students will gather and analyze data to communicate an understanding of earth's systems and processes that shape the earth.</p>		<p>Earth, Fossils, Formation, landscape, erosion, vegetation</p>	

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/ Activity
<p style="text-align: center;">Earth's Systems: Processes That Shape the Earth</p>	<p>SC.4.13.4 Gather and analyze data to communicate an understanding of Earth's systems and processes that shape the Earth.</p>	<p>The students will gather and analyze data to communicate an understanding of earth's systems and processes that shape the earth.</p>	<p>The students will gather and analyze data to communicate an understanding of structure, function, and information processing of living things.</p>	<p>Model: Earthquakes; fault, amplitude, magnitude, seismic wave, seismograph, transverse wave, wavelength, bracing, lateral force, shear wall: Model: Earth and its changing features; continent, earthquake, landform, latitude, longitude, plates, topographic map, volcano, fossil, sediment, sedimentary rock, deposition, erosion, vegetations, weathering</p>	<p>Model: Earthquakes: pre-test (whole group), 6 Inquiry Activity, Summative Assessment (lesson check): Module: Earth and Its Changing Features: pre-test (whole group), 6 Inquiry Activity, Summative Assessment (lesson check)</p>
	<p>SC.4.13.4.A Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.</p>	<p>The students will gather and analyze data to communicate an understanding of earth's systems and processes that shape the earth.</p>	<p>The students will gather and analyze data to communicate an understanding of structure, function, and information processing of living things.</p>	<p>U3 L2: fossil, sediment, sedimentary rock</p>	<p>pre-test (whole group), 2 inquiry activities, assessment (lesson check)</p>
	<p>SC.4.13.4.B Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind or vegetation.</p>	<p>The students will gather and analyze data to communicate an understanding of earth's systems and processes that shape the earth.</p>	<p>The students will gather and analyze data to communicate an understanding of structure, function, and information processing of living things.</p>	<p>fault, amplitude, magnitude, seismic wave, seismograph, transverse wave, wavelength, bracing, lateral force, shear wall</p>	<p>Model: Earthquakes: pre-test (whole group), 6 Inquiry Activity, Summative Assessment (lesson check)</p>
	<p>SC.4.13.4.C Analyze and interpret data from maps to describe patterns of Earth's features.</p>	<p>The students will gather and analyze data to communicate an understanding of earth's systems and processes that shape the earth.</p>	<p>The students will gather and analyze data to communicate an understanding of structure, function, and information processing of living things.</p>	<p>continent, earthquake, landform, latitude, longitude, plates, topographic map, volcano, fossil, sediment, sedimentary rock, deposition, erosion, vegetations, weathering</p>	<p>Module: Earth and Its Changing Features: pre-test (whole group), 6 Inquiry Activity, Summative Assessment (lesson check)</p>

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/ Activity
	<p>SC.4.13.4.D Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.</p>	<p>The students will gather and analyze data to communicate an understanding of earth's systems and processes that shape the earth.</p>	<p>The students will gather and analyze data to communicate an understanding of structure, function, and information processing of living things.</p>	<p>fault, amplitude, magnitude, seismic wave, seismograph, transverse wave, wavelength, bracing, lateral force, shear wall</p>	<p>Unit 3 Module: Earthquakes lessons 1-3</p>

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/Activity
Structure and Properties of Matter	SC.5.3 Structure and Properties of Matter				
	SC.5.3.1 Gather, analyze, and communicate evidence of structure and properties of matter.	Students will gather, analyze, and communicate evidence of structure and properties of matter.	McGraw Hill: Unit 1: Lesson 1: Investigate the Properties of Matter	solubility, magnetism, color, texture, hardness, temperature, mass volume, reflectivity, conductivity, chemical property, physical property	Unit 1: McGraw Hill: Assessment Practice: Matter; Module Test Matter; Module STEM Project: Design the Perfect Pancake
	SC.5.3.1.A Develop a model to describe that matter is made of particles too small to be seen.	Students will develop a model to describe matter.	McGraw Hill: Unit 1 Open Sci Ed. lesson 3; What do we see when we look closer	atoms, molecules, million, billion, magnified	Open Sci Ed. Create models: Roadkill
	SC.5.3.1.B Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.	Students will investigate the effect of temperature on the rate of a mixture. Students will use mathematical and computational thinking to determine if mixing substances causes a change in mass.	McGraw Hill: Lesson 2, 3: Mixtures and Solutions; Physical and Chemical Changes Open Sci Ed. : Lesson 3	Celsius, Fahrenheit, Mixture, Solution, , Chemical Change, Conservation of Mass, Physical Change	Science Repository SC 5.3.1B: Structure and Properties of Matter:Task 1 &2:Grandma's Cereal Bars, Freezing Water & Ice Cream


	<p>SC.5.3.1.C Make observations and measurements to identify materials based on their properties.</p>	<p>Students will make observations and measurements to identify materials based on their properties.</p>	<p>McGraw Hill: Lesson 1: Identify Properties of Matter; lesson 4: Solid, Liquid, and gases</p>	<p>grams, kilograms, chemical property, conductivity, magnetism, mass, matter, physical Property, reflectivity, solubility, volume</p>	<p>Science Repository SC 5.3.1 C: Structures and Properties of Matter: 2 Tasks: Properties of White Powders; Melting Candy</p>
	<p>SC.5.3.1.D Conduct an investigation to determine whether the mixing of two or more substances results in new substances.</p>	<p>Students will conduct an investigation to determine whether the mixing of 2 or more substances results in new substances.</p>	<p>McGraw Hill: Lesson 2: Mixtures and Solutions</p>	<p>colloid, mixture, solution</p>	
	<p>SC.5.8 Matter and Energy in Organisms and Ecosystems</p>				

Matter and Energy in	<p>SC.5.8.2 Gather and analyze data to communicate understanding of matter and energy in organisms and ecosystems</p>	<p>Students will gather and analyze data to communicate understanding of how matter and energy move through an ecosystem.</p>	<p>Open Sci ed: Roadkill: Ongoing McGraw Hill: Unit 2(Matter in Ecosystems): Lesson 2,3, Unit 2(Energy in Ecosystems): Lessons 2, 3</p>	<p>food chain,food web, energy, producers consumers, decomposers, scavengers, matter, abiotic factor, biotic factor, habitat, invasive species, predator, prey</p>	<p>Open Sci. Ed.: Biology Bottles: Lesson 5a-5e Mold Investigation: 5d: Where is all of this fuzzy stuff in our containers coming from? McGraw Hill Unit 2: Module Pretest: Matter in Ecosystems; Module Test: Matter in Ecosystems; STEM: Module Project: Design. Compost Heap; Investigate: Soil-Less Gardens McGraw Hill Unit 2s: Energy in Ecosystems : Module Test (Energy in Ecosystems; Guided Practice (Energy in Ecosystems; STEM Project; Design an Eco-Column:</p>
	<p>SC.5.8.2.A Use models to describe that energy in animals' food (used for body repair, growth, and motion and to maintain body warmth) was once energy from the sun</p>	<p>Students will create models to describe that energy in animals; food was once energy from the sun.</p>	<p>Open Sci Ed: Roadkill: Lessons 1-15</p>	<p>matter, energy, model, producers, consumers,sun</p>	<p>Project Open Sci Ed.: Roadkill' Biology Project; Create a poster that shows how energy in animals' food is traced back to the sun.: Science Repository 5.8.2 A : Matter and Energy in Organisms and Ecosystems: Analyzing Deer Ecosystem, Analyze Population, Food Chain</p>

Organisms and Ecosystems	<p>SC.5.8.2.B Support an argument that plants get the materials they need for growth chiefly from air and water.</p>	<p>Students will develop an argument that explains that plants get the materials they need for growth. Students will investigate and explain that most of the mass of a plants is obtained from water and air and not from the soil.</p>	<p>Open Sci. Ed: Roadkill: Lesson 8-12: Airplane plants investigation; (Where do plants get the matter they need to grow?) McGraw Hill: Unit 2: Lesson 1: Plant Survival</p>	<p>energy, phloem, stomata, transpiration, xylem, photosynthesis, oxygen, carbon dioxide</p>	
	<p>SC.5.8.2.C Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.</p>	<p>Students will develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.</p>	<p>Open Sci Ed.: Roadkill: Lessons 1-14; McGraw Hill Unit 2: Lessons 2,3</p>	<p>abiotic factor, biotic factor, habitat, invasive species, predator, prey, bacteria, decomposer, fungi, atmosphere, geosphere, hydrosphere, biosphere, water cycle, nitrogen cycle, oxygen-carbon dioxide cycle</p>	<p>Open Sci Ed: Biology Bottles; Sealed Container Mold Investigation 5B Science Repository Tasks: Matter and Energy in Organisms and Ecosystems: Pumpkins and River Otter</p>
	<p>SC.5.11 Space Systems: Earth's Stars and Solar System</p>				

Space Systems: Earth's Stars and Solar System	SC.5.11.3 Gather and analyze data to communicate understanding of space systems: Earth's stars and solar system.	Students will gather and analyze data to communicate understanding of space systems.	McGraw Hill: Unit 4: Earth's Patterns and Movement: Lesson 2	moon phases, orbit, revolution, rotation	McGrawHill: Unit 4: Earth and Space Patterns: Module Test: Earth & Space; Guided Practices: Earth & Space; STEM Module: Model a Constellation; McGraw Hill Unit 4: Earth's Patterns & Movement: Module: Test: Earth's Patterns and Movement; Guided Practice: Earth's Pattern & Movement; STEM Project: Design a Planetarium
	SC.5.11.3.A Support an argument that the gravitational force exerted by Earth on objects is directed down.	Students will support an argument that gravity causes objects to be pulled towards the center of Earth.	McGraw Hill: Unit 4: Earth's Patterns and Movement: Lesson 1	gravity, meteor, meteorite, tides	Science Repository Tasks Space Systems: 5.11.3 A Gravity Model
	SC.5.11.3.B Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.	Students will use the CER strategy to support an argument about the apparent brightness of the sun compare to other stars is due to their relative distance from earth.	McGraw Hill: Unit 4: Lesson 2: Stars and their Patterns	constellation, light-year, stars	Science Repository Tasks: 5.11.3 B: Earth Systems: Sky Observations/Flashlight Distance Vs. Brightness; Image from a Planetarium Show

	<p>SC.5.11.3.C Represent data in graphical displays to reveal patterns of daily changes in the length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.</p>	<p>Students will represent data in graphical displays and design a planetarium model to reveal patterns of daily changes in the sky.</p>	<p>McGraw Hill: Earth's Patterns and Movement: Unit 4: Lesson 2; McGraw Hill: Earth and Space: Unit 4:</p>	<p>shadows, day and night, moon phases, seasonal changes, apparent motion, galaxy, planet, constellation, light-year, star</p>	<p>Science Repository Tasks: 5.11.3 C Earth's Stars and Solar System: Daylight and Darkness in Different Months;</p>
	<p>SC.5.13.4 Earth's Systems</p>				
	<p>SC.5.13.4 Gather and analyze data to communicate understanding of Earth's systems.</p>	<p>Students will gather and Analyze data to communicate understanding of Earth's systems</p>	<p>McGraw Hill: Unit 3: Earth's Interactive Systems; Lesson 1: Earth's Place in Space Lesson 2: Stars and their patterns</p>	<p>geosphere, biosphere, hydrosphere, atmosphere, deposition, erosion, floodplain, glacier</p>	<p>McGraw Hill: Unit 3: Earth's Interactive Systems: (Earth's Water System) Module Test: Earth's Water System; Guided Practice (Earth's Water System); STEM Project: Design a Rainwater Collection System; McGraw Hill Unit 3: (Earth's Other Systems): Module Test, Guided Practice; STEM Project Design a Desert Oasis</p>

	<p>SC.5.13.4.A Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.</p>	<p>Students will develop a model and describe ways the geosphere, biosphere, hydrosphere, and atmosphere interact.</p>	<p>Open Sci Ed: Water: McGraw Hill Unit 2: Lessons 1,2, 3: (Earth's Major Systems, Cycles of Matter in Ecosystems, Cycles of Matter in Ecosystems) McGraw Hill: Earth's Other Systems: Lessons 1 (Effects of the Geosphere), Lesson 2 (Effects of the Atmosphere), Lesson 3 (Effects of the Biosphere) McGraw Hill Unit 3: Effects of the Hydrosphere</p>	<p>geosphere, biosphere, hydrosphere, atmosphere, deposition, erosion, floodplain, glacier</p>	<p>Science Repository Tasks: 5.13.A: Earth's Systems: Changes in Nebraska Landforms;</p>

Earth's Systems	<p>SC.5.13.4.B Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.</p>	<p>Students will be able to graph and describe the amounts of salt water and fresh water to provide evidence about the distribution of water on Earth.</p>	<p>McGraw Hill: Unit 3: Earth's Water Systems: Lesson 1 Open Sci Ed: Water Students will be able to graph and describe the amounts of salt water and fresh water to provide evidence about the distribution of water on Earth. Open Sci. Ed.: Water: Lesson 10: How Much of Earth's Water is Salinity? L18: How much freshwater exists underground and in lakes?</p>	<p>Glaciers, Ice Caps, Fresh Water, Distribute, Permafrost, Salt Water, Groundwater, Reservoir, Storage</p>	<p>McGraw Hill: Unit 3: Earth's Interactive Systems: (Earth's Water System) Module Test: Earth's Water System; Guided Practice (Earth's Water System); STEM Project: Design a Rainwater Collection System; Science Repository Tasks: 5.13.4 B: Nebraska Rivers, Graphing Distribution of water; Reservoirs of water on Earth Graphing</p>
	<p>SC.5.13.4.C Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment</p>	<p>Students will be able to generate science ideas to protect the Earth's resources and environment.</p>	<p>McGraw Hill: Unit 3: Earth's Water Systems; Lesson 2. Open Sci Ed: Water: Where does our clean water come from and where does it go after we make it dirty?</p>	<p>Conserve, acid rain, algae bloom</p>	<p>Science Repository Tasks: 5.13.4 C: Earth's Systems: Task Air Pollution; Trash Tragedy</p>

	<p>SC.5.13.4.D Define a simple design problem that can be solved by applying scientific ideas about the conservation of fresh water on Earth.</p>	<p>Students will design a rainwater collection system by applying scientific ideas about the conservation of fresh water on Earth.</p>	<p>Open Sci Ed: Water: L13: What do people do who live in areas without surface water? L1-L3 How do we clean and dirty water? L16 How do people get the groundwater out of the ground to drink? L17: Is surface water clean enough to drink? L19-21: How do freshwater sources get refilled? L22: What happens to water that becomes storm drain runoff? L24: How can we design solutions to water-related problems?</p>	<p>precipitation, runoff, groundwater, infiltrates, evaporation, wastewater treatment, water consumption, water accesibility, water quality, rain gardens</p>	<p>Science Repository TAsks: 5.13.4 D Human Impacts on Water: Water Resources</p>
	<p>SC.5.13.4.E Define a simple design problem reflecting a need for a want that includes specified criteria for success and constraints on materials, time, or cost.</p>	<p>Students will define a design problem reflecting needs for a want that includes specific criteria for success and constraints on materials, time, or cost.</p>			<p>Ongoing: Each unit for McGraw Hill requires students to create a STEM Module Project that reflects and connects their learning. Science Repository Tasks: 5.13.4 E: Earth Systems: Garden Design Issues;</p>

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/Activity
Energy	SC.6.4 Energy				
	SC.6.4.1 Gather, analyze, and communicate evidence of energy.	Students will gather analyze, and communicate evidence of energy	Inspire Science Unit 3, Module 1: Energy and Matter		Unit 3 Module 1 Test
	SC.6.4.1.A Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.	Students will be able to apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.	Inspire Science Unit 3, Module 1, Lesson 3:Thermal Energy Transfer; STEM Module Project "Cookin with the Sun;" OpenSciEd "How can containers keep stuff from warming up or cooling down?" lessons 15-17	thermal energy, closed system, open system, source object, receiver object, heat, conduction, thermal equilibrium, radiation, convection, condensation	STEM Module Project "Cookin with the Sun, Lesson 3 Check
	SC.6.4.1.B Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principle and potential impacts on people and the natural environment that may limit possible solutions.	Students will be able to define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principle and potential impacts on people and the natural environment that may limit possible solutions.	OpenSciEd "How can containers keep stuff from warming up or cooling down?" lessons 15-17	thermal energy transfer, temperature, condensation, heat	
	SC.6.4.1.C Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.	Students will be able to plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.	Inspire Science Unit 3, Module 1, Lesson 1:Particles in Motion and Lesson 2:States of Matter	random motion, diffusion, kinetic energy, thermal dynamics, thermal expansion, thermal contraction, temperature, condensation, vaporization, potential energy, thermal energy	Lesson 1 Check and Lesson 2 Check
	SC.6.4.1.D Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.	Students will be able to construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.	Inspire Science Unit 3, Module 1, Lesson 1:Particles in Motion and Lesson 2:States of Matter	random motion, diffusion, kinetic energy, thermal dynamics, thermal expansion, thermal contraction, temperature, condensation, vaporization, potential energy, thermal energy	Lesson 1 Check and Lesson 2 Check
Structure and Function and Information Processing	SC.6.6 Structure and Function and Information Processing				
	SC.6.6.2 Gather, analyze, and communicate evidence of the relationship between structure and function in living things.	Students will be able to gather, analyze, and communicate evidence of the relationship between structure and function in living things.	Inspire Science Unit 1, Module 2: Body Systems; OpenSciEd "How do living things heal?"		Unit 1 Module 1 Test
	SC.6.6.2.A Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.	Students will be able to conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.	Inspire Science Unit 1, Module 1, Lesson 1:Exploring Life; OpenSciEd "How do living things heal?" Lessons 7, 10, 11	cell, cell theory, light microscope, electron microscope, multicellular organism, reproduction, homeostasis, prokaryotic, eukaryotic, protein, cellular respiration	Lesson 1 Check
	SC.6.6.2.B Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	Students will be able to develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.	Inspire Science Unit 1, Module 1, Lesson 2:Cell Structure and Function	cell, organelle, cell membrane, cytoplasm, cell wall, chloroplast, nucleus	Lesson 2 Check

	<p>SC.6.6.2.C Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.</p>	<p>Students will be able to use arguments supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.</p>	<p>Inspire Science Unit 1, Module 2, Lesson 1:Levels of Organization; Lesson 2:Structure and Support; Lesson 3: Obtaining Energy and Removing Waste; Lesson 4: Moving Materials; OpenSciEd "How do living things heal?" lessons 2, 4, 12</p>	<p>cell differentiation, tissue, organ, organ system, muscle, joint, ligament, hydrostatic skeleton, exoskeleton, cardiac muscle, smooth muscle, calorie, nutrient, digestion, mechanical digestion, chemical digestion, esophagus, peristalsis, villus, excretory system,</p>	<p>Lessons 1-4 Checks</p>	
	<p>SC.6.6.2.D Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior of storage as memories.</p>	<p>Students will be able to gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior of storage as memories.</p>	<p>Inspire Science Unit 1, Module 2, Lesson 5:Control and Information Processing</p>	<p>sense receptors, stimuli</p>	<p>Lesson 5 Check</p>	
<p>Growth, Development and Reproduction or Organisms</p>	<p>SC.6.9 Growth, Development, and Reproduction of Organisms</p>					
	<p>SC.6.9.3 Gather, analyze and communicate evidence of the inheritance and variation of traits.</p>	<p>Students will be able to gather, analyze and communicate evidence of the inheritance and variation of traits.</p>	<p>Inspire Science Unit 2: Reproduction of Organisms</p>		<p>Unit 2 Test</p>	
	<p>SC.6.9.3.A Construct an argument based on evidence for how plant and animal adaptations affect the probability of successful reproduction.</p>	<p>Students will be able to construct an argument based on evidence for how plant and animal adaptations affect the probability of successful reproduction.</p>	<p>Inspire Science Unit 2, Lesson 1: InheritanceInspire Science Unit 2, Lesson 3:Reproduction and Growth of Animals and Lesson 4: Reproduction and Growth of Plants</p>	<p>behavior, pollination, phototropism, thigmotropism, gravitropism</p>	<p>Lesson 3 Check and Lesson 4 Check</p>	
	<p>SC.6.9.3.B Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</p>	<p>Students will be able to construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</p>	<p>Inspire Science Unit 2, Lesson 1: Inheritance</p>	<p>phenotype, heredity, genetics, dominant, recessive, gene, allele, genotype, homozygous, heterozygous, pedigree</p>	<p>Lesson 1 Check</p>	
	<p>SC.6.9.3.C Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.</p>	<p>Students will be able to develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.</p>	<p>Inspire Science Unit 2 STEM Module Project "Get Your Game Face On"</p>	<p>sexual reproduction, asexual reproduction, heredity, genetics, dominant, recessive, gene, allele, genotype, homozygous, heterozygous</p>	<p>STEM Project</p>	
	<p>SC.6.12 Weather and Climate</p>					
	<p>SC.6.12.4 Gather, analyze, and communicate evidence of factors and interactions that affect weather and climate.</p>	<p>Students will be able to gather, analyze, and communicate evidence of factors and interactions that affect weather and climate.</p>			<p>Module Project "As the Water Turns"</p>	
	<p>SC.6.12.4.A Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.</p>	<p>Students will be able to collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.</p>	<p>Inspire Science Unit 4, Module 3, Lesson 3:Weather Patterns; OpenSciEd "Why does a lot of hail, rain, or snow fall at some times and not others?"</p>	<p>convection, wind, polar easterlies, prevailing westerlies, air mass, front</p>	<p>Lesson 3 Check</p>	

Weather and Climate	<p>SC.6.12.4.B Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.</p>	<p>Students will be able to develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.</p>	<p>Inspire Science Unit 4, Module 3, Lesson 2: Atmospheric and Oceanic Circulation; Module Project "As the Water Turns"</p>	<p>density current, surface current, upwelling, trade winds, Coriolis effect</p>	<p>Lesson 2 Check</p>	
	<p>SC.6.12.4.C Ask questions to clarify evidence of the factors that have caused the change in global temperatures over thousands of years.</p>	<p>Students will be able to ask questions to clarify evidence of the factors that have caused the change in global temperatures over thousands of years.</p>	<p>Inspire Science Unit 4, Module 3, Lesson 4: Impact on Climate</p>	<p>climate, climate change, global warming, greenhouse gases, greenhouse effect</p>	<p>Lesson 4 Check</p>	
	<p>SC.6.12.4.D Analyze and interpret data on weather and climate to forecast future catastrophic events and inform the development of technologies to mitigate their effect.</p>	<p>Students will be able to analyze and interpret data on weather and climate to forecast future catastrophic events and inform the development of technologies to mitigate their effect.</p>	<p>OpenSciEd "Where do natural hazards happen and how do we prepare for them?"</p>	<p>natural hazard, tsunami, warning system, catastrophic, earthquake, emergency communication system, coastal community</p>		
Earth's Systems	<p>Earth's Systems</p>					
	<p>SC.6.13.5 Gather, analyze, and communicate evidence of the flow of energy and cycling of matter associated with Earth's materials and processes.</p>	<p>Students will be able to gather, analyze, and communicate evidence of the flow of energy and cycling of matter associated with Earth's materials and processes.</p>	<p>Inspire Science Unit 3, Module 2: The Water Cycle</p>		<p>Unit 3 Module 2 Test</p>	
	<p>SC.6.13.5.A Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.</p>	<p>Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.</p>	<p>Inspire Science Unit 3, Module 2, Lesson 1: Water in the Atmosphere and Lesson 2: Water on Earth's Surface; STEM Module Project "Dinosaurs and Dew"</p>	<p>evaporation, condensation, transpiration, crystallization, precipitation, water cycle, aquifer</p>	<p>Lesson 1 Check and Lesson 2 Check</p>	

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/ Activity
Structures and Properties of Matter	SC.7.3 Structure and Properties of Matter		Inspire Science, Unit 1, Understanding Matter, Module 1, Classification and States of Matter, OpenSci Ed, Unit 7.1 Chemical Reactions and Matter		
	SC.7.3.1 Gather, analyze, and communicate evidence of the structure, properties, and interactions of matter.	The student will gather, analyze and communicate evidence of the structure, properties, and interactions of matter.	Inspire Science, Unit 1, Understanding Matter, Module 1, Classification and States of Matter	kinetic energy, temperature, potential energy, atom, substance, element, compound, chemical formula, thermal contraction, theam expansion, heat, vaporization, molecules	Inspire Science Unit 1 Module 1Test, STEM Module Project, Module Wrap Up
	SC.7.3.1.A Develop models to describe the atomic composition of simple molecules.	The student will develop models to describe the atomic composition of simple molecules.	Inspire Science, Unit 1, Understanding Matter, Module 1, Classification and States of Matter	kinetic energy, temperature, potential energy, atom, substance, element, compound, chemical formula, thermal contraction, theam expansion, heat, vaporization, molecules	Inspire Science Unit 1 Module 1Test, STEM Module Project, Module Wrap Up
	SC.7.3.1.B Gather and make sense of information to sedcribe that synthetic materials come from natural resources and impact society.	The student will gather and make sense of information to sedcribe that synthetic materials come from natural resources and impact society.	Inspire Science, Unit 1, Understanding Matter, Module 1, Classification and States of Matter	kinetic energy, temperature, potential energy, atom, substance, element, compound, chemical formula, thermal contraction, theam expansion, heat, vaporization, molecules	Inspire Science Unit 1 Module 1Test, STEM Module Project, Module Wrap Up
	SC.7.3.1.C Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.	The student will develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.	Inspire Science, Unit 1, Understanding Matter, Module 1, Classification and States of Matter	kinetic energy, temperature, potential energy, atom, substance, element, compound, chemical formula, thermal contraction, theam expansion, heat, vaporization, molecules	Inspire Science Unit 1 Module 1Test, STEM Module Project, Module Wrap Up
		SC.7.5 Chemical Reactions		Inspire Science, Unit 1, Module 2, Matter: Properties and Changes, OpenSci Ed. Unit 7.2 Chemical Reactions and Energy	
SC.7.5.2 Gather, analyze, and communicate evidence of chemical reactions.		The student will gather, analyze, and communicate evidence of chemical reactions.	Inspire Science, Unit 1, Module 2, Matter: Properties and Changes	physical properties, mass, volume, density, chemical property, flammability, oxidation, reactivity, chemical change, law of conservation of mass, chemical reaction, reactants, product, endothermic reactions, ectothermic reaction	Inspire Science Unit 1 Module 2 Test, STEM Module Project, Module Wrap-up
SC.7.5.2.A Analyze and interpret data on the properties of substances before and after the substances interact to dertmine if a chemical reacion has occurred.		The student will analyze and interpret data on the properties of substances before and after the substances interact to dertmine if a chemical reacion has occurred.	Inspire Science, Unit 1, Module 2, Matter: Properties and Changes	physical properties, mass, volume, density, chemical property, flammability, oxidation, reactivity, chemical change, law of conservation of mass, chemical reaction, reactants, product, endothermic reactions, ectothermic reaction	Inspire Science Unit 1 Module 2 Test, STEM Module Project, Module Wrap-up

Chemical Reactions	SC.7.5.2.B Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.	The student will develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.	Inspire Science, Unit 1, Module 2, Matter: Properties and Changes	physical properties, mass, volume, density, chemical property, flammability, oxidation, reactivity, chemical change, law of conservation of mass, chemical reaction, reactants, product, endothermic reactions, ectothermic reaction	Inspire Science Unit 1 Module 2 Test, STEM Module Project, Module Wrap-up
	SC.7.5.2.C Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.	The student will undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.	Inspire Science, Unit 1, Module 2, Matter: Properties and Changes	physical properties, mass, volume, density, chemical property, flammability, oxidation, reactivity, chemical change, law of conservation of mass, chemical reaction, reactants, product, endothermic reactions, ectothermic reaction	Inspire Science Unit 1 Module 2 Test, STEM Module Project, Module Wrap-up
	SC.7.5.2.D Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.	The students will analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.	Inspire Science, Unit 1, Module 2, Matter: Properties and Changes	physical properties, mass, volume, density, chemical property, flammability, oxidation, reactivity, chemical change, law of conservation of mass, chemical reaction, reactants, product, endothermic reactions, ectothermic reaction	Inspire Science Unit 1 Module 2 Test, STEM Module Project, Module Wrap-up
	SC.7.7 Interdependent Relationships in Ecosystems		Inspire Science, Unit 4, Interactions within Ecosystems, Module 2 and 3, OpenSci Ed, Unit 7.5 Ecosystem Dynamics		
Interdependent Relationships in Ecosystems	SC.7.7.3 Gather, analyze, and communicate evidence of interdependent relationships in ecosystems.	The students will gather, analyze, and communicate evidence of interdependent relationships in ecosystems.	Inspire Science, Unit 4, Interactions within Ecosystems, Module 2 and 3	poulations, communities, species, biosphere, biotic, abiotic, carrying capacity, overpopulation, parasitism, mutualism, predator, prey, eutrophication, biodiversity, genetic diversity, ecosystem diversity, biome, invasive species, habitat destruction, reclamation	Inspire Science Unit 4 Module 2 and 3 Test, STEM Module Project, Module Wrap-up
	SC.7.7.3.A Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.	The students will construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.	Inspire Science, Unit 4, Interactions within Ecosystems, Module 2 and 3	poulations, communities, species, biosphere, biotic, abiotic, carrying capacity, overpopulation, parasitism, mutualism, predator, prey, eutrophication, biodiversity, genetic diversity, ecosystem diversity, biome, invasive species, habitat destruction, reclamation	Inspire Science Unit 4 Module 2 and 3 Test, STEM Module Project, Module Wrap-up
	SC.7.7.3.B evaluate competing design solutions for maintaining biodiversity and ecosystem services.	The students will evaluate competing design solutions for maintaining biodiversity and ecosystem services.	Inspire Science, Unit 4, Interactions within Ecosystems, Module 2 and 3	poulations, communities, species, biosphere, biotic, abiotic, carrying capacity, overpopulation, parasitism, mutualism, predator, prey, eutrophication, biodiversity, genetic diversity, ecosystem diversity, biome, invasive species, habitat destruction, reclamation	Inspire Science Unit 4 Module 2 and 3 Test, STEM Module Project, Module Wrap-up
	SC.7.7.3.C Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	The students will evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	Inspire Science, Unit 4, Interactions within Ecosystems, Module 2 and 3	poulations, communities, species, biosphere, biotic, abiotic, carrying capacity, overpopulation, parasitism, mutualism, predator, prey, eutrophication, biodiversity, genetic diversity, ecosystem diversity, biome, invasive species, habitat destruction, reclamation	Inspire Science Unit 4 Module 2 and 3 Test, STEM Module Project, Module Wrap-up

	SC.7.7.3.D Apply scientific principles to design a method for monitoring and increasing positive human impact on the environment.	The students will apply scientific principles to design a method for monitoring and increasing positive human impact on the environment.	Inspire Science, Unit 4, Interactions within Ecosystems, Module 2 and 3	populations, communities, species, biosphere, biotic, abiotic, carrying capacity, overpopulation, parasitism, mutualism, predator, prey, eutrophication, biodiversity, genetic diversity, ecosystem diversity, biome, invasive species, habitat destruction, reclamation	Inspire Science Unit 4 Module 2 and 3 Test, STEM Module Project, Module Wrap-up
Matter and Energy in Organisms and Ecosystems	SC.7.8 Matter and Energy in Organisms and Ecosystems		Inspire Science, Unit 4, Inertactions within Ecosystems, Module 1, Matter and Energy in Ecosystems		
	SC.7.8.4 Gather, analyze, and communicate evidence of the flow of energy and cycling of matter in organisms and ecosystems.	The students will gather, analyze, and communicate evidence of the flow of energy and cycling of matter in organisms and ecosystems.	Inspire Science, Unit 4, Inertactions within Ecosystems, Module 1, Matter and Energy in Ecosystems	photosynthesis, ecosystem, producers, consumers, dedomposers, food chain, food web, energy pyramid, evaporation, condensation, precipitation, carbon oxygen cycle	Inspire Science Unit 4 Module 1 Test, STEM Module Project, Module Wrap-up
	SC.7.8.4.A Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.	The students will construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.	Inspire Science, Unit 4, Inertactions within Ecosystems, Module 1, Matter and Energy in Ecosystems	photosynthesis, ecosystem, producers, consumers, dedomposers, food chain, food web, energy pyramid, evaporation, condensation, precipitation, carbon oxygen cycle	Inspire Science Unit 4 Module 1 Test, STEM Module Project, Module Wrap-up
	SC,7.8.4.B Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as matter moves through an organism.	The students will develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as matter moves through an organism.	Inspire Science, Unit 4, Inertactions within Ecosystems, Module 1, Matter and Energy in Ecosystems	photosynthesis, ecosystem, producers, consumers, dedomposers, food chain, food web, energy pyramid, evaporation, condensation, precipitation, carbon oxygen cycle	Inspire Science Unit 4 Module 1 Test, STEM Module Project, Module Wrap-up
	SC.7.8.4.C Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.	The students will analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.	Inspire Science, Unit 4, Inertactions within Ecosystems, Module 1, Matter and Energy in Ecosystems	photosynthesis, ecosystem, producers, consumers, dedomposers, food chain, food web, energy pyramid, evaporation, condensation, precipitation, carbon oxygen cycle	Inspire Science Unit 4 Module 1 Test, STEM Module Project, Module Wrap-up
	SC.7.8.4.D Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.	The students will develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.	Inspire Science, Unit 4, Inertactions within Ecosystems, Module 1, Matter and Energy in Ecosystems	photosynthesis, ecosystem, producers, consumers, dedomposers, food chain, food web, energy pyramid, evaporation, condensation, precipitation, carbon oxygen cycle	Inspire Science Unit 4 Module 1 Test, STEM Module Project, Module Wrap-up
	SC.7.8.4.E Construct an argument supported by evidence that changes to physical or biological components of an exosystem affect populations.	The students will construct an argument supported by evidence that changes to physical or biological components of an exosystem affect populations.	Inspire Science, Unit 4, Inertactions within Ecosystems, Module 1, Matter and Energy in Ecosystems	photosynthesis, ecosystem, producers, consumers, dedomposers, food chain, food web, energy pyramid, evaporation, condensation, precipitation, carbon oxygen cycle	Inspire Science Unit 4 Module 1 Test, STEM Module Project, Module Wrap-up

Earth's Systems	SC.7.13 Earth's Systems		Inspire Science, Unit 3, Earth's Resources, Open Sci Ed. Unit 7.6 Earth's Resources and Human Impact		
	SC.7.13.5 Gather, analyze, and communicate evidence of the flow of energy and cycling of matter associated with Earth's materials and processes.	The students will gather, analyze, and communicate evidence of the flow of energy and cycling of matter associated with Earth's materials and processes.	Inspire Science, Unit 3, Earth's Resources, Module 1 and 2	natural resource, ores, renewable resources, nonrenewable resources, subduction zones, soil, porosity, permeability, groundwater overdraft, material, natural material, synthetic material, by-product,	Inspire Science Unit 3 Module 1 and 2 Test, STEM Module Project, Module Wrap-up
	SC.7.13.5.A Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.	The students will develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.	Inspire Science, Unit 3, Earth's Resources, Module 1 and 2	natural resource, ores, renewable resources, nonrenewable resources, subduction zones, soil, porosity, permeability, groundwater overdraft, material, natural material, synthetic material, by-product,	Inspire Science Unit 3 Module 1 and 2 Test, STEM Module Project, Module Wrap-up
	SC.7.13.5.B Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.	The students will construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.	Inspire Science, Unit 3, Earth's Resources, Module 1 and 2	natural resource, ores, renewable resources, nonrenewable resources, subduction zones, soil, porosity, permeability, groundwater overdraft, material, natural material, synthetic material, by-product,	Inspire Science Unit 3 Module 1 and 2 Test, STEM Module Project, Module Wrap-up
	SC.7.13.5.C Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.	The students will construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.	Inspire Science, Unit 3, Earth's Resources, Module 1 and 2	natural resource, ores, renewable resources, nonrenewable resources, subduction zones, soil, porosity, permeability, groundwater overdraft, material, natural material, synthetic material, by-product,	Inspire Science Unit 3 Module 1 and 2 Test, STEM Module Project, Module Wrap-up
History of Earth	SC.7.14 History of Earth		Inspire Science, Unit 2, The Changing Earth		
	SC.7.14.6 Gather, analyze, and communicate evidence to explain Earth's history.	The students will gather, analyze, and communicate evidence to explain Earth's history.	Inspire Science, Unit 2, The Changing Earth, Module 1 Dynamic Earth	Pangea, continental drift, mid-ocean ridges, ocean trenches, seafloor spreading, magma, lava, plate tectonics, convergent boundary, divergent boundary, transform boundaries, subduction, fault, volcano, rock, volcano	Inspire Science, Unit 2 Module 1 Test, STEM Module Project, Module Wrap-up
	SC.7.14.6.A Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.	The students will construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.	Inspire Science, Unit 2, The Changing Earth, Module 1 Dynamic Earth	Pangea, continental drift, mid-ocean ridges, ocean trenches, seafloor spreading, magma, lava, plate tectonics, convergent boundary, divergent boundary, transform boundaries, subduction, fault, volcano, rock, volcano	Inspire Science, Unit 2 Module 1 Test, STEM Module Project, Module Wrap-up

<p>History of Earth</p>	<p>SC.7.14.6.B Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of past plate motions.</p>	<p>The students will analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of past plate motions.</p>	<p>Inspire Science, Unit 2, The Changing Earth, Module 1 Dynamic Earth</p>	<p>Pangea, continental drift, mid-ocean ridges, ocean trenches, seafloor spreading, magma, lava, plate tectonics, convergent boundary, divergent boundary, transform boundaries, subduction, fault, volcano, rock, volcano</p>	<p>Inspire Science, Unit 2 Module 1 Test, STEM Module Project, Module Wrap-up</p>
	<p>Sc.7,14.6.C Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.</p>	<p>The students will analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.</p>	<p>Inspire Science, Unit 2, The Changing Earth, Module 2, Natural Hazards</p>	<p>weathering, volcano, hurricanes, earthquake, erosion, deposition, Richter magnitude scale, landslide, tsunami, hurricane, tornado, flood, drought,</p>	<p>Inspire Science, Unit 2 Module 2 Test, STEM Module Project, Module Wrap-up</p>

Strand	State Standard	SPS Learning Goals	Unit	Vocabulary	Assessment/Benchmark/ Activity
	SC.8.1.1 Forces and Interactions				
	SC.8.1.1 Gather, analyze, and communicate evidence of forces and interactions.				
	SC.8.1.1.A Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects	Apply Newton's 3rd law to design a solution to a problem involving the motion of two colliding objects. <i>1. Identify how forces impact the motion of objects.</i> <i>2. Compare the effects of balanced/unbalanced forces and the motion (or lack of) they cause.</i> <i>3. Identify how mass and speed impact the interaction of objects in a collision.</i> <i>4. Construct a system model to analyze Newton's third law forces in a collision (force directions).</i>	Inspire Science Unit 2: Energy & Motion p. 1-74. CPO Car & Ramp / Energy Car Investigations	independent variable, dependent variable, constant variable, Newton's 3rd law of motion, action force, reaction force, mass, vector, balanced force, unbalanced force, Newtons, force, collision force, kinetic energy, damage contact force, deform line of best fit, elastic limit, breaking point peak force, free body diagram	Science Task Repository 8.1.1A Task 1 (ISS collision) and Task 2 (Best Packaging Material for a Vase). Inspire Science Unit 2, Module 1 Test
SC.8.1.1.B Develop a model to generate data for iterative testing and modification of a proposed object, tool or process such that an optimal design can be achieved.	Use a model to develop a possible solution that will optimize the design of an object, tool, or process. <i>1. Implement the steps of technological design to design a solution to optimize material selection for objects involved in a collision in order to minimize force in the collision & minimize cost (In a collision, objects with high elasticity and breaking point will withstand the greatest force).</i>	Inspire Science Unit 2: Energy & Motion Stem Module Project "Crash Course" p 4 & 95-102	steps of technological design/ inventing, constraint, trade-off, troubleshoot and redesign	Science Task Repository 8.1.1A Task 2 (Best Packaging Material For A Vase). Inspire Science Unit 2: Energy & Motion Stem Module Project "Crash Course" p 4 & 95-102	

<p>Forces and Interactions</p>	<p>SC.8.1.1.C Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.</p>	<p>Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. <i>1. Identify factors that influence the motion of objects.</i> <i>2. Explain how the acceleration of moving objects is affected by the amount of net force applied and the mass of the object.</i></p>	<p>Inspire Science Unit 2: Energy & Motion p. 1-74 and CPO Car & Ramp / Energy Car Investigations</p>	<p>Newton's 1st law of motion, inertia, speed, Newton's 2nd law of motion, mass, acceleration, velocity, net force, reference point</p>	<p>CPO Car & Ramp investigation</p>
	<p>SC.8.1.1.D Ask questions about data to determine the factors that affect the strength of electrical and magnetic forces.</p>	<p>Determine the factors that affect the strength of electrical and magnetic forces. <i>Ask questions/make predictions in order to: (1). Identify factors that affect magnetic forces (i.e., magnitude of current, distance, orientation, magnetic strength)</i> <i>(2). Identify factors that affect electrical forces (distance, sign, magnitude of charge).</i> <i>(3). Identify the relationship between magnitude (size) of a magnetic force and the magnitude of any electric current (greater number of coils means greater magnitude).</i> <i>(4). Identify and explain the relationship between electricity and magnetism.</i> <i>(5). Identify the relationship between magnitude (size) of a magnetic force and the distance between the interacting objects (more distance means less force; less distance means greater force)</i></p>	<p>OpenSciEd 8.3: Forces at a Distance. Inspire Science Unit 2: Energy & Motion p. 168-260</p>	<p>electrons, magnetic field, current electricity, static electricity, potential difference, resistance, magnetic field, attract, repel, electromagnetism, induced magnetism, current, circuit, ferromagnetic</p>	<p>Science Task Repository 8.1.1.D. Task 1 (Electromagnets) and Task 2 (Metal Detector)</p>

	<p>SC.8.1.1.E Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.</p>	<p>Use the CER method to explain factors that influence the gravitational pull between objects.</p> <ol style="list-style-type: none"> 1. Explain the difference between mass and weight. 2. Recognize that everything on or around Earth is pulled towards Earth's center by gravitational force. 3. Identify and explain the factors that influence gravity. 4. Describe the effects of gravity on Earth (tides) and the effect of gravity on objects in the solar system. 	<p>Openscienced 8.4: Earth In Space Inspire Science Unit 2: Energy & Motion p. 76-94; Inspire Science Unit 4: Humans & Their Place in the Universe p. 120-135</p>	<p>mass, force, inertia, gravity, center of gravity, Newton, air resistance, weight, field, force</p>	<p>Inspire Science Unit 4: Humans & Their Place in the Universe Module 3 Test</p>
	<p>SC.8.1.1.F Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.</p>	<p>1. Conduct and evaluate an investigation to show that forces (fields) exist between objects that are not in contact.</p>	<p>Openscienced 8.3: Forces at a Distance Inspire Science Unit 2: Energy & Motion p. 243-246</p>	<p>magnetic field, magnetism, attract, repel, field, force, positive charge, negative charge, electric field</p>	<p>Openscienced: Forces 8.3 Forces at a Distance. Summative Assessment (Electromagnetic inventions).</p>
	<p>SC.8.2 Waves and Electromagnetic Radiation</p>				
	<p>SC.8.2.2 Gather, analyze and communicate evidence of waves and electromagnetic radiation.</p>				
	<p>SC.8.2.2.A Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.</p>	<p>Model and describe the relationship between energy and the amplitude of a wave.</p> <ol style="list-style-type: none"> 1. Identify characteristics of mechanical waves (wavelength, frequency, and amplitude). 2. Identify the cause/effect relationship between amplitude and energy of a wave. 3. Predict how changing wave variables causes the energy to change. 	<p>Openscienced 8.2: Sound Waves Inspire Science Unit 3: Understanding Waves p. 1-61</p>	<p>longitudinal wave, transverse wave, crest, trough, amplitude, wavelength, frequency, electromagnetic wave, radiation, standing wave, medium, deform</p>	<p>Openscienced 8.2: Sound Waves</p> <ol style="list-style-type: none"> 1. Harp Assessment. 2. Sonic Fire Extinguisher <p>Inspire Science Unit 3, Introduction to Waves Module 1 Test</p>

Waves and Electromagnetic Radiation	<p>SC.8.2.2.B Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.</p>	<p>Create a model to show that light waves can be reflected, absorbed, or transmitted through various materials.</p> <ol style="list-style-type: none"> 1. Identify properties of light. 2. Describe what happens to light when it interacts with matter. 3. Explain how the property of an object impacts the reflection, absorption, or transmission of light. 4. Identify the relationship between amplitude/brightness and frequency/color of a light wave. 	<p>Openscienced 8.4: Earth In Space (lessons 9-12) Inspire Science Unit 3: Understanding Waves p. 62-149. and CPO light & color investigations</p>	<p>reflection, refraction, absorbed, scattered, transparent, translucent, opaque, medium</p>	<p>Openscienced 8.4: Earth In Space Fishing Lure Phenomena Assessment. Inspire Science Unit 3, Module 2 Light Test</p>
	<p>SC.8.2.2.C Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.</p>	<p>Use experimental and technical information as evidence to support the claim that digital signals are more reliable than analog signals.</p> <ol style="list-style-type: none"> 1. Identify specific features that make digital transmission of signals more reliable than analog transmission of signals. 2. Describe how the digitization of that technology has advanced science and scientific investigations (e.g., digital probes, including thermometers and pH probes; audio recordings). 	<p>Inspire Science Unit 3: Understanding Waves, Module 3 p. 150-199</p>	<p>wireless communication, signal, digital, analog</p>	<p>Inspire Science Unit 3, Module 3 Information Technologies Test</p>
	<p>SC.8.4 Energy</p>				
	<p>SC.8.4.3 Gather, analyze, and communicate evidence of energy.</p>				

Energy	<p>SC.8.4.3.A Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.</p>	<p>Use mathematical and graphical data to describe the relationships between kinetic energy, mass, and speed of an object.</p> <ol style="list-style-type: none"> 1. Define kinetic energy and identify factors that affect the kinetic energy of an object. 2. Construct a graphical display showing the relationship between kinetic energy and mass as linear. 3. Construct a graphical display showing the relationship between kinetic energy and speed as nonlinear. 4. Identify proportional relationships of kinetic energy and the mass of an object by analyzing a graphical display/data. 5. Identify proportional relationships of kinetic energy and the speed of an object using data. 6. Interpret data to compare the relationship of kinetic energy and mass to the relationship of speed and kinetic energy. 	<p>Inspire Science Unit 2: Energy & Motion p. 108-160</p>	<p>mass, speed, velocity, acceleration, speed, energy, kinetic energy, potential energy, linear, nonlinear, porpotional relationship,</p>	<p>Science Repository 8.4.3 A Kinetic Energy Task 1 (Dunk Tank) and Task 2 (Space debris vs Speed). Inspire Science Unit 2, Module 2 Test</p>
	<p>SC.8.4.3.B Develop a model to describe that when the arrangement of objects interacting at a distance changes, then different amounts of potential energy are stored in the system.</p>	<p>Develop a model of how distance between objects affects energy stored in a system.</p> <ol style="list-style-type: none"> 1. Define potential energy and identify the factors that influence the potential energy of an object. 2. Model and describe the factors that influence the gravitational potential energy of objects. 	<p>Opensci 8.3: Forces at a Distance. Inspire Science Unit 2: Energy & Motion, Module 2</p>	<p>potential energy, gravitational potential energy, elastic potential energy, work, force, magnetic field, electrical field</p>	<p>Science Repository 8.4.3B Potential Energy Task 2 (Magnetic Rollercoaster). Inspire Science Unit 2, Module 2 Test</p>
	<p>SC.8.9 Heredity: Inheritance and Variation of Traits</p>				
	<p>SC.8.9.4 Gather, analyze, and communicate evidence of the inheritance and variation of traits.</p>				

Heredity: Inheritance and Variation of Traits

SC.8.9.4.A Develop and use a model to describe why structural changes to genes (mutations) may result in harmful, beneficial, or neutral effects to structure and function of organisms

Model and describe how mutations occur and identify mutations as harmful, beneficial, or neutral.

1. Identify and define traits and their characteristics.
2. Develop a model that accurately represents the expression of genes as traits.
3. Describe the relationship between genes, chromosomes, and proteins. (Identify proteins as the link between gene structure to trait structure and function).
4. Use a model of a genetic code to show how mutation occurs.
5. Categorize the effects of mutations as beneficial, harmful, or neutral changes to protein function

Openscienced 8.5: Genetics
 Inspire Science
 Unit 1: Change Over Time p.54-115

trait, heredity, genetics, genotype, phenotype, dominant, recessive, genes, chromosomes, DNA, mutation, sexual reproduction, asexual reproduction

Openscienced 8.5 Genetics 1. Model of big muscles in an animal
[Science Task Repository 8.9.4.A Task 1 \(Albinism & Brown eyes\) and Task 2 \(Polydactyly & DNA Sequencing\)](#)

	<p>SC.8.9.4.B Gather and synthesize information about technologies that have changed the way humans influence inheritance of desired traits in organisms.</p>	<p>Describe technologies that allow humans to influence the inheritance of desired traits.</p> <ol style="list-style-type: none"> 1. Obtain information that involves ways humans impact the inheritance of traits. 2. Obtain and/or use multiple sources to support evidence that artificial selection can be used to produce desirable traits in offspring. 3. Evaluate multiple sources and use evidence to explain how humans can maximize the inheritance of desirable traits. 4. Apply evidence from sources to show knowledge of genetics to determine and explain the cause of the inheritance of certain desirable or undesirable traits. 5. Evaluate information to determine the cause and effect relationship between technologies and the resulting characteristics in an organism. 6. Assess the credibility of information provided and, using prior knowledge, determine if information is accurate and free from bias. 	<p>Openscienced 8.5: Genetics Inspire Science Unit 1: Change Over Time p. 102-116</p>	<p>artificial selection, selective breeding, genetic engineering, genetically modified organism (GMO)</p>	<p>Openscienced 8.5 Genetics 1. Goldfish Assessment 2. Self-Assessment (Group research project asexually reproducing organism) Science Task Repository 8.9.4.B. Task 1 (Eggplant variations/ GMO) and Task 2 (Wormwood & Malaria)</p>
	<p>SC.8.10 Natural Selection and Adaptations</p> <p>SC.8.10.5 Gather, analyze, and communicate evidence of natural selection and adaptations.</p>				

Natural Selection and Adaptations	<p>SC.8.10.5.A Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumptions that natural laws operate today as in the past.</p>	<p>Analyze the fossil record to explain how life on Earth has changed through time and that the processes that occur today also occurred in the past.</p> <ol style="list-style-type: none"> 1. <i>Identify how fossils form.</i> 2. <i>Analyze rock strata and fossils to determine the relative age of the rock or fossils.</i> 3. <i>Infer changes in Earth's climate utilizing fossils.</i> 4. <i>Identify how the fossil record can be used to show how Earth and life on earth has changed over time.</i> 5. <i>Define the law of uniformitarianism.</i> 	<p>Inspire Science Unit 1: Change Over Time p. 1-53</p>	<p>law of uniformitarianism, extinction, fossil record, adaptation, anatomical, homologous structure</p>	<p>Science Task Repository 8.10.5.A. Task 1 (Rock layers & Index Fossils) and Task 2 (Horse Evolution)</p>
	<p>SC.8.10.5.B Apply scientific ideas to construct an explanation for the anatomical similarities and differences among and between modern and fossil organisms to infer evolutionary relationships.</p>	<p>Explain anatomical similarities and differences between modern and fossil organisms and infer evolutionary relationships.</p> <ol style="list-style-type: none"> 1. <i>Describe changes in the level of complexity of anatomical structures in organisms.</i> 2. <i>Use anatomical features of an organism to infer similarities among other organisms.</i> 	<p>Opensci 8.6: Natural Selection & Common Ancestry Inspire Science Unit 1: Change Over Time p. 127-169</p>	<p>anatomical, homologous, level of complexity</p>	<p>Inspire Science Unit 1, Module 3 Evidence of Evolution Test</p>
	<p>SC.8.10.5.C Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individual's probability of surviving and reproducing in a specific environment.</p>	<p>Use evidence to explain how natural selection impacts the survival rate of organisms.</p> <ol style="list-style-type: none"> 1. <i>Describe how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing.</i> 	<p>Opensci 8.6: Natural Selection & Common Ancestry Inspire Science Unit 1: Change Over Time p. 62-125</p>	<p>genetic variation, survival rate, population, dominant trait, recessive trait, genotype, phenotype, Punnett square, probability, homozygous, heterozygous</p>	<p>Opensci 8.6: Natural Selection & Common Ancestry 1. Small group case study (lesson 7) Inspire Science Unit 1, Module 2 Natural Selection and Adaptations Test</p>

	<p>SC.8.10.5.D Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.</p>	<p>Use mathematical representations to explain how natural selection impacts the specific traits in a population over time.</p> <ol style="list-style-type: none"> 1. <i>Identify multiple cause-and-effect relationships between environmental conditions and natural selection in a population.</i> 2. <i>Use mathematical representations that display a measurable change in selected traits in a population over time to support scientific conclusions.</i> 3. <i>Use mathematical representations to support an explanation of how a specific selected change in an environmental condition has led to an observed change in traits in a population over time</i> 4. <i>Use mathematical representations to describe cause and effect relationships with phenomena in relation to the distribution of traits in a population over time.</i> 5. <i>Analyze and interpret graphs that compare the changing environmental conditions and survival rate.</i> 6. <i>Analyze mathematical and/or graphic representations as evidence to support the explanations that through natural selection, traits that better support survival and reproduction are more common in a population than those traits that are less effective.</i> 	<p>Openscienced 8.6: Natural Selection & Common Ancestry Inspire Science Unit 1: Change Over Time p. 62-125 & 139-143</p>	<p>natural selection, population, ecosystem, environmental condition, survival rate</p>	<p>Openscienced 8.6: Natural Selection & Common Ancestry 1. Green Anole Lizard Explanation Science Task Repository 8.10.5.D. Task 1 (Nebraska Sandhills Mice) and Task 2 (Horse Evolution)</p>
	<p>SC.8.11 Space Systems</p>				
	<p>SC.8.11.6 Gather, analyze and communicate evidence of the interactions among bodies in space.</p>				

Space Systems	<p>SC.8.11.6.A Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.</p>	<p>Use a model to explain the relationship between motion of objects in the solar system and the phenomena of day, year, eclipses, phases of the moon, and seasons.</p> <ol style="list-style-type: none"> 1. <i>Use a model to explain how the sun, moon, and earth act as a system.</i> 2. <i>Use a model to describe and make predictions of the cyclic patterns of lunar phases.</i> 3. <i>Use a model to describe the seasonal patterns of Earth.</i> 4. <i>Use a model to describe the causation of solar/lunar eclipses.</i> 	<p>Opensci ed 8.4: Earth In Space Inspire Science Unit 4: Humans & Their Place in the Universe p. 52-119</p>	<p>rotation, revolution, axis, phase, waxing, waning, lunar eclipse, solar eclipse, season, solstice, equinox, pattern, change in perspective, elevation, Polaris, daily (or diurnally), yearly (or annually), orbit, scatter, reflect, transmit, refract, transit, solar system, gravitational forces, accretion, galaxy, universe</p>	<p>Inspire Science Unit 4: Humans & Their Place in the Universe Module 2 The Sun-Earth-Moon System Test. Science Task Repository 8.11.6.A Task 1 (Moon Phases) and Task 2 (Lunar and Solar Eclipse)</p>
	<p>SC.8.11.6.B Develop and use a model to describe the role of gravity in the motions within the galaxy and the solar system.</p>	<p>Use a model to describe the effects of gravity on Earth and other objects in space.</p> <ol style="list-style-type: none"> 1. <i>Use a model to explain how gravity helps keep objects in orbit.</i> 2. <i>Explain why tides occur.</i> 3. <i>Identify how mass and distance impact the pull of gravity on objects.</i> 4. <i>Identify the difference between mass and weight.</i> 	<p>Opensci ed 8.4: Earth In Space Inspire Science Unit 4: Humans & Their Place in the Universe p. 120-135</p>	<p>mass, weight, gravity, inertia, Newton's first law of motion, tides, neap tide, spring tide,</p>	<p>Inspire Science Unit 4: Humans & Thier Place in the Universe Module 3 Test</p>

	<p>SC.8.11.6.C Analyze and interpret data to determine scale properties of objects in the solar system.</p>	<p>Analyze and interpret data to determine scale properties of objects in the solar system.</p> <ol style="list-style-type: none"> 1. Identify technology used to study objects in the solar system and how the advancement in technology and advancement in science have increased our knowledge of objects in our solar system. 2. Compare and contrast properties of objects in the solar system. 3. Use models and mathematical thinking to demonstrate an understanding of scale properties. 4. Use an appropriate scale model to represent relative size and distance of objects in the solar system. 5. Analyze and interpret data to determine similarities and differences between objects with different scales. 	<p>Openscienced 8.4: Earth In Space Inspire Science Unit 4: Humans & Their Place in the Universe p. 141-169</p>	<p>planet, satellite, terrestrial, comet, Oort cloud, Keiper belt, asteroid, meteoroid, meteor, meteorite, astronomical unit, light year</p>	<p>Science Task Repository 8.11.6.C Task 1 (Classify New Planet) and Task 2 (Scale Model of NEO)</p>
	<p>SC.8.14 History of Earth</p>				
	<p>SC.8.14.7 Gather, analyze, and communicate evidence to explain Earth's history.</p>				

<p>History of Earth</p>	<p>SC.8.14.7.A Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize earth's 4.6-billion-year-old history.</p>	<p>Use evidence from rock layers to explain how the geologic time scale is used to organize earth's 4.6 billion year old history.</p> <ol style="list-style-type: none"> <i>1. Apply scientific reasoning to sequence relative rock age in a model of rock strata.</i> <i>2. Interpret a model of geologic events based on processes occurring both instantly and over long periods of time.</i> <i>3. Interpret a model of geologic event (s) inferring how rock strata may have been altered through forces resulting in a change of the rock strata such as folding, faulting, and/or intrusion.</i> <i>4. Construct an explanation using evidence, patterns, and reasoning that geologic principles/process that occur today also occurred in the past.</i> <i>5. Develop a model to describe the sequence of major events in Earth's history.</i> 	<p>Inspire Science Unit 1: Change Over Time p. 1-53</p>	<p>fossil, geologic time, era, relative dating, absolute dating, radioactive decay, half-life index fossil, strata, intrusion, extrusion, unconformity, superposition, uniformitarianism</p>	<p>Science Task Repository 8.14.7.A. Task 1 (Ashfall Fossil Beds), Task 2 (Grand Canyon), Task 3 (Paleomaps), and Task 4 (Trilobite Anatomy)</p>
-------------------------	---	--	---	--	--

Strand	State Standard	Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
Space Systems	<p>SC.HS.11 Space Systems</p>				
	<p>SC.HS.11.1 Gather, analyze, and communicate evidence to defend that the universe changes over time.</p>				
	<p>SC.HS.11.1.A Develop a model based on evidence to illustrate the stages of stars, like the sun, and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.</p>	<p>Recognize or recall specific vocabulary *Describe how a star's radiation varies over the life span of the star *Describe how the process of nuclear fusion in the sun's core creates energy *Describe how energy from the sun reaches Earth</p>	<p>SE/TE: Figure 12 Structure of the Sun, 685 Nuclear Fusion, 689 Earth & Space, Solar Variability and Climate Change, 691 Standardized Test Prep (Questions 3–6), 697 Stellar Evolution, 707–709 Figure 10, 709 Active Art, Lives of Stars, 709 Figure 11, Stellar Evolution, 710 Burnout and Death, 710–712 TE Only: Build Science Skills: Use Analogies, 707 Facts and Figures, 709 Facts and Figures, 710 Build Science Skills: Use Analogies, 712; Reteach, 714 25.5 Assessment: Questions 5–7, 714</p>	<p>energy, life span, lifetime, mass, non-cyclic, nuclear fusion, radiation, release, solar flare, star, sun's core, sun's radiation, sunspot cycle, transfer, variation</p>	<p>Curricular resources and teacher created assessments.</p>
<p>SC.HS.11.B Construct and explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.</p>	<p>*Recognize or recall specific vocabulary *Summarize the Big Bang theory *Describe the evidence that supports the Big Bang theory</p>	<p>SE/TE: Earth's Place in the Universe, 6 Expanding Universe, 718–719 The Big Bang, 720–721 Standardized Test Prep, 727 TE Only: The Birth of the Universe, 698C–698D Address Misconception, 720</p>	<p>age of the universe, astronomical, Big Bang theory, composition, cosmic microwave background, expand, galaxy, gas, helium, history of the universe, interstellar, light year, radiation, red shift, spectrum, star, stellar</p>	<p>Curricular resources and teacher created assessments.</p>	

	<p>SC.HS.11.C Communicate scientific ideas about the way stars, throughout their stellar stages, produce elements.</p>	<p>*Recognize or recall specific vocabulary *Describe how the process of nucleosynthesis creates different elements *Describe how the process of nucleosynthesis varies due to the mass of the star and its life stage</p>	<p>SE/TE: Figure 4 Materials That Formed the Planets, 648 Hertzsprung-Russel Diagram, 704–706 Main Sequence Stage, 708 Red Giant Stage, 709 Death of Massive Stars, 711 Nucleosynthesis, 712 Stellar Remnants, 712–714 Analyze Data, 726</p>	<p>element, life cycle, nucleosynthesis, star composition, star destruction, star formation, star type, star temperature</p>	<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.11.D Use mathematical or computational representations to predict the motion of orbiting object in the solar system.</p>	<p>*Recognize or recall specific vocabulary *Describe how objects orbit around other objects *Describe the key parts of Newton's gravitational law of orbital motions</p>	<p>SE/TE: Earth-Sun Relationships, 481–482 Ancient Greeks, 615–616 Figure 4, Retrograde Motion, 617 Birth of Modern Astronomy, 617–621 Johannes Kepler, 618 Table 1, Period of Revolution and Solar Distances of Planets, 618 The Solar System Model Evolves, 619 Sir Isaac Newton & Universal Gravitation, 620 22.1 Assessment, 621 Motions of Earth, 622–627 Figure 13: Sidereal Day, 623 Inquiry: Modeling Synodic and Sidereal Months, 636–637 TE Only: Common Themes, 612C Visualizing Planetary Orbits, 618</p>	<p>attraction, gravitational, moon, motion, Newtonian gravitational laws, orbit, orbital motion, planet, satellite, solar system, space probe</p>	<p>Curricular resources and teacher created assessments.</p>
	<p>(SC.HS.12) Weather and Climate (SC.HS.12.2) Gather, analyze, and communicate evidence to support that Earth's climate and weather are influenced by energy flow through Earth systems.</p>				<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.12.2.A Construct an explanation based on evidence for how the sun's energy moves among Earth's systems.</p>		<p>SE/TE: Energy Transfer as Heat, 483–485 Figure 9: Energy Transfer as Heat, 483 What Happens to Solar Radiation? 486–487 How Earth Works: Earth's Atmosphere, 494–495 Inquiry Exploration Lab: Heating Land and Water, 496–497 Powered By the Sun, 588 Inquiry Lab: Quick Lab: Observing How Land and Water Absorb and Release Energy, 590 Climate Changes, 600–603 Solar Variability and Climate Change, 691</p>		<p>Curricular resources and teacher created assessments.</p>

Weather and Climate	<p>SC.HS.12.2.B Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.</p>	<p>*Recognize or recall specific vocabulary *Describe the flow of energy into and out of Earth's systems. * Describe the relationship between energy in Earth systems and change in climate. *Describe how changes in climate may occur over different lengths of time.</p>	<p>SE/TE: Ancient Climates, 250–251 Quaternary Period, 384–385 Ocean Currents and Climate, 450 Energy Transfer as Heat, 483–485 Figure 9: Energy Transfer as Heat, 483 What Happens to Solar Radiation? 486–487 How Earth Works: Earth's Atmosphere, 494–495 Inquiry Exploration Lab: Heating Land and Water, 496–497 Water's Changes of State, 504–506 Factors Affecting Wind, 534–536 El Nino and La Nina, 546–547 Powered By The Sun, 588 Inquiry Lab: Quick Lab: Observing How Land and Water Absorb and Release Energy, 590 Climate Changes, 600–603 Solar Variability and Climate Change, 691</p>	<p>biosphere, circulation, climate change, sea level, solar output, surface temperature</p>	<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.12.2.C Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate and scale of global or regional climate changes.</p>		<p>SE/TE: Temperature Controls, 488–492 Inquiry Exploration Lab, 550 Circulation in the Atmosphere, 591 Natural Processes That Change Climate, 600–601 Human Impact on Climate, 602–603 Inquiry-Human Impact of Climate and Weather, 606–607 TE Only: Integrate Biology, 197 Common Themes & The History of Climate, 586C</p>		<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.12.2.D Evaluate the validity and reliability of past and present models of Earth conditions to make projections of future climate trends and their impacts.</p>		<p>SE/TE: Ancient Climates, 250–251 Fossils and Past Environments, 345 Seafloor Sediment and Climate Data, 409 Ocean Currents and Climate, 450 Inquiry Try It!: Global Climate Change: What Is Causing It?, 587 Factors That Affect Climate, 588–591 Figure 9: Global Climates, 594–595 Natural Processes that Change Climate, 600–601 Human Impact on Climate, 602–603 TE Only: Integrate Biology, 345 The History of Climate, 586C–586D</p>		<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.13 Earth's Systems</p>				<p>Curricular resources and teacher created assessments.</p>

Earth's Systems	<p>SC.HS.13.3 Gather, analyze, and communicate evidence to defend the position that Earth's systems are interconnected and impact one another.</p>				Curricular resources and teacher created assessments.
	<p>SC.HS.13.3.A Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.</p>	<p>*Recognize or recall specific vocabulary *Describe how changes to the Earth's surface result in changes to other Earth systems</p>	<p>SE/TE: What Is a System, 18 Earth As a System, 19–20 People and the Environment, 20–21 Mechanical Weathering, 126–128 Soil Erosion, 140–142 Triggers of Mass Movements, 144–145 Types of Mass Movements, 145–147 Wells 173–174 Figure 17 & Figure 18, 174–175 Folds, 312–313 Continental Accretion, 324–325 Inquiry Quick Lab: Rates of Mountain Building, 323 Earth & Its Systems: Mountain Building Away from Plate Margins, 326–327 Factors That Affect Climate, 588–591 Natural Processes that Change Climate, 600–601 Human Impact on Climate, 602–603</p>	<p>atmospheric change, climate, erosion, feedback, feedback effect, glacial ice, greenhouse gas, groundwater recharge, humidity, runoff, sediment, surface, wetland</p>	Curricular resources and teacher created assessments.
	<p>SC.HS.13.B Develop a model based on evidence of Earth's interior to describe the cycling of matter.</p>	<p>Recognize or recall specific vocabulary *Describe the structure of the Earth's interior *Describe how matter cycles by thermal convection</p>	<p>SE/TE: The Rock Cycle, 67–68 The Carbon Cycle, 85 Seismic Waves, 222–223 The Process of Sea-Floor Spreading, 256–257 Figure 10: Sea-Floor Spreading and Subduction, 257 What Causes Plate Motions? 270 Plate Motion Mechanisms, 271 Figure 2.3, Whole Mantle Convection, 271 TE Only: Teacher Demo: Seismic Waves, 223 Build Science Skills, Use models, 270</p>	<p>density, magnetic field, mantle, mantle convection, plate tectonics, pressure, seismic wave</p>	Curricular resources and teacher created assessments.
	<p>SC.HS.13.C Construct an argument based on evidence to explain the multiple processes that cause Earth's plates to move.</p>		<p>SE/TE: Layers Defined by Composition, 234-235 The Process of Sea-Floor Spreading, 256-257 Figure 10: Sea-Floor Spreading and Subduction, 257 Divergent Boundaries, 264 Convergent Boundaries, 265-267 Transform Fault Boundaries, 268 What Causes Plate Motions?, 270 Plate Motion Mechanisms, 271 TE Only: Teacher Demo, Observing Plate Movement, 284</p>		Curricular resources and teacher created assessments.

	<p>SC.HS.13.D Plan and conduct an investigation of the properties of water and their effects on Earth materials, surface processes, and groundwater systems.</p>		<p>SE/TE: Inquiry Try It!, 125 Mechanical Weathering, 126–132 Inquiry Exploration Lab: Effect of Temperature on Chemical Weathering, 150 TE Only: Build Science Skills, 195</p>		<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.13.E Develop a quantitative model to describe the cycling of carbon and other nutrients among the hydrosphere, atmosphere, geosphere, and biosphere, today and in the geological past.</p>	<p>*Recognize or recall specific vocabulary *Describe how carbon cycles through the hydrosphere, atmosphere, geosphere, and biosphere *Describe the relationship between carbon and living organisms</p>	<p>SE/TE: Earth's Major Spheres, 7–9 Mineral Groups, 38 The Carbon Cycle, 85 Earth's Blanket of Air, 110 Composition of the Atmosphere, 477–478 Human Impact on Climate, 602–603 TE Only: Earth Science Refresher, 186C</p>	<p>atmosphere, biogeochemical, biosphere, carbon, carbon cycle, geosphere, hydrosphere</p>	<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.14 History of Earth</p>				<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.14.4 Gather, analyze, and communicate evidence to interpret Earth's history.</p>				<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.14.4.A Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the differences in age, structure, and composition of crustal and sedimentary rocks.</p>	<p>*Recognize or recall specific vocabulary *Summarize the theory of plate tectonics *Describe the relationship between movements of Earth's crust and the ages of crustal rock</p>	<p>SE/TE: Continental Drift, 248–253 Sea Floor Spreading, 254–260 Earth's Moving Plates, 261–263 Divergent Boundaries, 264 Convergent Boundaries, 265–267 Transform Fault Boundaries, 268 What Causes Plate Motions?, 270–271 Paleomagnetism and the Ocean Floor, 272–273 Visual Summary, Figure 5, 282–283 Convergent Boundary Mountains, 320–322 Inquiry Lab: Rates of Mountain Building, 323 11.3 Assessment, 325 Earth & Its Systems, 326–327 Mid-Ocean Ridges, 405 Seafloor Sediment and Climate Data, 409 Stem Activity: Plate Tectonics, 730 TE Only: Integrate History, 256 Teacher Demo, Observing Plate Movement, 284</p>	<p>Alfred Wegener, continental crust, crustal deformation, crustal plate movement, mid-ocean ridge, mountain building, oceanic crust, plate boundary, plate tectonics, seafloor spreading</p>	<p>Curricular resources and teacher created assessments.</p>

History of Earth	<p>SC.14.4.B Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to reconstruct Earth's formation and early history.</p>	<p>*Recognize or recall specific vocabulary *Describe key events from Earth's formation and early history</p>	<p>SE/TE: Formation of Earth, 4–5 Discovering Earth's Composition Uniformitarianism, 336 Relative Dating, 337–340 Correlation, 340–341 12.1 Assessment, 341 The Fossil Record, 344–345 Dating with Radioactivity, 347–351 Inquiry Try It! What are Fossils? 363 Inquiry Exploration Lab: Modeling the Geologic Time Scale, 386–387 The Lunar Surface, 631 Lunar History, 633–634 The Planets: An Overview, 645–646 Formation of the Solar System, 647–648 TE Only: Use Visuals: Figure 14, 348 Build Science Skills: Apply Concepts, 348 Relate Cause and Effect, 350 Before You Teach Earth's History, 362C–362D</p>	<p>composition, Earth's formation, impact cratering, meteorite, mineral, moon rock, planetary, radiometric dating, record, solar system</p>	<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.14.4.C Develop a model to illustrate how Earth's internal and surface processes operate over time to form, modify, and recycle continental and ocean floor features.</p>	<p>*Recognize or recall specific vocabulary *Describe how different land and ocean-floor features form *Describe how constructive and destructive forces work to form land and ocean-floor features</p>	<p>SE/TE: Earth's Major Spheres, 7–9 Earth's Changing Surface, 9–10 The Rock Cycle, 67–69 Formation of Sedimentary Rocks, 76 Formation of Mineral Deposits, 98–100 Landscapes Shaped by Wind, 203–205 Layers Defined by Composition, 233–234 Layers Defined by Physical Properties, 234–235 Evidence for Continental Drift, 249–250 Figure 10 Sea-Floor Spreading and Subduction, 257 Earth's Moving Plates, 261–263 Divergent Boundaries, 264 Convergent Boundaries, 265–267 Transform Fault Boundaries, 268 Earth & Its Systems: Plate Tectonics into the Future, 269 Plate Motion Mechanisms, 271 Inquiry: Exploration Lab? Paleomagnetism and the Ocean Floor, 272–273 Volcanoes and Plate Tectonics, 280–285 Other Volcanic Landforms, 292–293 Intrusive Igneous Activity, 295–297 Principle of Isostasy, 310–311 Uniformitarianism, 336 Relative Dating, 337–341 Precambrian Time, 364–366 Ocean Floor Features, 401–404 Mid-Ocean Ridges, 405–406 Explaining Coral Atolls—Darwin's Hypothesis, 406 TE Only: Earth Science Refresher, 306C</p>	<p>coastal erosion, constructive, continental, destructive, geologic time scale, geological dating, internal process, molten rock, orogeny, plateau, ridge, spatial scale, tectonic uplift, temporal scale, volcanism, weathering</p>	<p>Curricular resources and teacher created assessments.</p>

	<p>SC.HS.14.4.D Construct an argument based on evidence to validate coevolution of Earth's systems and life on Earth.</p>	<p>*Recognize or recall specific vocabulary *Describe the relationship between the biosphere and other Earth systems</p>	<p>SE/TE: People and the Environment, 20–21 Soil Formation, 135–137 Discovering Earth's History, 336–341 Types of Fossils, 342–343 The Fossil Record, 344–346 Inquiry-Fossil Occurrence and the Age of Rocks, 356–357 How Earth Works, 438–439 World Soils, 755–757</p>	<p>atmosphere, biosphere, coastline, coral, deposition, reef, weathering</p>	<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.15 Sustainability</p>				<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.15.5 Gather, analyze, and communicate evidence to describe the interactions between society, environment, and economy.</p>				<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.15.5.A Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.</p>	<p>*Recognize or recall specific vocabulary *Describe the relationship between the availability of natural resources, natural hazards, and changes in climate and human activity</p>	<p>SE/TE: Environmental Problems, 21–22 Freshwater Pollution, 108–109 Land Resources, 111–112 Protecting Resources, 113–116 Assessment 4.4, 117 Earth and Its Resources, 117 Environmental Problems Associated With Groundwater, 174–176 Earthquake Hazards, 228–232 Tsunamis, 230 Assessment 8.3, 232 Tornado Warnings, 574 How Earth Works, 578–579 Critical Thinking, 584 Concepts in Action, 584 TE Only: Integrate Biology, 197 Integrate Biology, 317 Integrate Social Studies, 574 The History of Climate, 586C–586D</p>	<p>availability, climate, drought, earthquake, erosion, fertile, flood, fossil fuel, fresh water, hurrican, natural hazard, river delta, sea level, tsunami, volcanic eruption</p>	<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.15.5.B Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.</p>	<p>*Recognize or recall specific vocabulary *Summarize competing design solutions for developing, managing, and utilizing energy and mineral resources *Describe the process of using cost-benefit ratios to evaluate design solutions</p>	<p>SE/TE: Petroleum and Natural Gas, 96 Tar Sands and Oil Shale, 97 Protecting Resources, 113–116 Environmental Problems Associated with Groundwater, 174–176 Gas Hydrates, 411 Manganese Nodules, 413</p>	<p>conservation, cost0benefit ration, extraction, harvesting of resources, mining, natural gas, oil shale, petroleum, tar sand</p>	<p>Curricular resources and teacher created assessments.</p>

Sustainability	<p>SC.HS.15.5.C Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.</p>	<p>*Recognize or recall specific vocabulary *Describe the relationship between natural resources, human populations, and biodiversity</p>	<p>SE/TE: Protecting Resources, 113–116 Environmental Problems Associated with Groundwater, 174–176</p>	<p>consumption, extraction management, natural resource, per-capita, sustainability, urban planning, waste management</p>	<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.15.5.D Evaluate or refine a technological solution that increases positive impacts of human activities on natural systems.</p>	<p>*Recognize or recall specific vocabulary *Summarize a technological solution for reducing the impact of human activities *Summarize the impacts of human activity on natural systems</p>	<p>SE/TE: People and the Environment, 20–21 Freshwater Pollution, 108–109 Land Resources, 111–112 Keeping Water Clean and Safe, 114 Caring for Land Resources, 115–116 Earth and Its Resources, 117 Inquiry Exploration Lab: Finding Products That Best Conserve Resources, 118–119 Environmental Problems Associated With Groundwater, 174–176</p>	<p>areal, atmosphere, biomass, ozone, pollutant, recycle, resource, reuse</p>	<p>Curricular resources and teacher created assessments.</p>
	<p>SC.HS.15.5.E Evaluate a solution to a complex real-world problem based on prioritized criteria and tradeoffs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.</p>		<p>SE/TE: Tar Sands and Oil Shale, 97–98 Alternative Energy Solutions, 102–107 Reading Checkpoint, 103 Assessment 4.2, 107 Stem Activity: The Bycatch Problem, 728 Stem Activity: Space Weather Readiness, 731</p>		<p>Curricular resources and teacher created assessments.</p>

	<p>SC.HS.15.F Use a computational representation to illustrate the relationships among Earth systems and the degree to which those relationships are being modified due to human activity.</p>	<p>*Recognize or recall specific vocabulary *Describe the relationships between hydrosphere, atmosphere, biosphere, and geosphere *Describe how the relationships between Earth's systems are modified due to human activity</p>	<p>SE/TE: Inquiry Exploration Lab, 210–211 How Earth Works, 494–495 Figure 3, Climate Data for Two Cities, 589 Figure 15, Changes in CO2 Levels, 602 Inquiry Exploration Lab, 606–607</p>	<p>acidification, atmosphere, biomass, biosphere, carbon dioxide, geosphere, hydrosphere</p>	<p>Curricular resources and teacher created assessments.</p>
--	---	--	--	--	--

Strand	State Standard	Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
	<p>Generate and interpret mathematical and graphical representations to describe the relationships between position, velocity, acceleration and time.</p>	<p>*I can identify differences between scalar and vector quantities and use them appropriately when asked. *I can select the right algebraic equation to determine an unknown variable using our speed equations. *I can calculate average speed/velocity if I am not given a distance.*Recognize or recall specific vocabulary including: Scalar, vector, relative motion, distance, displacement, speed, velocity, acceleration, terminal velocity I can identify distance, speed, or time within a problem. I can calculate speed, velocity, and acceleration using a given formula.</p>	<p>Glencoe-Physical Science Unit 1: Chapter 1 Unit 1: Chapter 2</p>	<p>graph, independent variable, dependent variable, direct relationship, inverse relationship, standard units, dimensional analysis, Scalar, vector, relative motion, distance, displacement, speed, velocity, acceleration, terminal velocity</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
<p>Forces and Interactions</p>	<p>SC.HS.1 Forces and Interactions</p>				
	<p>SC.HS.1.1 Gather, analyze, and communicate evidence of forces and interactions.</p>		<p>Glencoe-Physical Science Unit 1: Chapter 3</p>	<p>force, Newton, net force, friction, air resistance, gravity, gravitational force, inertia, mass, weight, momentum, Law of Conservation of Momentum, Newton's 1st Law, Newton's 2nd Law, normal force</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>HS.1.1.A Analyze data to support the claim that Newton's Second Law of Motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.</p>	<p>*I can identify the FN, Ff, Fg, Fapp using vector showing their interactions on a Free-Body-Diagram *I can calculate Net Force, and determine if an object is balanced or unbalanced, *I can qualitatively describe how friction changes with the surface., *I can calculate the weight of different objects.</p>	<p>Glencoe-Physical Science Unit 1: Chapter 3</p>	<p>force, velocity, acceleration, net force, friction, air resistance, gravity, gravitational force, inertia, mass, weight, momentum, Law of Conservation of Momentum, Newton's 2nd Law, normal force</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HS.1.1.B Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.</p>	<p>*I can conduct an analysis of momentum of pairs of objects. *I can describe how the transfer of momentum works. *I can select the right algebraic equation to determine an unknown variable using our momentum and force equations. I can use vector diagrams correctly to show magnitude and direction of collision interactions.</p>	<p>Glencoe-Physical Science Unit 1: Chapter 2</p>	<p>force, velocity, acceleration, net force, friction, air resistance, gravity, gravitational force, inertia, mass, weight, momentum, Law of Conservation of Momentum, Newton's 2nd Law, normal force</p>	<p>Curricular resources and/or teacher created assessment(s)</p>

	<p>SC.HS.1.1.C Apply science and engineering idea to design, evaluate, and refine a device that minimized the force on a macroscopic object during a collision.</p>	<p>*I can conduct an analysis of momentum of pairs of objects. *Describe a collision in terms of momentum change and impulse.</p>	<p>Glencoe-Physical Science Unit 1: Chapter 3 Unit 2: Chapter 4</p>	<p>force, velocity, mass net force, friction, air resistance, inertia, momentum, Law of Conservation of Momentum, Newton's 1st Law, Newton's 2nd Law, Newton's 3rd Law</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HS.1.1.D Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.</p>		<p>Glencoe-Physical Science Unit 1: Chapter 3 Unit 2: Chapter 6</p>	<p>force, velocity, acceleration, net force, gravity, gravitational force, inertia, mass, weight, electric field, magnetic field</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HS.1.1.E Plan and conduct an investigation to provide evidence that an electrical current can produce a magnetic field and that a changing magnetic field can produce an electrical current.</p>		<p>Glencoe-Physical Science Unit 2: Chapter 6 Unit 2: Chapter 7</p>	<p>charge, induction, current, resistance, voltage power, electric field, magnetic field, magnetic pole, magnetic domain, electromagnet, generator, transformer, turbine</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HS.2 Waves and Electromagnetic Radiation</p>				
	<p>SC.HS.2.2 Gather, analyze, and communicate evidence of the interactions of waves.</p>		<p>Glencoe-Physical Science Unit 3: Chapter 9 Unit 3: Chapter 10 Unit 3: Chapter 11 Unit 3: Chapter 13</p>	<p>longitudinal wave, mechanical wave, medium, transverse wave, amplitude, compression, crest, frequency, period, rarefaction, trough, diffraction, interference, node, refraction, reflection, resonance, standing wave</p>	<p>Curricular resources and/or teacher created assessment(s)</p>

Waves and Electromagnetic Radiation	SC.HS.2.2.A Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.	Glencoe-Physical Science Unit 3: Chapter 9 Unit 3: Chapter 10 Unit 3: Chapter 11	medium, transverse wave, amplitude, compression, crest, frequency, period, rarefaction, trough, diffraction, interference, node, refraction, reflection, resonance, standing wave, carrier wave	Curricular resources and/or teacher created assessment(s)
	SC.HS.2.2.B Evaluate questions about the advantages of using digital transmission and storage of information.	Glencoe-Physical Science Unit 3: Chapter 11 Unit 3: Chapter 12	analog signal, digital signal, transceiver, transponder, modulation,	Curricular resources and/or teacher created assessment(s)
	SC.HS.2.2.C Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.	Glencoe-Physical Science Unit 3: Chapter 11 Unit 3: Chapter 12	photon, electromagnetic spectrum, radio waves, microwaves, infrared light, visible light, ultraviolet light, x-rays, gamma rays	Curricular resources and/or teacher created assessment(s)
	SC.HS.2.2.D Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.	Glencoe-Physical Science Unit 3: Chapter 11 Unit 3: Chapter 12	longitudinal wave, mechanical wave, medium, transverse wave, amplitude, compression, crest, frequency, period, rarefaction, trough, diffraction, interference, node, refraction, reflection, resonance, standing wave, photoelectric effect	Curricular resources and/or teacher created assessment(s)
	SC.HS.2.2.E Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.	Glencoe-Physical Science Unit 3: Chapter 11 Unit 3: Chapter 12	analog signal, digital signal, transceiver, transponder, modulation,	Curricular resources and/or teacher created assessment(s)

	SC.HS.3 Structure and Properties of Matter				
Structure and Properties of Matter	SC.HS.3.3 Gather, analyze, and communicate evidence of the structure, properties and interactions of matter.	*I can explain the differences in the states of matter based on kinetic molecular theory. *I can represent the four states of matter and changes among them with pictures. *I can relate temperature to the change in state of matter and change in motion of molecules	Glencoe-Physical Science Unit 4: Chapter 14 Unit 4: Chapter 15 Unit 6: Chapter 21 Unit 6: Chapter 22 Unit 6: Chapter 23	kinetics, reaction rates, energy of a reaction, exothermic, endothermic	Curricular resources and/or teacher created assessment(s)
	SC.HS.3.3.A Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.	*I can discuss the structure of the atom and describe the mass, the electrical charge, and the location of the subatomic particles. * I can explain trends of the periodic table based on the arrangement of electrons. *I can represent specific elements via Bohr model and Lewis Dot Structure. * I can label families on the periodic table. *I can discuss similarities and differences among metals, nonmetals, and metalloids.	Glencoe-Physical Science Unit 4: Chapter 16 Unit 4: Chapter 17	valence electrons, electronegativity, ionic bond, covalent bond, polar covalent bond, nonpolar covalent bond, pure covalent, bond, octet rule, Groups, families, periods, series, periodicity, metals, nonmetals, metalloids, alkali metals, alkaline earth metals, transition metals, halogens, noble gases, stoichiometry, mole, molar mass, mole ratio, limiting reactant, excess reactant, saturated, unsaturated, super saturated, heat of fusion, heat of vaporization, calorimetry,	Curricular resources and/or teacher created assessment(s)
	SC.HS.3.3.B Plan and conduct an investigation to gather evidence to compare the structure of substances at the macro scale to infer the strength of electrical forces between particles.		Glencoe-Physical Science Unit 4: Chapter 17 Unit 5: Chapter 18 Unit 5: Chapter 19	covalent bonds, ionic bonds, valence electrons	Curricular resources and/or teacher created assessment(s)
	SC.HS.3.3.C Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion and radioactive decay.		Glencoe-Physical Science Unit 5: Chapter 20	Isotopes, fission, fusion, alpha decay, beta decay, gamma decay, mass defect	Curricular resources and/or teacher created assessment(s)

	<p>SC.HS.3.3.D Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.</p>		<p>Glencoe-Physical Science Unit 5: Chapter 18 Unit 5: Chapter 19 Unit 6: Chapter 24</p>	<p>covalent bonds, ionic bonds, valence electrons, crystal lattice,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HS.4 Energy</p>				
	<p>SC.HS.4.4 Gather, analyze, and communicate evidence of the interactions of energy.</p>		<p>Glencoe-Physical Science Unit 2: Chapter 4 Unit 2: Chapter 5</p>	<p>energy, kinetic energy, potential energy, machines, efficiency, mechanical advantage, chemical potential energy, elastic potential energy, gravitational potential energy, conservation of energy, power, thermal energy, heat, conduction, convection, radiation, specific heat, temperature, laws of thermodynamics, solar collector,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HS.4.4.A Create and computational model to calculate the change in the energy of one component in a system when the change in energy of the other component (s) and energy flows in and out of the system.</p>		<p>Glencoe-Physical Science Unit 2: Chapter 4 Unit 2: Chapter 5 Unit 2: Chapter 8</p>	<p>energy, kinetic energy, potential energy, machines, efficiency, mechanical advantage, chemical potential energy, elastic potential energy, gravitational potential energy, conservation of energy, power,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HS.4.4.B Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative positions of particles (objects)</p>	<p>*I can analyze a physical situation to determine whether the kinetic energy and the gravitational potential energy increase, decreases, or remains the same.</p>	<p>Glencoe-Physical Science Unit 2: Chapter 4 Unit 2: Chapter 5 Unit 2: Chapter 8</p>	<p>energy, kinetic energy, potential energy, machines, efficiency, mechanical advantage, chemical potential energy, elastic potential energy, gravitational potential energy, conservation of energy, power,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>

Energy	SC.HS. 4.4.C Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.	*I can describe the law of conservation of energy *I can use graphical representations to analyze the energy of a system and how it is transferred or conserved	Glencoe-Physical Science Unit 2: Chapter 4 Unit 2: Chapter 5 Unit 2: Chapter 6 Unit 2: Chapter 7 Unit 2: Chapter 8	energy, kinetic energy, potential energy, machines, efficiency, mechanical advantage, chemical potential energy, elastic potential energy, gravitational potential energy, conservation of energy, power,	Curricular resources and/or teacher created assessment(s)
	SC.HS.4.4.D Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.	*Evaluate an energy source's costs and benefits and describe applications for its use.	Glencoe-Physical Science Unit 2: Chapter 8 Unit 5: Chapter 20 Unit 6: Chapter 24	clean energy, nuclear energy, radiation, radioactive waste, half-life, tracer,	Curricular resources and/or teacher created assessment(s)
	SC.HS.4.4.E Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined with a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics)		Glencoe-Physical Science Unit 2: Chapter 4 Unit 2: Chapter 5	energy, kinetic energy, potential energy, machines, efficiency, mechanical advantage, chemical potential energy, elastic potential energy, gravitational potential energy, conservation of energy, power, thermal energy, heat, conduction, convection, radiation, specific heat, temperature, laws of thermodynamics, solar collector,	Curricular resources and/or teacher created assessment(s)
	SC.HS.4.4.F Develop and use a model of two objects interacting through electrical or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to interaction.		Glencoe-Physical Science Unit 2: Chapter 6 Unit 2: Chapter 7	electricity, charge by contact, charge by induction, electric field, insulator, conservation of charge, circuit, current, magnetism, magnetic domain, magnetic field, magnetic, pole, electric motor, electromagnet, galvanometer, solenoid, transformer,	Curricular resources and/or teacher created assessment(s)
SC.HS.5 Chemical Reactions					

Chemical Reactions	SC.HS.5.5 Gather, analyze, and communicate evidence of chemical reactions.	Glencoe-Physical Science Unit 5: Chapter 19 Unit 5: Chapter 20 Unit 6: Chapter 21 Unit 6: Chapter 22	kinetics, reaction rates, energy of a reaction, exothermic, endothermic	Curricular resources and/or teacher created assessment(s)
	SC.HS.5.5.A Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.	Glencoe-Physical Science Unit 4: Chapter 16 Unit 4: Chapter 17 Unit 5: Chapter 18 Unit 5: Chapter 19 Unit 6: Chapter 22	valence electrons, electronegativity, ionic bond, covalent bond, polar covalent bond, nonpolar covalent bond, pure covalent, bond, octet rule, Groups, families, periods, series, periodicity, metals, nonmetals, metalloids, alkali metals, alkaline earth metals, transition metals, halogens, noble gases, stoichiometry, mole, molar mass, mole ratio, limiting reactant, excess reactant, saturated, unsaturated, super saturated, heat of fusion, heat of vaporization, calorimetry,	Curricular resources and/or teacher created assessment(s)
	SC.HS.5.5.B Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends on the changes in total bond energy.	Glencoe-Physical Science Unit 5: Chapter 18 Unit 5: Chapter 19 Unit 6: Chapter 21	valence electrons, electronegativity, ionic bond, covalent bond, polar covalent bond, nonpolar covalent bond, pure covalent, bond, bond energy, metals, nonmetals, metalloids, stoichiometry, mole, molar mass, mole ratio, limiting reactant, excess reactant, heat of fusion, heat of vaporization, calorimetry,	Curricular resources and/or teacher created assessment(s)
	SC.HS.5.5.C Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.	Glencoe-Physical Science Unit 5: Chapter 19 Unit 6: Chapter 21 Unit 6: Chapter 22 Unit 6: Chapter 23	molarity, molality, normality, solubility, stoichiometry, mole, molar mass, mole ratio, limiting reactant, excess reactant, saturated, unsaturated, super saturated, heat of fusion, heat of vaporization, calorimetry,	Curricular resources and/or teacher created assessment(s)

	<p>SC.HS. 5.5.D Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.</p>		<p>Glencoe-Physical Science Unit 5: Chapter 19</p>	<p>Haber process, equilibrium, LeChatalier's principle, equilibrium shift, molarity, molality, normality, solubility, stoichiometry, mole, molar mass, mole ratio, limiting reactant, excess reactant, saturated, unsaturated, super saturated, heat of fusion, heat of vaporization, calorimetry,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HS.5.5.E Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.</p>		<p>Glencoe-Physical Science Unit 6: Chapter 24</p>	<p>engineering, problem solving, mechanical engineer, chemical engineer, enviromental engineer,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HS.5.5.F Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.</p>		<p>Glencoe-Physical Science Unit 5: Chapter 19</p>	<p>products, reactants, percent yield, conservation of matter/mass, stoichiometry, mole, molar mass, mole ratio, limiting reactant, excess reactant, catalysts, inhibitors,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>

Strand	State Standard	SPS Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
	SC.HSP.3 Structure and Properties of Matter				
	<p>SC.HSP.3.1 Gather, analyze, and communicate evidence of the structure, properties, and interactions of matter.</p>	<p>The Student Will Be Able To:</p> <ul style="list-style-type: none"> define chemistry define matter and distinguish between substances and mixtures define energy and distinguish between kinetic energy and potential energy define and distinguish between endothermic and exothermic reactions measure and convert units of energy and matter identify properties of solids, liquids, and gases interpret and use phase diagrams explain and use Boyle's Law, Charles' Law, Gay-Lussac's Law, and The Combined Gas Law explain and use The Ideal Gas Law define and use Standard Temperature and Pressure (STP) calculate partial pressure explain the kinetic theory of gases explain and determine vapor pressure, boiling point, and heat of vaporization explain and determine melting point, heat of fusion and sublimation 	<p>SAVVAS - Experience Chemistry Storyline 1: Investigation 1, Storyline 2: Investigation 4</p>	<p>Matter, energy, solids, liquids, gases, phase changes, pressure, temperature, standard conditions, gas laws,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
<p>SC.HSP.3.1.A Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p>	<p>The Student Will Be Able To:</p> <ul style="list-style-type: none"> describe the history of the periodic table describe and identify metals, metalloids, and nonmetals describe the chemistry of a group on the periodic table describe the chemistry of a period on the periodic table describe and predict periodic properties and trends 	<p>SAVVAS - Experience Chemistry Storyline 1: Investigation 2</p>	<p>Groups, families, periods, series, periodicity, metals, nonmetals, metalloids, alkali metals, alkaline earth metals, transition metals, halogens, noble gases, Mendeleev</p>	<p>Curricular resources and/or teacher created assessment(s)</p>	

	<p>SC.HSP.3.1.B Plan and conduct an investigation to gather evidence to compare the structure of substances at the macro scale to infer the strength of electrical forces between particles.</p>	<p>The Student Will Be Able To: explain the history of atomic theory including scientists identify and describe major subatomic particles describe and illustrate the structure of atoms explain different atomic structure models explain and use spectroscopy explain and use orbitals and quantum numbers explain and use the Aufbau Principle, Hund's Rule, and the Pauli Exclusion Principle demonstrate orbital notation, electron configuration notation, and Lewis structures describe natural radioactivity (alpha, beta, and gamma decay) describe and calculate half-lives</p>	<p>SAVVAS - Experience Chemistry Storyline 1: Investigation 2 and 3</p>	<p>Protons, neutrons, electrons, nucleons, electronegativity, Democritus, Dalton, Thompson, Nagaoka, Bohr, Rutherford, Schrodinger, Pauli, Heisenburg, orbitals, spectroscopy,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
--	---	---	---	--	--

Structure and Properties of Matter	<p>SC.HSP.3.1.C Develop and use models to predict and explain forces that are in and between molecules.</p>	<p>The Student Will Be Able To:</p> <ul style="list-style-type: none"> define chemical energy explain energy changes in bonding define and use electronegativity to determine covalent and ionic bonds explain the octet rule demonstrate structural formulas define nonpolar, polar, and coordinate covalent bonds describe metallic bonding and the properties associated with it explain dipoles, hydrogen bonding, and London Dispersion (Van der Waals) forces explain and demonstrate the valence shell electron pair repulsion theory explain and demonstrate the hybridization theory determine, write, and name molecular and empirical formulas and compounds explain oxidation numbers and demonstrate how they are used in formula writing name by using the stock system and be familiar with the old system of naming compounds name acids, bases, and salts calculate percent composition determine empirical formulas from percent composition determine molecular formulas from molar mass describe, read, write, and use chemical equations describe and identify synthesis, decomposition, single and double replacement and combustion reactions use the activity series to determine if reactions are spontaneous 	<p>SAVVAS - Experience Chemistry Storyline 1: Investigation 3</p>	<p>electronegativity, ionic bond, covalent bond, polar covalent bond, nonpolar covalent bond, pure covalent, bond, octet rule, hybridization, nomenclature,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
------------------------------------	--	--	---	---	--

<p>SC.HSP.3.1.D Evaluate a solution to a complex, real-world problems based on prioritized criteria and tradeoffs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.</p>	<p>The Student Will Be Able To: define and differentiate between pure and applied research describe the Haber Process describe the Contact Process describe the reduction (purification) of metals describe what corrosion is and determine what is good and bad corrosion describe lead - acid batteries describe nickel - cadmium batteries explain the importance of petroleum in chemistry describe cracking and fractional distillation</p>	<p>SAVVAS - Experience Chemistry Storyline 2: Investigation 6 Storyline 4: Investigation 12</p>	<p>Haber process, Contact process, fractional distillation</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
<p>SC.HSP.3.1.E Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.</p>	<p>The Student Will Be Able To: describe artificial radioactivity define and give examples of radioisotopes describe particle accelerators explain mass defect and binding energy describe fission reactions explain and label the parts of a fission reactor / power plant describe fusion reactions define radioactive wastes and what we do with them explain uses of radioisotopes explain what antimatter is and how we will use it</p>	<p>SAVVAS - Experience Chemistry Storyline 5: Investigation 17</p>	<p>Isotopes, fission, fusion, alpha decay, beta decay, gamma decay, mass defect</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
<p>SC.HSP.3.1.F Develop and use models to describe and predict mechanisms of the quantum mechanical model of the atom.</p>	<p>The Student Will Be Able To: explain and use orbitals and quantum numbers explain and use the Aufbau Principle, Hund's Rule, and the Pauli Exclusion Principle demonstrate orbital notation, electron configuration notation, and Lewis structures</p>	<p>SAVVAS - Experience Chemistry Storyline 1: Investigation 1</p>	<p>principal energy levels, sublevels, orbitals, Quantum numbers, standard model,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
<p>SC.HSP.3.1.G Evaluate the evidence supporting claims about how atoms absorb and emit energy in the form of electromagnetic radiation.</p>	<p>The Student Will Be Able To: explain the history of atomic theory including scientists explain and use spectroscopy</p>	<p>SAVVAS - Experience Chemistry Storyline 1: Investigation 1</p>	<p>spectroscopy, spectral lines, excited state, ground state</p>	<p>Curricular resources and/or teacher created assessment(s)</p>

	<p>SC.HSP.3.3.H Use mathematical representations to quantify matter through the analysis of patterns in chemical compounds at different scales.</p>	<p>The Student Will Be Able To: describe and use gram atomic mass, gram molecular mass, and molar volumes explain and demonstrate stoichiometry determine percent composition, mole ratios, limiting reactants, and percent yield describe solvents and solutes describe and determine concentrations in molarity, molality, and normality describe suspensions and colloids define solubility terms determine whether a solution is saturated, unsaturated, or supersaturated describe and determine heats of solution define solvation, hydration, and Henry's Law determine boiling point elevation determine freezing point depression describe vapor pressure define electrolytes and non-electrolytes define and determine heat of fusion and heat of vaporization demonstrate the Combined Gas Law define and demonstrate Graham's Law determine calories and joules as related to chemical changes</p>	<p>SAVVAS - Experience Chemistry Storyline 2: Investigation 4, Investigation 5, Investigation 6, Investigation 7</p>	<p>stoichiometry, mole, molar mass, mole ratio, limiting reactant, excess reactant, saturated, unsaturated, super saturated, heat of fusion, heat of vaporization, calorimetry,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HSP.4 Energy: Chemistry</p> <p>SC.HSP.4.2 Gather, analyze, and communicate evidence of the interactions of energy.</p>	<p>The Student Will Be Able To: define kinetics define reaction rates and mechanisms</p>	<p>SAVVAS - Experience Chemistry Storyline 2: Investigation 4 Investigation 6, Investigation 8</p>	<p>kinetics, reaction rates, energy of a reaction, exothermic, endothermic</p>	<p>Curricular resources and/or teacher created assessment(s)</p>

Energy: Chemistry	SC.HSP.4.2.A Use statistical and mathematical techniques to describe qualitative and quantitative thermodynamic relationships.	The Student Will Be Able To: define Hess's Law determine the spontaneity of reactions define enthalpy and entropy define and determine Gibb's Free Energy change explain the collision theory demonstrate and use potential energy diagrams explain the rate altering conditions of a reaction describe catalysts and how they are used describe the rate law explain phase and solution equilibria determine how a reaction "runs to completion" define open and closed systems demonstrate the Le Chatalier's Principle explain the law of chemical equilibrium determine and use equilibrium constants determine and explain solubility product constants describe the common ion effect	SAVVAS - Experience Chemistry Storyline 2: Investigation 6, Investigation 7, Investigation 8	enthalpy, entropy, catalysts, equilibrium, common ion effect	Curricular resources and/or teacher created assessment(s)
	SC.HSP.4.2.B Plan and conduct an investigation to gather evidence of how the Kinetic Molecular Theory and gas laws are related.	The Student Will Be Able To: explain and use Boyle's Law, Charles' Law, Gay-Lussac's Law, and The Combined Gas Law explain and use The Ideal Gas Law define and use Standard Temperature and Pressure (STP) calculate partial pressure explain the kinetic molecular theory of gases explain and determine vapor pressure, boiling point, and heat of vaporization explain and determine melting point, heat of fusion and sublimation	SAVVAS - Experience Chemistry Storyline 3: Investigation 9, Investigation 10, Investigation 11	gas laws, boiling point elevation, freezing point depression,	Curricular resources and/or teacher created assessment(s)
	SC.HSP.4.2.C Analyze and interpret data to explain changes in energy within a system and/or energy flows in and out of a system.	The Student Will Be Able To: explain and determine vapor pressure, boiling point, and heat of vaporization explain and determine melting point, heat of fusion and sublimation determine the spontaneity of reactions define enthalpy and entropy define and determine Gibb's Free Energy change	SAVVAS - Experience Chemistry Storyline 2: Investigation 6, Investigation 7, Investigation 8, Storyline 4: Investigation 12	enthalpy, entropy, catalysts, equilibrium, common ion effect, spontaneous reactions	Curricular resources and/or teacher created assessment(s)

	<p>SC.HSP.4.2.D Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.</p>	<p>The Student Will Be Able To: define electrolytes and non-electrolytes define Arrhenius acids and bases define Bronsted-Lowry acids and bases define Lewis acids and bases describe buffers describe and conduct neutralization reactions conduct titrations calculate unknown concentrations define and demonstrate conjugate acid-base pairs determine and use ionization constants calculate and describe pH and pOH describe the Haber Process describe the Contact Process describe what corrosion is and determine what is good and bad corrosion describe lead - acid batteries describe nickel - cadmium batteries explain the importance of petroleum in chemistry describe cracking and fractional distillation</p>	<p>SAVVAS - Experience Chemistry Storyline 3: Investigation 10, Investigation 11, Storyline 4: Investigation 13, Investigation 14</p>	<p>Electrolytes, Nonelectrolytes, Dissociation constants, Acids (Arrhenius, Bronsted-Lowry, Lewis), Bases (Arrhenius, Bronsted-Lowry, Lewis), Indicators, buffers, neutralization, titration, molarity, molality, normality, amphoteric substances, salts, conjugate acid-base pairs, pH, pOH, Haber process, Contact process, cracking, fractional distillation</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
SC.HSP.5 Chemical Reactions					
	<p>SC.HSP.5.3 Gather, analyze and communicate evidence of chemical reactions.</p>	<p>The Student Will Be Able To: define reaction rates and mechanisms determine the spontaneity of reactions define enthalpy and entropy define and determine Gibb's Free Energy change explain the collision theory demonstrate and use potential energy diagrams explain the rate altering conditions of a reaction describe catalysts and how they are used describe the rate law explain the law of chemical equilibrium determine and use equilibrium constants</p>	<p>SAVVAS - Experience Chemistry Storyline 2: Investigation 6, Investigation 8</p>	<p>enthalpy, entropy, spontaneous reactions, reactants, products,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HSP.5.3.A Plan and conduct an investigation to generate evidence that answers scientific questions related to changes in solution chemistry.</p>	<p>The Student Will Be Able To: determine boiling point elevation determine freezing point depression describe vapor pressure define electrolytes and non-electrolytes</p>	<p>SAVVAS - Experience Chemistry Storyline 1</p>	<p>solution, solvent, solute, freezing point depression, boiling point elevation,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>

Chemical Reactions	<p>SC.HSP.5.3.B Use model to identify electron transfer and balance a redox reaction.</p>	<p>The Student Will Be Able To: define reduction and oxidation determine oxidation and reduction numbers for atoms and ions explain half reactions demonstrate half cells describe the parts of a single cell battery describe the anode and cathode in a cell determine and use standard electrode potentials distinguish between electrochemical and electrolytic cells describe electroplating demonstrate balancing redox reactions</p>	<p>SAVVAS - Experience Chemistry Storyline 5: Investigation 15</p>	<p>reduction, oxidation, half reactions, cathode, anode, salt bridge,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HSP.5.3.C Use mathematical and/or computational representations to predict and explain relationships within chemical systems.</p>	<p>The Student Will Be Able To: describe and use gram atomic mass, gram molecular mass, and molar volumes explain and demonstrate stoichiometry determine percent composition, mole ratios, limiting reactants, and percent yield</p>	<p>SAVVAS - Experience Chemistry Storyline 2: Investigation 4, Investigation 5, Investigation 6, Investigation 7</p>	<p>mole, molar mass, molar volume, balanced equations,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
	<p>SC.HSP.5.3.D Use mathematical representations to analyze the proportion and quantity of particles in solution.</p>	<p>The Student Will Be Able To: describe and use gram atomic mass, gram molecular mass, and molar volumes describe solvents and solutes describe and determine concentrations in molarity, molality, and normality describe suspensions and colloids define solubility terms determine whether a solution is saturated, unsaturated, or supersaturated determine boiling point elevation determine freezing point depression describe vapor pressure define electrolytes and non-electrolytes</p>	<p>SAVVAS - Experience Chemistry Storyline 2: Investigation 4, Investigation 5, Investigation 6, Investigation 7, Storyline 4: Investigation 13</p>	<p>mole, molar mass, molar volume, balanced equations,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>

	<p>SC.HSP.5.3.E Plan and conduct an investigation to predict the outcome of a chemical reaction based on patterns of chemical properties.</p>	<p>The Student Will Be Able To: describe characteristics of organic compounds describe organic bonding define isomers distinguish between saturated and unsaturated compounds name, draw, model, and describe alkanes, alkenes, and alkynes name, draw, model, and describe alkadienes, aromatic compounds, and alkyl radicals describe and determine substitution, addition, fermentation, esterification, saponification, oxidation, and polymerization reactions name, draw, model, and describe alcohols, acids, aldehydes, ketones, ethers, and esters distinguish between and describe condensation and addition polymers determine mono-, di-, and trihydroxy alcohols as well as primary, secondary, and tertiary alcohols</p>	<p>SAVVAS - Experience Chemistry Storyline 5: Investgation 16</p>	<p>alkanes, alkenes, alkynes, alcohols, acids, aldehydes, ketones, ethers, aromatic hydrocarbons, organic reactions, organic nomenclature</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
--	--	--	---	---	--

	<p>SC.HS.5.3.F Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.</p>	<p>The Student Will Be Able To:</p> <ul style="list-style-type: none"> define chemical energy explain energy changes in bonding define and use electronegativity to determine covalent and ionic bonds explain the octet rule demonstrate structural formulas define nonpolar, polar, and coordinate covalent bonds describe metallic bonding and the properties associated with it explain dipoles, hydrogen bonding, and London Dispersion (Van der Waals) forces explain and demonstrate the valence shell electron pair repulsion theory explain and demonstrate the hybridization theory determine, write, and name molecular and empirical formulas and compounds explain oxidation numbers and demonstrate how they are used in formula writing name by using the stock system and be familiar with the old system of naming compounds name acids, bases, and salts calculate percent composition determine empirical formulas from percent composition determine molecular formulas from molar mass describe, read, write, and use chemical equations describe and identify synthesis, decomposition, single and double replacement and combustion reactions use the activity series to determine if reactions are spontaneous 	<p>SAVVAS - Experience Chemistry Storyline 1: Investigation 1, Investigation 2</p>	<p>valence electrons, electronegativity, ionic bond, covalent bond, polar covalent bond, nonpolar covalent bond, pure covalent bond, octet rule, Groups, families, periods, series, periodicity, metals, nonmetals, metalloids, alkali metals, alkaline earth metals, transition metals, halogens, noble gases, stoichiometry, mole, molar mass, mole ratio, limiting reactant, excess reactant, saturated, unsaturated, super saturated, heat of fusion, heat of vaporization, calorimetry,</p>	<p>Curricular resources and/or teacher created assessment(s)</p>
--	--	--	--	--	--

Strand	State Standard	SPS Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
Forces, Interactions, and Motion	SC.HSP.1 Forces, Interactions, and Motion		Savvas Realize Physics (storyline.investigation.experience) ex. 1.1.2. would be storyline 1, investigation1, and experience 2		
	SC.HSP.1.1 Gather, analyze, and communicate evidence of forces, interactions, and motion.	<ul style="list-style-type: none"> •The learner will be able gather data through measurements to understand the importance of measurements and determine if the data are precise or accurate. •The learner will be able to understand and explain how forces can cause motion in a system and practice representing forces with a free body diagram. Learners will understand Newton's 1st and 2nd laws of motion. 	1.1.1 - Modeling Motion 1.1.2 - Forces 1.1.3 - Circular and Projectile Motion 1.2.1 - Gravitational Forces 1.2.2 - Electric Forces 1.2.3 - Magnetic Forces 1.2.4 - Forces in Materials	mass, normal force, modeling motion, earth processes, forces on systems, acceleration, graphs, inertia, frictional force, graphing, net force, displacement, third law pair, stability, motion, surface processes, velocity, Normal, Newton's first law of motion, friction, vectors, Free Body Diagram, system, Newton's laws of motion, Newton's second law of motion, forces, temporal scales, Force Acceleration Equations, equilibrium, Newton's third law of motion, kinematic equations, motion, circular motion, projectile motion	Teacher-made formative and summative assessments. Savvas Resources: Savvas Inspire Online Formative Assessments Savvas Performance Based Assessments Inquiry Labs: Motion Plots, Free Fall Acceleration, Forces and Motion, Friction, Model Projectile Motion Engineering Workbench: Design an Airdrop System
	SC.HSP.1.1.A Generate and interpret mathematical and graphical representations to describe the relationships between position, velocity, acceleration and time.	<ul style="list-style-type: none"> •The learner will be able to graph data, determine the relationships of the data, and make predictions. •Learner will be able to understand how graphs are used in physics as well as how to graph data. The learner will be able to identify the types of relationships between data. •Students will be able to algebraically and graphically add vectors in two dimensions and how to resolve vectors into their components. •The learner will be able to create a position - time graph and interpret position - time graphs. 	1.1.1 - Modeling Motion 1.1.2 - Forces 1.1.3 - Circular and Projectile Motion 1.2.1 - Gravitational Forces	mass, normal force, modeling motion, earth processes, forces on systems, acceleration, graphs, inertia, frictional force, graphing, net force, displacement, third law pair, stability, motion, surface processes, velocity, Normal, Newton's first law of motion, friction, vectors, Free Body Diagram, system, Newton's laws of motion, Newton's second law of motion, forces, temporal scales, Force Acceleration Equations, equilibrium, Newton's third law of motion, kinematic equations, motion, circular motion, projectile motion	Teacher-made formative and summative assessments. Savvas Resources: Savvas Inspire Online Formative Assessments Savvas Performance Based Assessments Inquiry Labs: Motion Plots, Free Fall Acceleration, Forces and Motion, Friction, Model Projectile Motion Engineering Workbench: Design an Airdrop System
	SC.HSP.1.1.B Use mathematical and pictorial models as applied to Newton's second law of motion describing the relationship among the net force on a macroscopic object, its mass, and its acceleration.	<ul style="list-style-type: none"> •The learner will understand motion and particle diagrams and how they can be used to represent motion. •The learner will understand how coordinates, vectors, and scalars are used to describe motion. •The learner will be able to create a position - time graph and interpret position - time graphs. •Learner will be able to understand nonuniform position-time graphs, average and instantaneous accelerations, and be able to calculate average and instantaneous accelerations. 	1.1.1 - Modeling Motion 1.1.2 - Forces 1.1.3 - Circular and Projectile Motion 1.2.1 - Gravitational Forces	mass, normal force, modeling motion, earth processes, forces on systems, acceleration, graphs, inertia, frictional force, graphing, net force, displacement, third law pair, stability, motion, surface processes, velocity, Normal, Newton's first law of motion, friction, vectors, Free Body Diagram, system, Newton's laws of motion, Newton's second law of motion, forces, temporal scales, Force Acceleration Equations, equilibrium, Newton's third law of motion, kinematic equations, motion, circular motion, projectile motion	Teacher-made formative and summative assessments. Savvas Resources: Savvas Inspire Online Formative Assessments Savvas Performance Based Assessments Inquiry Labs: Motion Plots, Free Fall Acceleration, Forces and Motion, Friction, Model Projectile Motion Engineering Workbench: Design an Airdrop System

Strand	State Standard	SPS Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
	<p>SC.HSP.1.1.C Use mathematical representations of momentum to predict the outcome of a collision.</p>	<ul style="list-style-type: none"> •The learner will be able to understand and explain how forces can cause motion in a system and practice representing forces with a free body diagram. Learners will understand Newton's 1st and 2nd laws of motion. •The learner will understand the conservation of momentum in a variety of situations, including collisions, recoil, and gyroscopes. This will lead them to understand that rockets can move in space using recoil. 	<p>3.8.1 - Momentum and Impulse 3.8.2 Conservation of Momentum</p>	<p>momenta, rotational inertia, angular impulse, total momentum, angular velocity, torque, angular momentum, axis, momentum, axis of rotation, impulse, moment of inertia, linear momentum, inelastic collision, angular impulse, momenta, totally inelastic collision, angular momentum, Newton's second law, law of conservation of angular momentum, conservation of momentum, momentum, impulse-momentum theorem, collision, elastic collision, impulse, moment of inertia, law of conservation of linear momentum, linear momentum, ballistic pendulum</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Savvas Inspire Online Formative Assessments Savvas Performance Based Assessments Inquiry Labs: Momentum and Impulse During Collisions, Elastic and Inelastic Collisions Digital Activity: Minimizing Car Crash Injuries Engineering Activity: Egg Supply Drop</p>
	<p>SC.HSP.1.1.D Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.</p>	<ul style="list-style-type: none"> •The learner will use the problem solving process to engineer a fuselage for an egg. Through this process, the learner will be able to calculate the momentum and impulse of the apparatus to calculate the force on the egg. 	<p>3.8.1 - Momentum and Impulse 3.8.2 Conservation of Momentum</p>	<p>momenta, rotational inertia, angular impulse, total momentum, angular velocity, torque, angular momentum, axis, momentum, axis of rotation, impulse, moment of inertia, linear momentum, inelastic collision, angular impulse, momenta, totally inelastic collision, angular momentum, Newton's second law, law of conservation of angular momentum, conservation of momentum, momentum, impulse-momentum theorem, collision, elastic collision, impulse, moment of inertia, law of conservation of linear momentum, linear momentum, ballistic pendulum</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Savvas Inspire Online Formative Assessments Savvas Performance Based Assessments Inquiry Labs: Momentum and Impulse During Collisions, Elastic and Inelastic Collisions Digital Activity: Minimizing Car Crash Injuries Engineering Activity: Egg Supply Drop</p>
	<p>SC.HSP.1.1.E Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.</p>	<ul style="list-style-type: none"> •The learner will understand planetary motion and gravitation by exploring Kepler's Law and Newton's Law of Universal Gravitation. The learner will understand that Kepler's 2nd law and Newton's Law of Gravitation can be combined to explain planetary motion. •The learner will be able to understand the concepts of planetary orbit and gravitational field. The learner will also have a brief intro to Einstein's theory of gravity and be able to explain why gravity causes both orbiting satellites and falling objects. •The learner will be able to understand electric charge and electric force and model how distance between two objects related to electric charge and force. •Students will understand what causes magnetism and how magnetic fields and forces can be used within designated systems to do useful work. 	<p>2.5.1 - Magnetism 2.5.2 - Magnetic Fields 2.5.3 - Inducing Currents</p>	<p>magnetic fields, magnetization, magnetic domain, magnetic declination, magnetism, orbital magnetic moment, north pole, spin magnetic moment, force on a charged particle, ferromagnetic, magnetic forces, non-magnetic, spin, domain, left-hand rule, helical motion, cosmic ray, magnetize, Lorentz force, magnetic moment, geographic pole, magnetic pole, south pole, right-hand rule</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Inquiry Lab: Electric Charges and Coulomb's Law, Magnetic Force and Separation Distance Digital Activities: Magnetic Forces, Generator Testing, Magnetism</p>
	<p>SC.HSP.2 Waves, Electromagnetic Radiation, and Optics</p>				

Strand	State Standard	SPS Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
<p>Waves,</p>	<p>SC.HSP.2.2 Gather, analyze, and communicate evidence of the interactions of waves and optics.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •explore periodic motion, including the specific cases of masses on springs, pendulums, and resonance. This will lead them to understand that a pendulum can serve as a damper for a building's earthquake-induced periodic motion. 	<p>4.11.1 - Wave Properties 4.11.2 - Wave Behavior and Energy 4.11.3 - Wave Optics</p>	<p>waves, wave media, model waves, transverse waves, sound waves, wavelengths, medium, wave periods, frequency, wave speeds, amplitudes, longitudinal waves, mechanical waves, crests, properties of waves, wave properties, frequencies, wave behavior, Interference, beats, medium, media, Doppler effect, wave energy transfer, wave speeds, constructive interference, amplitudes, Wave sources, nodes, destructive interference, Standing Waves, Wave Interactions, anodes, beat frequency, beat frequencies, phases</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Digital Activity: Making Waves Inquiry Lab: Mechanical Waves Performance Based Assessment: The Speed of Sound in Open Air</p>
	<p>SC.HSP.2.2.A Use mathematical representations to describe the relationships among the frequency, wavelength, and speed of waves traveling in various media.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Explore periodic motion, including the specific cases of masses on springs, pendulums, and resonance. This will lead them to understand that a pendulum can serve as a damper for a building's earthquake-induced periodic motion. •Understand different types of waves and basic characteristics of waves. •Understand basic wave behaviors and will be able to relate this to scientists ability to predict tsunamis. •Determine the frequency of a wave using time intervals of wave crests and complete a graph of wave speed as a function of depth. •Support claims about the relationships among the frequency, wavelength, and speed of mechanical waves. 	<p>4.11.1 - Wave Properties 4.11.2 - Wave Behavior and Energy 4.11.3 - Wave Optics</p>	<p>waves, wave media, model waves, transverse waves, sound waves, wavelengths, medium, wave periods, frequency, wave speeds, amplitudes, longitudinal waves, mechanical waves, crests, properties of waves, wave properties, frequencies, wave behavior, Interference, beats, medium, media, Doppler effect, wave energy transfer, wave speeds, constructive interference, amplitudes, Wave sources, nodes, destructive interference, Standing Waves, Wave Interactions, anodes, beat frequency, beat frequencies, phases</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Digital Activity: Making Waves Inquiry Lab: Mechanical Waves Performance Based Assessment: The Speed of Sound in Open Air</p>
	<p>SC.HSP.2.2.B Develop and use models to predict interactions of longitudinal and transverse waves in various media.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Develop and use mathematical representation to support a claim about the properties of mechanical waves. •Understand basic wave behaviors and will be able to relate this to scientists ability to predict tsunamis. •Determine the frequency of a wave using time intervals of wave crests and complete a graph of wave speed as a function of depth. •Explore the interactions of waves with one another and with objects in their environment. •Support claims about the relationships among the frequency, wavelength, and speed of mechanical waves. •Use data to show that wave speed changes as the medium through which a wave travels changes. 	<p>4.11.1 - Wave Properties 4.11.2 - Wave Behavior and Energy 4.11.3 - Wave Optics</p>	<p>waves, wave media, model waves, transverse waves, sound waves, wavelengths, medium, wave periods, frequency, wave speeds, amplitudes, longitudinal waves, mechanical waves, crests, properties of waves, wave properties, frequencies, wave behavior, Interference, beats, medium, media, Doppler effect, wave energy transfer, wave speeds, constructive interference, amplitudes, Wave sources, nodes, destructive interference, Standing Waves, Wave Interactions, anodes, beat frequency, beat frequencies, phases</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Digital Activity: Making Waves Inquiry Lab: Mechanical Waves Performance Based Assessment: The Speed of Sound in Open Air</p>

Strand	State Standard	SPS Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
Electromagnetic Radiation and Optics	SC.HSP.2.2.C Develop and use models to describe the behavior of light at the boundary of various media	The learner will: •Be able to communicate cause-and-effect relationships related to light diffraction, reflection, and refraction using multiple formats, including diagrams, mathematical models, oral reports, and written text. •Use mathematical representation to support a claim regarding the speed of waves traveling in various media.	4.12.1 - Electromagnetic Waves and Their Properties 4.12.2 - Particle-Wave Duality 4.12.3 - Electromagnetic Radiation and Matter	electromagnetic waves, light spectrum, wave model, Diffraction, prisms, light intensity, light waves, Interference, polarization, wave properties, dispersion, electromagnetic spectrum, Interference, threshold frequency, particle model, wave theory, photoelectric effect, threshold frequencies, light spectrum, particle-wave duality, photons, de Broglie wavelength, light intensity, visible light spectrum, particle wave duality	Teacher-made formative and summative assessments. Savvas Resources: Inquiry Labs: Converting Electrical Signals to Sounds, Converting Sunlight to Electricity Performance-Based Assessment: Send Messages with a Telegraph
	SC.HSP.2.2.D Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.	The learner will: •Understand that waves can add or cancel another as they cross, depending on their relative phase, but they emerge unaffected by each other. •Understand that electromagnetic radiation can be modeled as a wave of changing electric and magnetic fields or as particles called photons. •Be able to demonstrate the wave model and be able to use this to explain many features of electromagnetic radiation and other features associated with wave-particle duality.	4.12.1 - Electromagnetic Waves and Their Properties 4.12.2 - Particle-Wave Duality 4.12.3 - Electromagnetic Radiation and Matter	electromagnetic waves, light spectrum, wave model, Diffraction, prisms, light intensity, light waves, Interference, polarization, wave properties, dispersion, electromagnetic spectrum, Interference, threshold frequency, particle model, wave theory, photoelectric effect, threshold frequencies, light spectrum, particle-wave duality, photons, de Broglie wavelength, light intensity, visible light spectrum, particle wave duality	Teacher-made formative and summative assessments. Savvas Resources: Inquiry Labs: Converting Electrical Signals to Sounds, Converting Sunlight to Electricity Performance-Based Assessment: Send Messages with a Telegraph
	SC.HSP.2.2.E Use evidence to support explanations for causes of emission and absorption spectra of electromagnetic radiation.	The learner will: •Understand that electromagnetic radiation can be absorbed to cause heat (longer wavelengths) or absorbed to cause damage to living cells through ionization (shorter wavelengths such as x-rays). •Understand how electromagnetic radiation interacts with matter through absorption or emission.	4.12.1 - Electromagnetic Waves and Their Properties 4.12.2 - Particle-Wave Duality 4.12.3 - Electromagnetic Radiation and Matter	absorption by matter, Energy levels, absorbed by matter, ionization, Emission Spectrum, UV light, ionized, UV radiation, living cells, light spectrum, Ultraviolet light, Ultraviolet radiation, electromagnetic radiation, photons, living tissue, absorption spectrum, Emission Spectra, absorption spectra	Teacher-made formative and summative assessments. Savvas Resources: Inquiry Labs: Converting Electrical Signals to Sounds, Converting Sunlight to Electricity Performance-Based Assessment: Send Messages with a Telegraph
	SC.HSP.2.2.F Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture energy.	The learner will: •Be able to communicate technical information about how some technology devices use the principles of wave behavior and wave interactions with matter to transmit and capture energy. •Be able to explain the process of how solar cells capture the sun's energy and convert it into electrical energy. •Understand how information can be digitized, how it can be stored reliably in computer memory, and how it can be sent over long distances as a series of wave pulses.	4.11.1 - Wave Properties 4.11.2 - Wave Behavior and Energy 4.11.3 - Wave Optics 4.12.1 - Electromagnetic Waves and Their Properties 4.12.2 - Particle-Wave Duality 4.12.3 - Electromagnetic Radiation and Matter 4.13.1 - Digital Information 4.13.2 - Capturing and Transmitting Information	digital signals, digital transmission, digital information, memory, digital code, computer memory, storage of information, digital storage, physical storage, information storage, Analog signals, antenna, transmit information, wave behavior, sensors, wave behaviour, information, capture information, medical imaging	Teacher-made formative and summative assessments. Savvas Resources: Inquiry Labs: Converting Electrical Signals to Sounds, Converting Sunlight to Electricity Performance-Based Assessment: Send Messages with a Telegraph
SC.HSP.4 Energy: Physics					

Strand	State Standard	SPS Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
	<p>SC.HSP.4.3 Gather, analyze, and communicate evidence of the interactions of energy.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand the different forms of energy (sounc, thermal, motion, etc.) and their interactions. •Understand that energy cannot be created or destroyed but it can be converted into other forms of energy. •Be able to gather, analyze, and communicate the ineractions of energy. 	<p>3.7.1 - Classifying Energy and Work 3.7.2 - Mechanical Energy 3.7.3 - Conservation of Energy</p>	<p>work done by, energy bar charts, rotational kinetic energy, kinetic energy, linear Kinetic energy, work, work-energy theorem, work done on, thermal energy, power, total kinetic energy, energy, conservative force, nonconservative force, gravitational potential energy, mechanical energy, electromagnetic potential energy, electrostatic potential energy, magnetic potential energy, internal energy, elastic potential energy, electrical potential energy, potential energy</p>	<p>Teacher-made formative and summative assessments.</p> <p>Optional Teacher Performance-Based Assessment: Pop Bottle Rocket Research, Deasign, and Launch</p> <p>Savvas Resources: Inquiry Lab: Kinetic Energy Performance-Based Assessment: Heating Curve of Water</p>
	<p>SC.HSP.4.3.A Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand that work, energy, and power have specific, precise meaning in physics that often differ from how they are used. •Understand the law of conservation of energy, which will lead them to understand that while some forms of energy may not be as useful as others, energy is never lost. 	<p>3.7.1 - Classifying Energy and Work 3.7.2 - Mechanical Energy 3.7.3 - Conservation of Energy</p>	<p>work done by, energy bar charts, rotational kinetic energy, kinetic energy, linear Kinetic energy, work, work-energy theorem, work done on, thermal energy, power, total kinetic energy, energy, conservative force, nonconservative force, gravitational potential energy, mechanical energy, electromagnetic potential energy, electrostatic potential energy, magnetic potential energy, internal energy, elastic potential energy, electrical potential energy, potential energy</p>	<p>Teacher-made formative and summative assessments.</p> <p>Optional Teacher Performance-Based Assessment: Pop Bottle Rocket Research, Deasign, and Launch</p> <p>Savvas Resources: Inquiry Lab: Gas Particles and Work, The Impact of Position on Energy, Pendulums and the Conservation of Energy Performance-Based Assessment: Energy Conversion</p>
	<p>SC.HSP.4.3.B Plan and conduct an investigation to rate the power and efficiency used in performing work on a system.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Be able to analyze a machine or systems of machines to determine the work done in the system, the power used in the system, and calculate the efficiency of the system. •Understand the benefits of simple and compound machines. This will lead them to understand that machines can change the size or direction of force but cannot create or destroy energy. •Understand the law of conservation of energy, which will lead them to understand that while some forms of energy may not be as useful as others, energy is never lost. 	<p>3.7.1 - Classifying Energy and Work 3.7.2 - Mechanical Energy 3.7.3 - Conservation of Energy</p>	<p>work done by, energy bar charts, rotational kinetic energy, kinetic energy, linear Kinetic energy, work, work-energy theorem, work done on, thermal energy, power, total kinetic energy, energy, conservative force, nonconservative force, gravitational potential energy, mechanical energy, electromagnetic potential energy, electrostatic potential energy, magnetic potential energy, internal energy, elastic potential energy, electrical potential energy, potential energy, efficiency, power, work, simple machine, compound machine</p>	<p>Teacher-made formative and summative assessments.</p> <p>Optional Teacher Performance-Based Assessment: Pop Bottle Rocket Research, Deasign, and Launch</p> <p>Savvas Resources: Inquiry Lab: Gas Particles and Work, The Impact of Position on Energy, Pendulums and the Conservation of Energy Performance-Based Assessment: Energy Conversion</p>

Strand	State Standard	SPS Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
Energy: Physics	<p>SC.HSP.4.3.C Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand how energy can manifest in different forms (motion, sound, light, and thermal energy) and energy of different types interacts. •Understand that energy cannot be destroyed or created, it can be converted into different forms. •Be able to develop a model of a device that converts energy with an explanation of the device, and create this device using their model which will demonstrate the principles of energy conservation. 	<p>3.10.1 - Electrical Potential 3.10.2 - Energy in Electrical Circuits 3.10.3 - Power Generation</p>	<p>Electric Potential Energy, energy bar charts, point charges, electric charges, electric potential field, superposition of fields, equipotential surfaces, Electrostatic Potential Energy, electric potential, scalar fields, potential fields, potential difference, circuit diagrams, circuit elements, ohmic materials, multimeter, potential energy, resistance, voltage, modeling circuits, ammeter, current, Ohm's law, Kirchhoff's junction rule, Joule's Law, electric circuits, voltmeter, Kirchhoff's rules, Kirchhoff's loop rule, energy</p>	<p>Teacher-made formative and summative assessments.</p> <p>Optional Teacher Performance-Based Assessment: Pop Bottle Rocket Research, Design, and Launch Mr. Circuit Lab Experiences (Labs 1-10 with write-up)</p> <p>Savvas Resources: Inquiry Lab: Digital Activity: Performance-Based Assessment: Design, Build, and Refine a Wind-Turbine Rotor</p>
	<p>SC.HSP.4.3.D Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand criteria and constraints to chosen global challenges and be able to analyze these challenges to discuss a solution that will meet societal needs and possibly advance society. •Be able to design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering. 	<p>3.8.1 - Momentum and Impulse 3.8.2 - Conservation of Momentum 3.10.3 - Power Generation 4.13.2 - Capturing and Transmitting Information 4.13.3 - Capturing and Transmitting Energy</p>	<p>Momentum, Impulse, Collision, Inelastic Collision, Elastic Collision, Energy, Power, transformers, direct current, electric generators, induced current, generators, metal detectors, power generation, electric motors, alternating current, motors, electromotive force, induction devices, digital signals, digital transmission, digital information, memory, digital code, computer memory, storage of information, digital storage, physical storage, information storage, Analog signals, antenna, transmit information, wave behavior, sensors, wave behaviour, information, capture information, medical imaging</p>	<p>Teacher-made formative and summative assessments.</p> <p>Supplemental Bridge Building Project, Egg Drop / Egg Transport Vehicle, Pop Bottle Rocket Research, Design, and Launch</p> <p>Savvas Resources: Inquiry Lab: Natural Resource Management, Build a Battery Performance-Based Assessment: Build Your Own Egg-Transport Vehicle, Minimizing Car Crash Injuries, Design, Build, and Refine a Wind-Turbine Rotor</p>
	<p>SC.HSP.4.3.E Plan and conduct an investigation to provide evidence for the transfer of thermal energy within a system based on the Laws of Thermodynamics.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Be able to develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles and energy associated with the relative position of particles. •Understand how thermal energy can be measured as a temperature and transferred between objects through conduction, convection, and radiation. •Understand and test the effects of conductors and insulators on an object's thermal energy and energy transfer rates. 	<p>3.9.1 - Temperature 3.9.2 - Thermal Equilibrium and Heat Flow 3.9.3 - Heat Flow Within Earth</p>	<p>first law of thermodynamics, heat, isobaric processes, heat of vaporization, thermal energy, 1st law of thermodynamics, matter, adiabatic processes, ideal gas law, kelvin, phase change, isothermal processes, absolute temperature, heat of fusion, temperature, states of matter, isochoric processes, average kinetic energy, absolute zero, heat flow, thermodynamic processes</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Inquirey Lab: Kinetic Energy, Heat Transfer Performance-Based Assessment:</p>
	<p>SC.HSP.4.3.F Develop and use a model of two objects interacting through gravitational, electric, or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand Newton's Law of Universal Gravitation as well as Coulombs Law to be able to describe gravitational and electrical forces between objects and create models using these laws. •Be able to predict resulting forces on objects by using mathematical models and computations based on Newton's Law of Universal Gravitation and Coulombs Law. 	<p>2.4.1 - Coulomb's Law 2.4.2 - Electric Fields 3.7.1 - Classifying Energy and Work 3.7.2 - Mechanical Energy 3.7.3 - Conservation of Energy 3.10.1 - Electrical Potential 3.10.2 - Energy in Electrical Circuits</p>	<p>induced electric forces, electric forces, electrical forces, electrostatic forces, van der Waals, electrical charges, contact forces, Coulomb, vectors, charges, electric charges, induced electric charges, Coulomb's Law, electric fields, electric forces, electrostatic forces, Uniform electric fields, electric field lines, fields, electric current, current, electric fields</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Inquirey Lab: Magnetic Force and Separation Distance Performance-Based Assessment: Build and Test and Electroscopes</p>
	<p>SC.HSP.16 Electricity and Magnetism</p>				

Strand	State Standard	SPS Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
	<p>SC.HSP.16.4 Gather, analyze, and communicate evidence of electricity and magnetism.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand that moving electrons creates an electric current, which results in electric fields and magnetic fields. •Understand that objects have charges, which can result in forces on the objects due to their positive or negative electrical charge. 	<p>2.4.1 - Coulomb's Law 2.4.2 - Electric Fields 2.4.3 - Electric Current 2.5.1 - Magnetic Forces and Fields</p>	<p>induced electric forces, electric forces, electrical forces, electrostatic forces, van der waals, electrical charges, contact forces, Coulomb, vectors, charges, electric charges, induced electric charges, Coulomb's Law, electric fields, electric forces, electrostatic forces, Uniform electric fields, electric field lines, fields, electric current, current, electric fields, material properties, conductivity, magnetic fields, magnetization, magnetic domain, magnetic declination, magnetism, force on a charged particle, ferromagnetic, magnetic forces, non-magnetic, left-hand rule, helical motion, magnetize, Lorentz force, geographic pole, magnetic pole, south pole, right-hand rule</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Inquirey Lab: Magnetic Force and Separation Distance Performance-Based Assessment: Build and Test and Electroscop</p>
	<p>SC.HSP.16.4.A Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand Newton's Law of Universal Gravitation as well as Coulombs Law to be able to describe graviational and electrical forces between objects and create models using these laws. •Be able to predict resulting forces on obejcts by using mathematical models and computations based on Newton's Law of Universal Gravitation and Coulombs Law. 	<p>2.4.1 - Coulomb's Law 2.4.2 - Electric Fields</p>	<p>induced electric forces, electric forces, electrical forces, electrostatic forces, van der waals, electrical charges, contact forces, Coulomb, vectors, charges, electric charges, induced electric charges, Coulomb's Law, electric fields, electric forces, electrostatic forces, Uniform electric fields, electric field lines, fields, electric current, current, electric fields</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Inquirey Lab: Magnetic Force and Separation Distance Performance-Based Assessment: Build and Test and Electroscop</p>
	<p>SC.HSP.16.4.B Use models to visualize and describe gravitational, magnetic and electrical fields and predict resulting forces on nearby objects.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand Newton's Law of Universal Gravitation as well as Coulombs Law to be able to describe graviational and electrical forces between objects and create models using these laws. •Be able to predict resulting forces on obejcts by using mathematical models and computations based on Newton's Law of Universal Gravitation and Coulombs Law. 	<p>2.3.1 - Universal Gravitation 2.4.1 - Coulomb's Law 2.4.2 - Electric Fields 2.5.1 - Magnetic Forces and Fields</p>	<p>induced electric forces, electric forces, electrical forces, electrostatic forces, van der waals, electrical charges, contact forces, Coulomb, vectors, charges, electric charges, induced electric charges, Coulomb's Law, electric fields, electric forces, electrostatic forces, Uniform electric fields, electric field lines, fields, electric current, current, electric fields, material properties, conductivity, magnetic fields, magnetization, magnetic domain, magnetic declination, magnetism, force on a charged particle, ferromagnetic, magnetic forces, non-magnetic, left-hand rule, helical motion, magnetize, Lorentz force, geographic pole, magnetic pole, south pole, right-hand rule</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Inquirey Lab: Magnetic Force and Separation Distance Performance-Based Assessment: Build and Test and Electroscop</p>

Strand	State Standard	SPS Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
Electricity and Magnetism	<p>SC.HSP.16.4.C Use mathematical representations to provide evidence that describes and predicts relationships between power, current, voltage, and resistance.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand electrical diagrams and schematic diagrams for circuits and be able to create their own diagrams with accurate current, voltage, and resistance. •Be able to understand and solve circuits by calculating power, current, resistance and voltage within the circuits. 	<p>2.4.3 - Electric Current 3.10.1 - Electrical Potential 3.10.2 - Energy in Electrical Circuits 3.10.3 - Power Generation 4.13.3 - Capturing and Transmitting Energy</p>	<p>circuit diagrams, circuit elements, ohmic materials, multimeter, potential energy, resistance, voltage, modeling circuits, ammeter, current, Ohm's law, Kirchhoff's junction rule, Joule's Law, electric circuits, voltmeter, Kirchhoff's rules, Kirchhoff's loop rule, energy, transformers, direct current, electric generators, induced current, generators, metal detectors, power generation, electric motors, alternating current, motors, electromotive force, induction devices</p>	<p>Teacher-made formative and summative assessments.</p> <p>Mr. Circuit Lab Experiences (Labs 1-10 with write-up)</p> <p>Savvas Resources: Inquiry Lab: Build a Battery Performance-Based Assessment: Design, Build, and Refine a Wind-Turbine Rotor</p>
	<p>SC.HSP.16.4.D Evaluate competing designs solutions for construction and use of electrical consumer products accounting for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Be able to design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solves through engineering. •Understand power needs of the world and how renewable and nonrenewable resources are used and can be sustained to meet the needs of society. 	<p>3.10.3 - Power Generation 3.10.4 - Energy Resources and Conservation Supplemental Bridge Building Project - Use Skills USA resources if needed</p>	<p>transformers, direct current, electric generators, induced current, generators, metal detectors, power generation, electric motors, alternating current, motors, electromotive force, induction devices, human power needs, Impact, energy Resources, nonrenewable energy resources, cost benefit analysis, renewable energy resources, human population, sustainability, Ehrlich Equation, load management, conservation, energy storage, energy resources, energy consumption, breaking strength, shearing force, twisting force, bending force, engineering and design</p>	<p>Teacher-made formative and summative assessments.</p> <p>Supplemental Bridge Building Project</p> <p>Savvas Resources: Engineering Workbench: Energy Sources: Costs and Benefits, Energy Production</p>
	<p>SC.HSP.16.4.E Obtain and communicate technical information about how some technological devices use alternating current and others use direct current.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand the difference between alternating and direct current and how both of these types of current are generated. •Understand the uses of AC and DC current and why some devices use one or the other to operate efficiently. 	<p>2.4.3 - Electric Currett 2.5.3 - Inducing Current 3.10.3 - Power Generation</p>	<p>parallel circuits, electrical resistance, electrical current, resistance, electric current, series circuits, current, electric fields, material properties, conductivity, electrical circuits, circuits, resistivity, transformers, direct current, electric generators, induced current, generators, metal detectors, power generation, electric motors, alternating current, motors, electromotive force, induction devices</p>	<p>Teacher-made formative and summative assessments.</p> <p>Mr. Circuit Electronic Kits Labs 1-10</p> <p>Savvas Resources: Inquiry Lab: Electric Motors and Generators Performance-Based Assessment: Build a DC Motor</p>

Strand	State Standard	SPS Learning Goals	Unit	Vocabulary	Assessment/Benchmark/Activity
	<p>SC.HSP.16.4.F Design a solution to a problem using the fact that an electric current can produce a magnetic field and/or that a changing magnetic field can produce an electric current.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand how a change in magnetic field can induce a current in an electrical system. •Understand that an electric current generates a magnetic field. 	<p>2.5.2 - Inducing Magnetism 2.5.3 - Inducing Current 4.13.3 - Capturing and Transmitting Energy</p>	<p>motor, magnetic fields, torque, geomagnetic field, pole reversal, geodynamo, magnetic force, current, loop of wire, torque on a current-carrying loop, Biot-Savart Law, solenoid, charge density, helical motion, electromagnet, brushed direct current motor, magnetic flux, motional EMF, Induction, tesla, Lenz's law, alternating current, eddy current, wireless charging, inducing Current, wireless induction, charger, area vector, electromotive force, EMF, Faraday's Law, digital signals, digital transmission, digital information, memory, digital code, computer memory, storage of information, digital storage, physical storage, information storage, Analog signals, antenna, transmit information, wave behavior, sensors, wave behaviour, information, capture information, medical imaging</p>	<p>Teacher-made formative and summative assessments.</p> <p>Savvas Resources: Inquiry Lab: Electric Motors and Generators Performance-Based Assessment: Build a DC Motor</p>
	<p>SC.HSP.16.4.G Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.</p>	<p>The learner will:</p> <ul style="list-style-type: none"> •Understand criteria and constraints to chosen global challenges and be able to analyze these challenges to discuss a solution that will meet societal needs and possibly advance society. •Be able to design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solves through engineering. 	<p>3.8.1 - Momentum and Impulse 3.8.2 - Conservation of Momentum 3.10.3 - Power Generation 4.13.2 - Capturing and Trasmitting Information 4.13.3 - Capturing and Transmitting Energy</p>	<p>Momentum, Impulse, Collision, Inelastic Collision, Elastic Collision, Energy, Power, transformers, direct current, electric generators, induced current, generators, metal detectors, power generation, electric motors, alternating current, motors, electromotive force, induction devices, digital signals, digital transmission, digital information, memory, digital code, computer memory, storage of information, digital storage, physical storage, information storage, Analog signals, antenna, transmit information, wave behavior, sensors, wave behaviour, information, capture information, medical imaging</p>	<p>Teacher-made formative and summative assessments.</p> <p>Supplemental Bridge Building Project, Egg Drop / Egg Transport Vehicle</p> <p>Savvas Resources: Inquiry Lab: Natural Resource Management Performance-Based Assessment: Build Your Own Egg-Transport Vehicle, Minimizing Car Crash Injuries</p>

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/Activity
Structure and Function	SC.HSP.6 Structure and Function				
	SC.HSP.6.1 Gather, analyze and communicate evidence of the relationship between structure and function in living things.	Students will be required to use lab equipment properly with each lab. Students will go through a safety video and worksheet on lab equipment	Unit 1: Study of Life	Fact, principle, law, theory, Qualitative, Quantitative, Independent Variable, Dependent Variable, Constants/Controlled Variables, Experimental Group, Control Group, Technology, Engineering, Hypothesis, Scientific Method	Curricular resources and/or teacher created assessment (s)
	SC.HSP.6.1.A Construct and explanation based on evidence for how the sequence of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.	Students will be able to identify the parts of the DNA structure. Students will be able to explain the base pairing rules of DNA. Provide an example of a strand of DNA with its complementary strand. Students will be able to compare and contrast DNA and RNA. Students will be able to explain the base pairing rules of DNA and RNA. Students will be able to explain the central dogma and why a two-step process is necessary in order to make proteins. Students will be able to describe the roles of 2 out of the 3 essential types of RNA in protein synthesis. Students will be able to summarize, in detail, the steps of transcription. Students will be able to summarize, in detail, the steps of translation. Students will be able to transcribe and translate a strand of DNA	Unit 7: Protein Synthesis	Protein synthesis, Central Dogma, Polypeptide, Transcription, Translation, Genetic Code, Codon, Anticodon, Amino Acid, Epigenetics, Nucleotide, Chromosome, Gene, Nucleic Acid, mRNA, tRNA,	Curricular resources and/or teacher created assessment (s)
	SC.HSP.6.1.B Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.	Students will be able to identify / draw the relationship between cell, tissue, organ, organ system	Unit 2: Cell Structure and function	Cell, Tissue, organ, organ system,	Curricular resources and/or teacher created assessment (s)
	SC.HSP.6.1.C Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.	Students will explain the role of the cell membrane in maintaining homeostasis on a cellular level. Students will be able to describe (either with words or drawings) the difference between hypotonic, isotonic, and hypertonic solutions.	Unit 2: Cell Structure and Function	Cell membrane, plasma membrane, hypotonic, hypertonic, isotonic, diffusion, osmosis,	Curricular resources and/or teacher created assessment (s)
	SC.HSP.6.1.D Use a model to illustrate the role of cell signaling and cell communication in producing and maintaining cellular functions within organisms.	Students will be able to explain the central dogma and why a two-step process is necessary in order to make proteins. Students will be able to summarize, in detail, the steps of transcription. Students will be able to summarize, in detail, the steps of translation. Students will be able to transcribe and translate a strand of DNA	Unit 2: Cell Structure and Function	Cell membrane, plasma membrane, hypotonic, hypertonic, isotonic, diffusion, osmosis, transcription, translation, replication, mRNA, tRNA, proteins, homeostasis, solvent, solution, solute, concentration	Curricular resources and/or teacher created assessment (s)
	SC.HSP.6.1.E Construct an explanation based on evidence that plants have structures that function to support survival, growth, behavior and reproduction.	Students will be able to define and describe the process of photosynthesis. Students will be able to compare and contrast the difference between photosynthesis and cellular respiration. Students will be able to write and interpret the chemical formula for photosynthesis. Label the reactants and the products.	Unit 3: Photosynthesis & Cellular Respiration	metabolism, chemical reactions, reactants, products, enzyme, active site, ATP, ADP, producer, consumer, photosynthesis, chlorophyll, cellular respiration, aerobic, anaerobic, fermentation,	Curricular resources and/or teacher created assessment (s)

	<p>SC.HSP.6.1.F Construct an explanation based on evidence that animals have structures that function to support survival, growth, behavior, and reproduction.</p>	<p>Students will be able to define and describe the process of cellular respiration. Students will be able to compare and contrast the difference between photosynthesis and cellular respiration. Students will be able to write and interpret the chemical formula for cellular respiration. Label the reactants and the products. Students will be able to explain the difference between aerobic and anaerobic respiration.</p>	<p>Unit 3: Photosynthesis & Cellular Respiration</p>	<p>metabolism, chemical reactions, reactants, products, enzyme, active site, ATP, ADP, producer, consumer, photosynthesis, chlorophyll, cellular respiration, aerobic, anaerobic, fermentation,</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
<p>Interdependent Relationships in Ecosystems</p>	<p>SC.HSP.7 Interdependent Relationships in Ecosystems</p>				
	<p>SC.HSP.7.2 Gather, analyze, and communicate evidence of interdependent relationships in ecosystems.</p>	<p>Students will be able to list the levels of ecological organization, starting with the broadest to the most specific. Students will be able to identify organisms as autotrophs or heterotrophs and further identify the type of heterotroph. Students will be able to draw and label a food chain/web using arrows to show the flow of energy</p>	<p>Unit 9: Ecology</p>	<p>Ecology, Metabolism, Organism, Population, Community, Ecosystem, Biome, Biosphere, Biodiversity, abiotic, biotic factors</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
	<p>SC.HSP.7.2.A Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.</p>	<p>Students will be able to list factors that contribute to a high population density vs. a low population density. Students will be able to explain the difference between logistic and exponential population growth</p>	<p>Unit 9: Ecology</p>	<p>Carrying Capacity, Exponential growth, Survivorship curve, Population, population density, logistic growth, limiting factors, biotic, abiotic, density-dependent, density-independent</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
	<p>SC.HSP.7.2.B Use mathematical representation to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.</p>	<p>Students will be able to sketch and label a picture of the three types of dispersion patterns. Students will be able to cite specific examples of each type of limiting factor. Students will be able to list factors that contribute to a high population density vs. a low population density. Students will be able to explain the difference between logistic and exponential population growth</p>	<p>Unit 9: Ecology</p>	<p>Carrying Capacity, Exponential growth, Survivorship curve, Population, population density, logistic growth, limiting factors, biotic, abiotic, density-dependent, density-independent</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
	<p>SC.HSP.7.2.C Evaluate the claims, evidence, and reasoning related the principle that complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.</p>	<p>Students will be able to draw and label a food chain/web using arrows to show the flow of energy. Students will be able to draw and label a food web based on the pyramid of numbers, biomass, and energy</p>	<p>Unit 9: Ecology</p>	<p>Food web, food chain, organism, producer, autotroph, herbivore, omnivore, carnivore, trophic levels, biomass, pyramid of numbers, energy, predator, prey, symbiosis</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
	<p>SC.HSP.7.2.D Design, evaluate, and refine a solution for increasing the positive impacts of human activities on the environment and biodiversity.</p>	<p>Students will be able to classify limiting factors as density dependent, density-independent, biotic and abiotic factors. Infer how a population's growth would be affected by a change in the availability of any limiting factor.</p>	<p>Unit 9: Ecology</p>	<p>Carrying Capacity, Exponential growth, Survivorship curve, Population, population density, logistic growth, limiting factors, biotic, abiotic, density-dependent, density-independent</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
	<p>SC.HSP.7.2.E Create or revise a simulation to test a solution to mitigate the impacts of human activity on biodiversity.</p>	<p>Students would be able to show how a population's density could effect the organisms and the amount of space, etc. Interpret a graph to show the population size and impact. List three ways humans threaten biodiversity. Examples of renewable and nonrenewable resources.</p>	<p>Unit 9: Ecology</p>	<p>habitat, niche, sustainability, ecological (carbon) footprint, greenhouse effect, invasive species, ecological succession, primary succession, secondary succession, stable ecosystem</p>	<p>Curricular resources and/or teacher created assessment (s)</p>

	SC.HSP.7.2.F Evaluate evidence for the role of behavior on individual and species' chances to survive and reproduce.	Students will explain how diversity within a species has resulted in an increase in fitness (survival of the fittest). Students will be able to explain mechanisms of speciation.	Unit 9: Ecology / Unit 8 Evolution	Survival of the fittest, adaptation, speciation, evolution, barriers, adaptive radiation, gene flow, genetic drift, fitness, microevolution, macroevolution, sexual selection	Curricular resources and/or teacher created assessment (s)
Matter and Energy in Organisms and Ecosystems	SC.HSP.8 Matter and Energy in Organisms and Ecosystems				
	SC.HSP.8.3 Gather, analyze, and communicate evidence of the flow of energy and cycling of matter in organisms and ecosystems.	Students will be able to list the levels of ecological organization, starting with the broadest to the most specific. Students will be able to identify organisms as autotrophs or heterotrophs and further identify the type of heterotroph. Students will be able to draw and label a food chain/web using arrows to show the flow of energy	Unit 9: Ecology	Ecology, Metabolism, Organism, Population, Community, Ecosystem, Biome, Biosphere, Biodiversity, abiotic, biotic factors, autotrophs, producers, heterotrophs, herbivores, carnivores, omnivores, food web, food chain, energy flow	Curricular resources and/or teacher created assessment (s)
	SC.HSP.8.3.A Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.	Students will be able to draw and label a food web based on the pyramid of numbers, biomass, and energy. Students will be able to explain why matter must cycle. Students will be able to compare and contrast the difference between photosynthesis and cellular respiration	Unit 9: Ecology; Unit 3: Photosynthesis & Cellular Respiration	producers, autotrophs, heterotrophs, biomass, energy, herbivores, omnivores, carnivores, light energy, ATP, reactants, products	Curricular resources and/or teacher created assessment (s)
	SC.HSP.8.3.B Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other molecules to form amino acids and/or other large carbon-based molecules.	Students will be able to identify the 4 Macromolecules, explain the major functions of each macromolecule and provide an example for each type. Also be able to identify the 4 elements found in all living things and which elements the macromolecules contain. Students will be able to explain the central dogma and why a two-step process is necessary in order to make proteins. Students will be able to summarize, in detail, the steps of transcription. Students will be able to summarize, in detail, the steps of translation	Unit 3: Chemistry of Life, Photosynthesis & Cellular Respiration; Unit 7: Protein Synthesis	Carbohydrates, Lipids, Proteins, Nucleic Acids, Carbon, Hydrogen, Oxygen, Nitrogen, proteins, amino acids, transcription, translation, central dogma,	Curricular resources and/or teacher created assessment (s)
	SC.HSP.8.3.C Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.	Students will be able to explain the purpose of energy, what it is and the purpose of ATP. Students will be able to draw the structure and label the parts of a molecule of ATP. Students will be able to describe the ATP-ADP cycle. Students will be able to explain what the energy is used for when a phosphate is removed, & where that energy initially come from. Students will be able to define and describe the process of cellular respiration.	Unit 3: Chemistry of Life, Photosynthesis & Cellular Respiration	energy, ATP, ADP, AMP, phosphate, cellular respiration, chemical reactions, reactant, product, active site, metabolism, catabolic, anabolic, endothermic, exothermic, denaturation	Curricular resources and/or teacher created assessment (s)
	SC.HSP.8.3.D Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.	Students will be able to define and describe the process of cellular respiration. Students will be able to write and interpret the chemical formula for cellular respiration. Label the reactants and the products. Students will be able to explain the difference between aerobic and anaerobic respiration.	Unit 3: Chemistry of Life, Photosynthesis & Cellular Respiration	food/glucose, oxygen, water, ATP, carbon dioxide, reactants, products, aerobic, anaerobic, fermentation, lactic acid fermentation, alcoholic fermentation	Curricular resources and/or teacher created assessment (s)
	SC.HSP.8.3.E Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.	Students will be able to summarize in words or drawings the specific stages in each biogeochemical cycle (water, carbon, and nitrogen cycles).	Unit 9: Ecology	cycle, matter, carbon, water, nitrogen, liquid, gas, solid, condensation, melting, freezing, evaporation, sublimation, deposition, runoff	Curricular resources and/or teacher created assessment (s)

	<p>SC.HSP.8.3.F Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.</p>	Students will be able to compare and contrast the difference between photosynthesis and cellular respiration. Students will create a poster representation explaining/illustrating photosynthesis and cellular respiration	Unit 3: Chemistry of Life, Photosynthesis & Cellular Respiration; Unit 9: Ecology	sunlight, ATP, water, carbon dioxide, oxygen, photosynthesis, cellular respiration	Curricular resources and/or teacher created assessment (s)
	<p>SC.HSP.8.3.G Use models to illustrate how atomic structure and bonding impact the properties of water and their influence on biological systems.</p>	List the levels of organization of that make up an organism starting with an atom and ending with an organism. Differentiate between polar and nonpolar molecules. Explain the properties of water that make it such a unique molecule.	Unit 3: Chemistry of Life	atom, molecule, cell, tissue, organ, organ system, organism, polar, nonpolar	Curricular resources and/or teacher created assessment (s)
	<p>SC.HSP.8.3.H Construct an explanation based on evidence for how ATP powers cellular work and for how enzymes affect the rate of and the amount of energy needed for metabolic reactions.</p>	Explain the purpose of ATP. Draw the structure and label the parts of a molecule of ATP. Describe the ATP-ADP cycle. Include what is and is not recycled. Explain what the energy is used for when a phosphate is removed, and where that energy initially comes from. Summarize the overall process of breaking down ATP	Unit 3: Chemistry of Life, Photosynthesis & Cellular Respiration	cellular respiration, ATP, ADP, AMP, phosphate, tri, di, mono, adenosine, sucrose, sun, glucose, carbohydrates, synthesis reaction, decomposition reaction, chemical reaction, metabolism, catabolic, anabolic, substrate, product, endothermic, exothermic, enzyme, catalyst, active site, denaturation	Curricular resources and/or teacher created assessment (s)
Inheritance and Variation of Traits	<p>SC.HSP.9 Inheritance and Variation of Traits</p>				
	<p>SC.HSP.9.4 Gather, analyze, and communicate evidence of the inheritance and variation of traits.</p>	Summarize Mendel's experiments, and the three laws of inheritance that make up the foundation of Mendelian genetics. Students will be able to create a monohybrid cross and write out samples. Create an example of a dihybrid cross. Solve punnett squares and determine the phenotypic and genotypic ratios for the examples	Unit 6: Introduction to Genetics/ Human Heredity	Genes, Alleles, Homologous chromosomes, Homozygous, Heterozygous, Dominant,, Recessive, Geneotype, Phenotype, Punnett square, Monohybrid cross, Dihybrid cross, Probability, Law of Dominance, Law of Segregation, Carrier, Nondisjunction, Pedigree, Mutation, Mutagen, Genotypic ratio, Phenotypic ratio, Heredity, Genetics	Curricular resources and/or teacher created assessment (s)
	<p>SC.HSP.9.4.A Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.</p>	Students will be able to explain the basic process of Mitosis and explain the significance of this process. Students will be able to sketch a picture of a cell going through the phases of Mitosis (flip cards). Key events will be displayed / described in their drawings.	Unit 4: Mitosis	Cell cycle, chromosomes, gene, sister chromatids, centromere, cancer, metastasize, carcinogens, mitosis, cytokinesis, prophase, metaphase, anaphase, telophase, spindle fibers, organelles (all organelle vocabulary), centromeres, microtubules & microfilaments	Curricular resources and/or teacher created assessment (s)
	<p>SC.HSP.9.4.B Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.</p>	Students will be able to differentiate between autossomes and sex chromosomes by looking at a karyotype. Students will be able to describe the difference between somatic cells and gametes. Students will be able to Identify the parts of the DNA structure. Explain how DNA carries the genetic instructions. Students will be able to summarize the key differences in purpose and results of meiosis and mitosis. Students will be able to explain the difference between traits inherited on sex chromosomes and traits inherited on autosomes	Unit 4: Mitosis & Unit 5 Meiosis	Mitosis, Meiosis, genes, alleles, chromosomes, sister chromatids, centromere, haploid, diploid, gametes, somatic cells, autosomes, sex chromosomes, karyotype, sexual reproduction, fertilization, homologous chromomes, nucleic acid, nucleotide, genetic code	Curricular resources and/or teacher created assessment (s)

	<p>SC.HSP.9.4.C Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations cause by environmental factors.</p>	<p>Students will be able to summarize the key differences in purpose and results of meiosis and mitosis. Students will be able to explain the difference between a mistake made during meiosis and a mistake made during mitosis. Make claims about how crossing over and independent assortment lead to genetic variations. Explain where and how mutations can occur which can lead to genetic variations.</p>	<p>Unit 4: Mitosis & Unit 5 Meiosis</p>	<p>Mitosis, Meiosis, genes, alleles, chromosomes, sister chromatids, centromere, haploid, diploid, gametes, somatic cells, autosomes, sex chromosomes, karyotype, sexual reproduction, fertilization, homologous chromosomes, nucleic acid, nucleotide, genetic code, mutation, independent assortment, crossing over, genetic variation, nondisjunction</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
	<p>SC.HSP.9.4.D Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.</p>		<p>Unit 5: Meiosis</p>	<p>probability, population, community, distribution</p>	
	<p>SC.HSP.9.4.F Construct an explanation based on evidence for the role of biotechnology in the research and understanding of biological systems.</p>	<p>Research a topic in biotechnology and explain how it relates to genetics, genetic variation, and the understanding of biological systems.</p>	<p>Unit 5: Meiosis</p>	<p>Biotechnology, Genetic engineering, recombinant DNA, Genome, gene map, restriction enzymes, gene cloning, Selective breeding, Stem cells, GMO, Pharming, Transformation, Gel electrophoresis, Polymerase chain reaction</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
Biological Evolution	<p>SC.HSP.10. Biological Evolution</p>				
	<p>SC.HSP.10.5 Gather, analyze, and communicate evidence of biological evolution.</p>	<p>Students will be able to explain the principles of natural selection</p>	<p>Unit 8: Evolution</p>	<p>Natural Selection, fitness, adaptation, mimicry, camouflage</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
	<p>SC.HSP.10.5.A Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.</p>	<p>Students will be able to explain the principles of natural selection</p>	<p>Unit 8: Evolution</p>	<p>Fitness, Natural selection, evolution</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
	<p>SC.HSP.10.5.B Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.</p>	<p>Students will explain how diversity within a species has resulted in an increase in fitness (survival of the fittest). Students will be able to list the different factors that contribute to genetic variation and explain which is considered to be the "ultimate" source. Students will be able to explain what is meant by the phrase, "individuals don't evolve, populations do".</p>	<p>Unit 8: Evolution</p>	<p>Evolution, Microevolution, Macroevolution, Natural selection, fitness, adaptation, gene pool, genetic drift, gene flow, sexual selection, genetic equilibrium, species, adaptive radiation, fossils, Paleontology, biogeography, embryology, biochemistry, endosymbiosis</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
	<p>SC.HSP.10.5.C Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.</p>	<p>Students will explain how diversity within a species has resulted in an increase in fitness (survival of the fittest). Students will be able to list the different factors that contribute to genetic variation and explain which is considered to be the "ultimate" source. Students will be able to explain what is meant by the phrase, "individuals don't evolve, populations do".</p>	<p>Unit 8: Evolution</p>	<p>Evolution, Microevolution, Macroevolution, Natural selection, fitness, adaptation, gene pool, genetic drift, gene flow, sexual selection, genetic equilibrium, species, adaptive radiation, fossils, Paleontology, biogeography, embryology, biochemistry, endosymbiosis</p>	<p>Curricular resources and/or teacher created assessment (s)</p>

	<p>SC.HSP.10.5.D Construct to an explanation based on evidence for how natural selection leads to adaptation of populations.</p>	<p>Students will be able to describe at least three mechanisms of evolution. Students will be able to differentiate between gradualism and punctuated equilibrium. Students will be able to explain mechanisms of speciation</p>	<p>Unit 8: Evolution</p>	<p>speciation, gradualism, punctuated equilibrium, evolution</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
	<p>SC.HSP.10.5.E Evaluate evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species,(2) the emergence of new species over time, and (3) the extinction of other species.</p>	<p>Students will be able to differentiate between speciation and extinction. Students will explain how diversity within a species has resulted in an increase in fitness (survival of the fittest). Students will be able to list the different factors that contribute to genetic variation and explain which is considered to be the "ultimate" source. Students will be able to explain what is meant by the phrase, "individuals don't evolve, populations do".</p>	<p>Unit 8: Evolution</p>	<p>Evolution, Microevolution, Macroevolution, Natural selection, fitness, adaptation, gene pool, genetic drift, gene flow, sexual selection, genetic equilibrium, species, adaptive radiation, fossils, Paleontology, biogeography, embryology, biochemistry, endosymbiosis</p>	<p>Curricular resources and/or teacher created assessment (s)</p>
	<p>SC.HSP.10.5.F Develop and use models to illustrate patterns in the evolutionary history of biological diversity.</p>	<p>Students will be able to draw and interpret a graph on evolution/adaptive radiation / speciation</p>	<p>Unit 8: Evolution</p>	<p>evolution, adaptive radiation, speciation, punctuated equilibrium, gradualism, phylogenetic tree, phylogeny</p>	<p>Curricular resources and/or teacher created assessment (s)</p>

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/Activity
Skeletal System	SC.HSP.6.3 Gather, analyze, and communicate evidence of the relationship between the structures and physiological processes of the skeletal system.	S.W.D. knowledge of the five functions of the skeleton. S.W.D. knowledge of the structure and function of the long bone.	Unit 1 Skeletal System - Anatomy		teacher created quiz, teacher created unit test
	SC.HSP.6.3.A Communicate scientific information that explains the patterns of organization in the skeletal system.	S.W.D. an understanding anatomical position and directional terminology. S.W.D. knowledge of the structure and function of the long bone.	Unit 1 Skeletal System - Anatomy	anatomical position, superior, inferior, anterior, posterior, medial, lateral, distal, proximal	informal assessment (think/pair/share), teacher created quiz, teacher created unit test
	SC.HSP.6.3.B Develop and use a model to identify and describe the relationship between the structures and physiological processes of the skeletal system.	S.W.D. knowledge of the structure and function of the long bone. S.W.D. knowledge of the five functions of the skeleton.	Unit 1 Skeletal System - Anatomy	hemopoiesis, epiphysis, diaphysis, periosteum, endosteum	informal assessment (demonstration), teacher created quiz, teacher created unit test
	SC.HSP.C Plan and conduct an investigation to gather evidence that feedback mechanisms in the skeletal system help maintain homeostasis.	S.W.D. knowledge of the five functions of the skeleton.	Unit 1 Skeletal System - Anatomy		informal assessment (Kahoot), teacher created quiz, teacher created unit test

	SC.HSP.6.3.D Develop and use a model to explain the order of events necessary for bone formation.	S.W.D. an understanding of the role of osteoblasts & osteoclasts in new bone formation.	Unit 1 Skeletal System - Anatomy	osteoblast, osteoclast, lamellae, Haversian Canal	informal assessment (Kahoot), teacher created quiz, teacher created unit test
	SC.HSP.6.3.E Construct and present arguments using evidence to support claims about the causes of dysfunction in the skeletal systems.	S.W.D. an understanding of identified diseases and disorders of the skeletal system.	Unit 1 Skeletal System - Anatomy	osteoporosis, osteomalacia, osteomyelitis, kyphosis, lordosis, scoliosis	informal assessment (Kahoot), teacher created quiz, teacher created unit test
	SC.HSP.6.3.F Develop and use a model to explain the relationship between the skeletal system and other body systems.	S.W.D. knowledge of the five functions of the skeleton.	Unit 1 Skeletal System - Anatomy		informal assessment (think/pair/share), teacher created quiz, teacher created unit test
	SC.HSP.6.4 Gather, analyze, and communicate evidence of the relationship between the structures and physiological processes of the muscular system.	S.W.D. knowledge of the three functions of muscles.	Unit 2 Muscular System - Anatomy		teacher created quiz, teacher created unit test
	SC.HSP.6.4.A Communicate scientific information that explains the patterns of organization in the muscular system.	S.W.D. an understanding anatomical position and directional terminology. S.W.D. knowledge of the structure and function of skeletal muscle.	Unit 2 Muscular System - Anatomy	fascicle, fiber, fibril, filament	informal assessment (Kahoot), teacher created quiz, teacher created unit test
	SC.HSP.6.4.B Develop and use a model to identify and describe the relationship between the structures and physiological process of the muscular system.	S.W.D. knowledge of the structure and function of skeletal muscle.	Unit 2 Muscular System - Anatomy	sarcoplasmic reticulum	informal assessment (demonstration), teacher created quiz, teacher created unit test

Muscular System	SC.HSP.6.4.C Construct an argument based on evidence that muscle contraction is the result of biochemical reactions.	S.W.D. knowledge of the structure and function of skeletal muscle.	Unit 2 Muscular System - Anatomy	actin, myosin, troponin, tropomyosin, cross bridges	informal assessment (think/pair/share), teacher created quiz, teacher created unit test
	SC.HSP.6.4.D Plan and conduct an investigation to gather evidence that feedback mechanisms in the muscular system help maintain homeostasis.	Not taught in this course	NA	NA	NA
	SC.HSP.6.4.E Construct and present arguments using evidence to support claims about the causes of dysfunction in the muscular system.	S.W.D. knowledge of the structure and function of skeletal muscle.	Unit 2 Muscular System - Anatomy		informal assessment (demonstration), teacher created quiz, teacher created unit test
	SC.HSP.6.4.F Develop and use a model to explain the relationship between the muscular system and other body systems.	S.W.D. knowledge of the three functions of muscles.	Unit 2 Muscular System - Anatomy		teacher created quiz, teacher created unit test
	SC.HSP.6.4.G Construct and revise an explanation based on evidence for the role of the muscular system in the cycling of matter and flow of energy among body systems.	S.W.D. knowledge of the three functions of muscles.	Unit 2 Muscular System - Anatomy		informal assessment (think/pair/share), teacher created quiz, teacher created unit test
	SC.HSP.6.5 Gather, analyze, and communicate evidence of the relationship between the structures and physiological processes of the nervous system.	S.W.D. knowledge of the function of neurons, and alternate ways the body communicates with itself.	Unit 3 Nervous System - Anatomy		teacher created quiz, teacher created unit test, performance based (lab)

Nervous System	SC.HSP.6.5.A Communicate scientific information that explains the patterns of organization in the nervous system	S.W.D. knowledge of the function of neurons, and alternate ways the body communicates with itself.	Unit 3 Nervous System - Anatomy	neuron, axon, cell body, terminals, Schwann cells, sensory neuron, motor neuron, brain neuron	informal assessment (think/pair/share), teacher created quiz, teacher created unit test
	SC.HSP.6.5.B Develop and use a model to identify and describe relationship between the structures and physiological processes of the nervous system.	S.W.D. knowledge of the function of neurons, and alternate ways the body communicates with itself. S.W.D. knowledge of the structure and function of a motor neuron as it relates to an impulse.	Unit 3 Nervous System - Anatomy	synapse, synaptic cleft, neurotransmitter	informal assessment (Kahoot), teacher created quiz, teacher created unit test
	SC.HSP.6.5.C Construct an argument based on evidence that production of a nerve impulse is the result of biochemical reactions.	S.W.D. knowledge of the structure and function of a motor neuron as it relates to an impulse. S.W.D. an understanding of how neurons interact with each other in order to send messages.	Unit 3 Nervous System - Anatomy		informal assessment (Kahoot), teacher created quiz, teacher created unit test
	SC.HSP.6.5.D Plan and conduct an investigation to gather evidence that feedback mechanisms in the nervous system help maintain homeostasis.	S.W.D. an understanding of how neurons interact with each other in order to send messages.	Unit 3 Nervous System - Anatomy		informal assessment (think/pair/share), teacher created quiz, teacher created unit test

	SC.HSP.6.5.E Construct and present arguments using evidence to support claims about the causes of dysfunction in the nervous system	S.W.D. an understanding of how drugs can influence and alter the brain.	Unit 3 Nervous System - Anatomy		informal assessment (think/pair/share), teacher created quiz, teacher created unit test
	SC.HSP.6.5.F Develop and use a model to explain the relationship between the nervous system and other body systems.	S.W.D. an understanding of how neurons interact with muscles in order to cause a contraction.	Unit 3 Nervous System - Anatomy		informal assessment (demonstration), teacher created quiz, teacher created unit test
	SC.HSP.6.5.G Construct and revise an explanation based on evidence for the role of the nervous system in the cycling of matter and flow of energy among body systems.	Not taught in this course	NA	NA	NA
	SC.HSP.6.6 Gather, analyze, and communicate evidence of the relationship between the structures and physiological processes of the cardiovascular/respiratory systems.	S.W.D. an understanding of pulmonary and systemic circulation. S.W.D. knowledge about the structure and function of the organs of the circulatory system. S.W.D. knowledge of the function of the respiratory system.	Unit 3 Circulatory System - Physiology & Unit 4 Respiratory/Urinary System - Physiology		teacher created quiz, teacher created unit test, performance based (lab)

Circulatory System Respiratory System	<p>SC.HSP.6.6.A Communicate scientific information that explains the patterns of organization in the cardiovascular/respiratory systems.</p>	<p>S.W.D. knowledge of the function of the respiratory system. S.W.D. knowledge about the structure and function of the organs of the circulatory system.</p>	<p>Unit 2 Circulatory System - Physiology & Unit 3 Respiratory/Urinary System - Physiology</p>	<p>breathing, respiration, pulse, systolic, diastolic, pulmonary circulation, systemic circulation</p>	<p>informal assessment (Kahoot), teacher created quiz, teacher created unit test</p>
	<p>SC.HSP.6.6.B Develop and use a model to identify and describe the relationship between the structures and physiological processes of the cardiovascular/respiratory systems.</p>	<p>S.W.D. knowledge of the function of the respiratory system. S.W.D. knowledge about the structure and function of the organs of the circulatory system.</p>	<p>Unit 2 Circulatory System - Physiology & Unit 3 Respiratory/Urinary System - Physiology</p>	<p>erythrocytes, leukocytes, thrombocytes, alveoli, air sacs, alveolar ducts</p>	<p>informal assessment (Kahoot), teacher created quiz, teacher created unit test</p>
	<p>SC.HSP.6.6.C Plan and conduct an investigation to gather evidence that feedback mechanisms in the cardiovascular/respiratory system help maintain homeostasis.</p>	<p>S.W.D. knowledge of the three functions of the circulatory system. S.W.D. knowledge of the function of the respiratory system. S.W.D. an understanding of the process of respiration.</p>	<p>Unit 2 Circulatory System - Physiology & Unit 3 Respiratory/Urinary System - Physiology</p>		<p>teacher created quiz, teacher created unit test</p>

	<p>SC.HSP.6.6.D Construct and present arguments using evidence to support claims about the causes of dysfunction in the cardiovascular/respiratory systems.</p>	<p>S.W.D. knowledge of some circulatory abnormalities.</p>	<p>Unit 2 Circulatory System - Physiology & Unit 3 Respiratory/Urinary System - Physiology</p>	<p>arrhythmia, pericarditis, atherosclerosis, arteriosclerosis</p>	<p>informal assessment (think/pair/share), teacher created quiz, teacher created unit test</p>
	<p>SC.HSP.6.6.E Develop and use a model to explain the relationship between the cardiovascular/respiratory systems and other body systems.</p>	<p>S.W.D. knowledge of the functions of the digestive system (ingestion, digestion, absorption, elimination). S.W.D. knowledge of the three functions of the circulatory system. S.W.D. knowledge of the function of the respiratory system. S.W.D. an understanding of the process of respiration.</p>	<p>Unit 2 Circulatory System - Physiology & Unit 3 Respiratory/Urinary System - Physiology</p>		<p>informal assessment (demonstration), teacher created quiz, teacher created unit test</p>
	<p>SC.HSP.6.6.F Construct and revise an explanation based on evidence for the role of the cardiovascular/respiratory systems in the cycling of matter and flow of energy among body systems</p>	<p>S.W.D. an understanding of the process of respiration.</p>	<p>Unit 2 Circulatory System - Physiology & Unit 3 Respiratory/Urinary System - Physiology</p>		<p>informal assessment (think/pair/share), teacher created quiz, teacher created unit test</p>

	SC.HSP.6.8 Gather, analyze, and communicate evidence of the relationship between the structures and physiological processes of the urinary system.	S.W.D. knowledge of the three functions of the circulatory system. S.W.D. knowledge of the function of the urinary system.	Unit 3 Respiratory/Urinary System - Physiology		teacher created quiz, teacher created unit test, performance based (lab)
	SC.HSP.6.8.A Communicate scientific information that explains the patterns of organization in the urinary system.	S.W.D. knowledge about the structure and function of the organs of the urinary system.	Unit 3 Respiratory/Urinary System - Physiology		informal assessment (think/pair/share), teacher created quiz, teacher created unit test
Urinary System	SC.HSP.6.8.B Develop and use a model to identify and describe the relationship between the structures and physiological processes of the urinary system.	S.W.D. knowledge about the structure and function of the organs of the urinary system. S.W.D. knowledge of the function of the urinary system. S.W.D. an understanding about the processes of filtration, reabsorption, and excretion and the substances involved.	Unit 3 Respiratory/Urinary System - Physiology	glomerulus, Bowmans capsule, convoluted tubule, nephron	informal assessment (Kahoot), teacher created quiz, teacher created unit test

	SC.HSP.6.8.C Plan and conduct an investigation to gather evidence that feedback mechanisms in the urinary system help maintain homeostasis.	S.W.D. an understanding about the processes of filtration, reabsorption, and excretion and the substances involved.	Unit 3 Respiratory/Urinary System - Physiology	filtration, reabsorption, excretion, urination, metabolism	teacher created quiz, teacher created unit test
	SC.HSP.6.8.D Construct and present arguments using evidence to support claims about the causes of dysfunction in the urinary system.	S.W.D. knowledge about some urinary health issues.	Unit 3 Respiratory/Urinary System - Physiology		informal assessment (think/pair/share), teacher created quiz, teacher created unit test
	SC.HSP.6.8.E Develop and use a model to explain the relationship between the urinary system and other body systems.	S.W.D. knowledge about the structure and function of the organs of the urinary system. S.W.D. knowledge of the function of the urinary system. S.W.D. an understanding about the processes of filtration, reabsorption, and excretion and the substances involved.	Unit 3 Respiratory/Urinary System - Physiology		informal assessment (demonstration), teacher created quiz, teacher created unit test

	<p>SC.HSP.6.8.F Construct and revise an explanation based on evidence for the role of the urinary system in the cycling of matter and flow of energy among body systems.</p>	<p>Not taught in this course</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>
	<p>SC.HSP.6.9 Gather, analyze, and communicate evidence of the relationship between the structures and physiological processes of the reproductive system.</p>	<p>S.W.D. knowledge of the function of the reproductive system. S.W.D. knowledge about the structure and function of the organs of the male reproductive system. S.W.D. knowledge about the structure and function of the organs of the male reproductive system.</p>	<p>Unit 4 Reproductive System - Physiology</p>		<p>teacher created quiz, teacher created unit test</p>

Reproductive System	<p>SC.HSP.6.9.A Communicate scientific information that explains the patterns of organization in the reproductive system.</p>	<p>S.W.D. knowledge about the structure and function of the organs of the male reproductive system. S.W.D. knowledge about the structure and function of the organs of the male reproductive system.</p>	<p>Unit 4 Reproductive System - Physiology</p>	<p>gamete, haploid, diploid, meiosis, gonad, spermatogenesis, oogenesis</p>	<p>informal assessment (Kahoot), teacher created quiz, teacher created unit test</p>
	<p>SC.HSP.6.9.B Develop and use a model to identify and describe the relationship between the structures and physiological processes of the reproductive system.</p>	<p>S.W.D. knowledge about the structure and function of the organs of the male reproductive system. S.W.D. knowledge about the structure and function of the organs of the male reproductive system.</p>	<p>Unit 4 Reproductive System - Physiology</p>	<p>testes, ovary, sperm, egg/ovum, ejaculation, ovulation, follicle, corpus luteum</p>	<p>informal assessment (Kahoot), teacher created quiz, teacher created unit test</p>

	<p>SC.HSP.6.9.C Plan and conduct an investigation to gather evidence that feedback mechanisms in the reproductive system help maintain homeostasis.</p>	<p>S.W.D. knowledge about the structure and function of the organs of the male reproductive system. S.W.D. knowledge about the structure and function of the organs of the male reproductive system.</p>	<p>Unit 4 Reproductive System - Physiology</p>	<p>FSH, LH, testosterone, estrogen, progesterone, menstruation</p>	<p>teacher created quiz, teacher created unit test</p>
	<p>SC.HSP.6.9.D Construct and present arguments using evidence to support claims about the causes of dysfunction in the reproductive system.</p>	<p>Not taught in this course</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>
	<p>SC.HSP.6.9.E Develop and use a model to explain the relationship between the reproductive system and other body systems.</p>	<p>S.W.D. knowledge about the structure and function of the organs of the male and female reproductive system.</p>			<p>teacher created quiz, teacher created unit test</p>
	<p>SC.HSP.6.9.F Construct and revise an explanation based on evidence for the role of the reproductive system in the cycling of matter and flow of energy among body systems.</p>	<p>Not taught in this course</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>

Strand	AP Objectives	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/A activity
Unit 1 – Chemistry of Life:	- Structure of water and Hydrogen Bonding; Elements of Life; Macromolecules (Intro, Properties & structure) Nucleic Acids	1.1 Structure of Water and Hydrogen Bonding 2.A Describe characteristics of a biological concept, process, or model represented visually; 1.2 Elements of Life 2.A Describe characteristics of a biological concept, process, or model represented visually. 1.3 Introduction to Biological Macromolecules 2.A Describe characteristics of a biological concept, process, or model represented visually. 1.4 Properties of Biological Macromolecules 1.A Describe biological concepts and/ or processes. 1.5 Structure and Function of Biological Macromolecules 6.E.b Predict the causes or effects of a change in, or disruption to, one or more components in a biological system based on a visual representation of a biological concept, process, or model.	Campbell Biology Textbook, AP Central, Bozeman Science, AP Biology Investigative Labs	Fact, Principle, Law, Theory, Qualitative, Quantitative, Independent Variable, Dependent Variable, Constants, Controls, Experimental Group, Control Group, Matter, Atom, Cell, Surface Tension, Solution, Solute, Solvent, Hydrophilic, Hydrophobic, Macromolecules, Monomer, Polymer, Monosaccharide, Polysaccharide, Polar, Nonpolar	Introduction to inquiry, inquiry lab, basic graphing, water stations, molecules of life activities/cards, macromolecule activities
Unit 2 – Cell Structure & Function	Cell Structure & Function; Cell Size; Plasma Membranes; Membrane Permeability; Membrane Transport; Facilitated Diffusion; Tonicity & Osmoregulation; Mechanisms of Transport; Cell Compartmentalization; Origins of Cell Compartmentalization	2.1 Cell Structure: Subcellular Components 1.A Describe biological concepts and/or processes. 2.2 Cell Structure and Function 6.A Make a scientific claim. 2.3 Cell Size 2.D.a Represent relationships within biological models, including mathematical models. 5.A.d Perform mathematical calculations, including ratios. 2.4 Plasma Membranes 2.A Describe characteristics of a biological concept, process, or model represented visually. 2.5 Membrane Permeability 3.D Make observations or collect data from representations of laboratory setups or results. 5.D.b Use data to evaluate a hypothesis (or prediction), including supporting or refuting the alternative hypothesis. 2.7 Facilitated Diffusion 6.E.b Predict the causes or effects of a change in, or disruption to, one or more components in a biological system based on a visual representation of a biological concept, process, or model. 2.9 Mechanisms of Transport 1.B Explain biological concepts and/or processes. 2.10 Cell Compartmentalization 6.E.a Predict the causes or effects of a change in, or disruption to, one or more components in a biological system based on a biological concept or processes. 2.11 Origins of Cell Compartmentalization 6.B Support a claim with evidence from biological principles, concepts, processes, and/or data.	Campbell Biology Textbook, AP Central, Bozeman Science, AP Biology Investigative Labs	Unicellular, Multicellular, Organelle, Homeostasis, Solute, Solvent, Solution, Concentration, Differentiation, Stem cells, Cell cycle, Chromosome, Gene, Sister chromatids, centromere, telomere, cancer, Metastasis, carcinogens, diffusion, osmosis, permeability, tonicity, isotonic, hypertonic, hypotonic	Organelle games, plasma membrane lab (bubble lab), cell membrane model, transport labs & activities, water potential lab
Unit 3 – Cellular Energetics	Enzyme Structure; Enzyme Catalysis; Environmental Impacts on Enzyme Function; Cellular Energy; Photosynthesis; Cellular Respiration; Fitness	3.1 Enzyme Structure 1.B Explain biological concepts and/ or processes. 3.2 Enzyme Catalysis 3.C.b Identify experimental procedures that are aligned to the question, including identifying appropriate controls. 3.C.c Identify experimental procedures that are aligned to the question, including justifying appropriate controls. 3.4 Cellular Energy 6.C Provide reasoning to justify a claim by connecting evidence to biological theories. 3.5 Photosynthesis 6.B Support a claim with evidence from biological principles, concepts, processes, and/or data. 3.6 Cellular Respiration 4.A Construct a graph, plot, or chart. 3.7 Fitness 6.C Provide reasoning to justify a claim by connecting evidence to biological theories.		Enzyme, Metabolism, chemical reactions, catabolic, anabolic, activation energy, reactant (substrate), product, endothermic, exothermic, enzyme, catalyst, active site, denaturation, ATP, ADP, AMP, Producer, consumer, detritivore, carnivore, omnivore, herbivore, photosynthesis, Grana, Stroma, Chlorophyll, Chemosynthesis, Cellular Respiration, Inner membrane, Matrix, Aerobic, Anaerobic, Fermentation	Enzyme labs, photosynthesis labs & activities, cellular respiration labs & activities, fermentation labs/activities
Unit 4 – Cell Communication & Cell Cycle	Cell Communication; Signal Transduction; Signal Transduction Pathways; Feedback; Cell Cycle; Regulation of Cell Cycle	4.1 Cell Communication 1.B Explain biological concepts and/or processes. 4.2 Introduction to Signal Transduction 1.A Describe biological concepts and/or processes. 4.3 Signal Transduction 6.C Provide reasoning to justify a claim by connecting evidence to biological theories. 4.4 Changes in Signal Transduction Pathways 6.E.b Predict the causes or effects of a change in, or disruption to, one or more components in a biological system based on a visual representation of a biological concept, process, or model. 4.6 Cell Cycle 4.B.b Describe data from a table or graph, including describing trends and/or patterns in the data. 5.A.e Perform mathematical calculations, including percentages. 4.7 Regulation of Cell Cycle 6.E.a Predict the causes or effects of a change in, or disruption to, one or more components in a biological system based on biological concepts or processes	AP Central, Bozeman Science, AP Biology Investigative Labs	Autocrine, Juxtacrine, Paracrine, Endocrine, Receptors, Ligands, Signal Transduction, Transduction, Response, Ligand gated receptors, G-protein coupled receptors, Receptor Tyrosine Kinase, Kinase, Phosphorylation Cascade, Adenyl Cyclase, Apoptosis, Negative Feedback, Positive Feedback, Cell Cycle, Cancer, Checkpoints, Metastasis, Carcinogens, Tumor, G1, S, G2, Interphase, Prophase, Metaphase, Anaphase, Telophase,	Cell communication activities, signal transduction pathway activities, project, cell cycle activities

<p>Unit 5 - Heredity</p>	<p>Meiosis; Meiosis & Genetic Diversity; Mendelian Genetics; Non-Mendelian Genetics; Environmental Effects on Phenotype</p>	<p>5.1 Meiosis 1.B Explain biological concepts and/or processes. 5.2 Meiosis and Genetic Diversity 3.A Identify or pose a testable question based on an observation, data, or a model. 5.3 Mendelian Genetics 5.C Perform chi-square hypothesis testing. 6.E.c Predict the causes or effects of a change in, or disruption to, one or more components in a biological system based on data. 5.5 Environmental Effects on Phenotype 1.C Explain biological concepts, processes, and/or models in applied contexts. 5.6 Chromosomal Inheritance 6.E.b Predict the causes or effects of a change in, or disruption to, one or more components in a biological system based on a visual representation of a biological concept, process, or model.</p>	<p>AP Central, Bozeman Science, AP Biology Investigative Labs</p>	<p>Nucleic Acid, Nucleotide, Chromosome, Gene, Allele, Diploid, Haploid, Karyotype, Meiosis, Sexual Reproduction, Fertilization, Homologous chromosomes, Sister chromatids, somatic cells, gametes, autosomes, crossing over, independent assortment, Homozygous, Heterozygous, Dominant, Recessive, Genotype, Phenotype, Punnett Square, Monohybrid Cross, Dihybrid cross, Epistasis, Carrier, Chromosome theory of inheritance, Mutation, Mutagen, Duplication, Translocation, Nondisjunction, Pedigree, Biotechnology, Genetic engineering, Recombinant DNA, Genome, Gene Map, Restriction enzymes, Polymerase chain reaction, Gel electrophoresis, Gene cloning, Gene therapy, CRISPR, Stem cells, Selective breeding, Pharming, GMO, Inbreeding, Hybridization</p>	<p>Meiosis activity, practice of mendelian and non-mendelian laws, project</p>
<p>Unit 6 – Gene Expression & Regulation</p>	<p>DNA & RNA Structure; Replication; Transcription & RNA Processing; Translation; Regulation of Gene Expression; Gene Expression & Cell Specialization; Mutations; Biotechnology</p>	<p>6.1 DNA and RNA Structure 1.C Explain biological concepts, processes, and/or models in applied contexts. 6.2 Replication 2.B.b Explain relationships between different characteristics of biological concepts, processes, or models represented visually in applied contexts. 6.3 Transcription and RNA Processing 2.B.b Explain relationships between different characteristics of biological concepts, processes, or models represented visually in applied contexts. 6.5 Regulation of Gene Expression 6.A Make a scientific claim. 6.6 Gene Expression and Cell Specialization 6.B Support a claim with evidence from biological principles, concepts, processes, and/or data. 6.7 Mutations 2.C Explain how biological concepts or processes represented visually relate to larger biological principles, concepts, processes, or theories. 3.D Make observations or collect data from representations of laboratory setups or results. 6.8 Biotechnology 6.D Explain the relationship between experimental results and larger biological concepts, processes, or theories.</p>	<p>AP Central, Bozeman Science, AP Biology Investigative Labs</p>	<p>Central Dogma, polypeptide, transcription, translation, replication, genetic code, amino acids, codon, anticodon, epigenetics, ribosome, Nucleic acid, nucleotide, chromosome, gene, DNA, RNA, mRNA, tRNA, rRNA, mutations, point mutation, frameshift mutation, operon, promoter, inducible, repressible, RNA polymerase, helicase, template strand, coding strand, introns, exons, RNA splicing, poly-A tail, 5' cap</p>	<p>DNA and RNA activities and labs, Replicating Practice, Central Dogma lab and activities, Biotechnology lab</p>
<p>Unit 7 – Natural Selection</p>	<p>Natural Selection; Population Genetics; Hardy-Weinberg; Evidence of Evolution; Evolution; Phylogeny; Origin of Life on Earth</p>	<p>7.1 Introduction to Natural Selection 2.A Describe characteristics of a biological concept, process, or model represented visually. 7.2 Natural Selection 1.B Explain biological concepts and/or processes. 7.3 Artificial Selection 4.B.c Describe data from a table or graph, including describing relationships between variables. 7.4 Population Genetics 3.B State the null or alternative hypotheses, or predict the results of an experiment. 7.5 Hardy-Weinberg Equilibrium 5.A.a Perform mathematical calculations, including mathematical equations in the curriculum. 1.C Explain biological concepts, processes, and/ or models in applied contexts. 7.7 Common Ancestry 6.E.b Predict the causes or effects of a change in, or disruption to, one or more components in a biological system based on a visual representation of a biological concept, process, or model.</p>	<p>AP Central, Bozeman Science, AP Biology Investigative Labs</p>	<p>Evolution, microevolution, macroevolution, natural selection, fitness, adaptation, gene pool, genetic drift, gene flow, sexual selection, genetic equilibrium, species, adaptive radiation, paleontology, morphology, biogeography, embryology, biochemistry, fossils, endemic species, pseudogenes, taxonomy, binomial nomenclature, phylogeny, endosymbiosis, phylogenetic tree, homologous features, analogous features, vestigial features, embryology, biochemistry</p>	<p>Artificial Selection, Mathematical modeling: Hardy-Weinberg, Natural selection activities, Evidence for evolution stations, Creating Phylogenetic Trees</p>

<p>Unit 8 – Ecology</p>	<p>Responses to the Environment; Energy Flow through Ecosystems; Population Energy; Disruptions to Ecosystems</p>	<p>8.1 Responses to the Environment 3.C.a Identify experimental procedures that are aligned to the question, including identifying dependent and independent variables. 8.2 Energy Flow Through Ecosystems 6.D Explain the relationship between experimental results and larger biological concepts, processes, or theories. 8.3 Population Ecology 4.A Construct a graph, plot, or chart. 8.4 Effect of Density of Populations 5.A.c Perform mathematical calculations, including rates. 8.5 Community Ecology 5.B Use confidence intervals and/or error bars (both determined using standard errors) to determine whether sample means are statistically different. 8.6 Biodiversity 6.E.c Predict the causes or effects of a change in, or disruption to, one or more components in a biological system based on data. 8.7 Disruptions to Ecosystems 5.D.a Use data to evaluate a hypothesis (or prediction), including rejecting or failing to reject the null hypothesis. 5.D.b Use data to evaluate a hypothesis (or prediction), including supporting or refuting the alternative hypothesis.</p>	<p>AP Central, Bozeman Science, AP Biology Investigative Labs</p>	<p>Ecology, metabolism, organism, population, community, ecosystem, biome, biosphere, biodiversity, taxonomy, binomial nomenclature, cladogram, dichotomous key, biogeochemical cycles, population density, survivorship curve, exponential growth, logistic growth, carrying capacity, limiting factors, biotic, abiotic, density-dependent, density-independent, invasive species, sustainability, ecological footprint, greenhouse effect, ecological succession, primary succession, secondary succession, pioneer species, climax community, stable ecosystem, habitat, niche, predator, prey, keystone species, competitive exclusion principle, symbiosis</p>	<p>Population Modeling, Animal Behavior lab, Ecosystem Activities</p>
--------------------------------	---	--	---	--	---

Unit	Unit Strand	Learning Goal	SPS Learning Goal	Unit Curricular Resources Chapters and Pages	Vocabulary	Assessment/Benchmark/Activity
Unit 1: The Living World-Ecosystems	1.1 Introduction to Ecosystems	Explain how the availability of resources influences species interactions.	<p>*In a predator-prey relationship, the predator is an organism that eats another organism (the prey). *Symbiosis is a close and long-term interaction between two species in an ecosystem. Types of symbiosis include mutualism, commensalism, and parasitism. *Competition can occur within or between species in an ecosystem where there are limited resources. Resource partitioning—using the resources in different ways, places, or at different times—can reduce the negative impact of competition on survival.</p>	<p>Chapter 3, Evolution, Biodiversity, and Population Ecology, 46 Introduction to ecosystems, 59,110 Chapter 4, Species Interactions and Community Ecology, 72 Terrestrial and aquatic biome characteristics, 92-98 Chapter 5, Environmental Systems and Ecosystem Ecology, 102 Biogeochemical cycles (C,N,P, water), 117-128 Chapter 4, Species Interactions and Community Ecology, 72 Trophic levels, 77-82 Chapter 5, Environmental Systems and Ecosystem Ecology, 102 Primary productivity, GPP, NPP, 111 Energy flow and 10% Rule, 110-112 Food chains and food webs, 80-82</p>	Salinity Phytoplankton Littoral Limnetic Profundal Benthic Intertidal zone Temperate Rainforest Hydrologic Cycle Surface Water Oligotrophic Mesotrophic Eutrophic Climate Grasslands: Temperate, Savanna, Chaparral Desert Eutrophication Thermal Stratification Fall turnover Swamp Marsh Wetland Estuary Tropical Rain Forest Temperate Deciduous Temperature Precipitation Latitude Biome Tundra Permafrost Boreal Forest/Conifer Forest/Taiga	AP Classroom and Teacher Created Assessment
	1.2 Terrestrial Biomes	Describe the global distribution and principal environmental aspects of terrestrial biomes.	<p>*A biome contains characteristic communities of plants and animals that result from, and are adapted to, its climate. *Major terrestrial biomes include taiga, temperate rainforests, temperate seasonal forests, tropical rainforests, shrubland, temperate grassland, savanna, desert, and tundra. *The global distribution of nonmineral terrestrial natural resources, such as water and trees for lumber, varies because of some combination of climate, geography, latitude and altitude, nutrient availability, and soil. *The worldwide distribution of biomes is dynamic; the distribution has changed in the past and may again shift as a result of global climate changes.</p>			AP Classroom and Teacher Created Assessment
	1.3 Aquatic Biomes	Describe the global distribution and principal environmental aspects of aquatic biomes.	<p>*Freshwater biomes include streams, rivers, ponds, and lakes. These freshwater biomes are a vital resource for drinking water. *Marine biomes include oceans, coral reefs, marshland, and estuaries. Algae in marine biomes supply a large portion of the Earth's oxygen, and also take in carbon dioxide from the atmosphere. *The global distribution of nonmineral marine natural resources, such as different types of fish, varies because of some combination of salinity, depth, turbidity, nutrient availability, and temperature.</p>			AP Classroom and Teacher Created Assessment
	1.4 The Carbon Cycle	Explain the steps and reservoir interactions in the carbon cycle.	<p>*The carbon cycle is the movement of atoms and molecules containing the element carbon between sources and sinks. *Some of the reservoirs in which carbon compounds occur in the carbon cycle hold those compounds for long periods of time, while some hold them for relatively short periods of time. *Carbon cycles between photosynthesis and cellular respiration in living things. *Plant and animal decomposition have led to the storage of carbon over millions of years. The burning of fossil fuels quickly moves that stored carbon into atmospheric carbon, in the form of carbon dioxide.</p>			AP Classroom and Teacher Created Assessment
	1.5 Nitrogen Cycle	Explain the steps and reservoir interactions in the nitrogen cycle.	<p>*The nitrogen cycle is the movement of atoms and molecules containing the element nitrogen between sources and sinks. *Most of the reservoirs in which nitrogen compounds occur in the nitrogen cycle hold those compounds for relatively short periods of time. *Nitrogen fixation is the process in which atmospheric nitrogen is converted into a form of nitrogen (primarily ammonia) that is available for uptake by plants and that can be synthesized into plant tissue. *The atmosphere is the major reservoir of nitrogen.</p>			AP Classroom and Teacher Created Assessment
	1.6 Phosphorus Cycle	Explain the steps and reservoir interactions in the phosphorus cycle.	<p>*The phosphorus cycle is the movement of atoms and molecules containing the element phosphorus between sources and sinks. *The major reservoirs of phosphorus in the phosphorus cycle are rock and sediments that contain phosphorus-bearing minerals. *There is no atmospheric component in the phosphorus cycle, and the limitations this imposes on the return of phosphorus from the ocean to land make phosphorus naturally scarce in aquatic and many terrestrial ecosystems. In undisturbed ecosystems, phosphorus is the limiting factor in biological systems.</p>			AP Classroom and Teacher Created Assessment
	1.7 The Water (Hydrologic) Cycle	Explain the steps and reservoir interactions in the hydrologic cycle.	<p>*The hydrologic cycle, which is powered by the sun, is the movement of water in its various solid, liquid, and gaseous phases between sources and sinks. *The oceans are the primary reservoir of water at the Earth's surface, with ice caps and groundwater acting as much smaller reservoirs.</p>			AP Classroom and Teacher Created Assessment
	1.8 Primary Productivity	Explain how solar energy is acquired and transferred by living organisms.	<p>*Primary productivity is the rate at which solar energy (sunlight) is converted into organic compounds via photosynthesis over a unit of time. *Gross primary productivity is the total rate of photosynthesis in a given area. *Net primary productivity is the rate of energy storage by photosynthesizers in a given area, after subtracting the energy lost to respiration. *Productivity is measured in units of energy per unit area per unit time (e.g., kcal/m²/yr). *Most red light is absorbed in the upper 1m of water, and blue light only penetrates deeper than 100m in the clearest water. This affects photosynthesis in aquatic ecosystems, whose photosynthesizers have adapted mechanisms to address the lack of visible light.</p>			AP Classroom and Teacher Created Assessment

	1.9 Trophic Levels	Explain how energy flows and matter cycles through trophic levels	*All ecosystems depend on a continuous inflow of high-quality energy in order to maintain their structure and function of transferring matter between the environment and organisms via biogeochemical cycles. *Biogeochemical cycles are essential for life and each cycle demonstrates the conservation of matter *In terrestrial and near-surface marine communities, energy flows from the sun to producers in the lowest trophic levels and then upward to higher trophic levels.			AP Classroom and Teacher Created Assessment
	1.10 Energy Flow and the 10%	Determine how the energy decreases as it flows through ecosystems.	*The 10% rule approximates that in the transfer of energy from one trophic level to the next, only about 10% of the energy is passed on. *The loss of energy that occurs when energy moves from lower to higher trophic levels can be explained through the laws of thermodynamics.			AP Classroom and Teacher Created Assessment
	1.11 Food Chains and Food Webs	Describe food chains and food webs, and their constituent members by trophic level.	*A food web is a model of an interlocking pattern of food chains that depicts the flow of energy and nutrients in two or more food chains. *Positive and negative feedback loops can each play a role in food webs. When one species is removed from or added to a specific food web, the rest of the food web can be affected.			AP Classroom and Teacher Created Assessment
Unit 2: The Living World-Biodiversity	2.1 Introduction to Biodiversity	Explain levels of biodiversity and their importance to ecosystems.	Biodiversity in an ecosystem includes genetic, species, and habitat diversity. The more genetically diverse a population is, the better it can respond to environmental stressors. Additionally, a population bottleneck can lead to a loss of genetic diversity. Ecosystems that have a larger number of species are more likely to recover from disruptions. Loss of habitat leads to a loss of specialist species, followed by a loss of generalist species. It also leads to reduced numbers of species that have large territorial requirements. Species richness refers to the number of different species found in an ecosystem.	<p>Chapter 11, Biodiversity and Conservation Biology, 268 Introduction to biodiversity, 271-273 Ecosystem services, 275-276 Natural disruptions to ecosystems, 279-287</p> <p>Chapter 3, Evolution, Biodiversity, and Population Ecology, 46 Adaptations and sources of Earth's biodiversity, 48-60 Ecological tolerance, 60-66</p> <p>Chapter 12, Forests, Forest Management, and Protected Areas, 300 Island biogeography, 323-326</p> <p>Chapter 4, Species Interactions and Community Ecology, 72 Ecological succession, 83-87</p>	<p>Species Biodiversity Genetic Diversity Species Richness Species Abundance Ecosystem diversity Invasive species/biotic pollution Anthropogenic Island Biogeography Evolution Tolerance Succession Ecosystem services Bottleneck Keystone species Indicator species Pioneer species Habitat Fragmentation Specialist Generalist Natural Selection</p>	AP Classroom and Teacher Created Assessment
	2.2 Ecosystem Services	Describe ecosystem services. Describe the results of human disruptions to ecosystem services	There are four categories of ecosystem services: provisioning, regulating, cultural, and supporting. Anthropogenic activities can disrupt ecosystem services, potentially resulting in economic and ecological consequences.			AP Classroom and Teacher Created Assessment
	2.3 Island Biogeography	Describe island biogeography. Describe the role of island biogeography in evolution.	Island biogeography is the study of the ecological relationships and distribution of organisms on islands, and of these organisms' community structures Islands have been colonized in the past by new species arriving from elsewhere. Many island species have evolved to be specialists versus generalists because of the limited resources, such as food and territory, on most islands. The long-term survival of specialists may be jeopardized if and when invasive species, typically generalists, are introduced and outcompete the specialists.			AP Classroom and Teacher Created Assessment
	2.4 Ecological Tolerance	Describe ecological tolerance.	Ecological tolerance refers to the range of conditions, such as temperature, salinity, flow rate, and sunlight that an organism can endure before injury or death results. Ecological tolerance can apply to individuals and to species.			AP Classroom and Teacher Created Assessment
	2.5 Natural Disruptions to Ecosystems	Explain how natural disruptions, both short and long-term, impact an ecosystem.	Natural disruptions to ecosystems have environmental consequences that may, for a given occurrence, be as great as, or greater than, many human-made disruptions Earth system processes operate on a range of scales in terms of time. Processes can be periodic, episodic, or random. Earth's climate has changed over geological time for many reasons Sea level has varied significantly as a result of changes in the amount of glacial ice on Earth over geological time. Major environmental change or upheaval commonly results in large swathes of habitat changes. Wildlife engages in both short- and long-term migration for a variety of reasons, including natural disruptions.			AP Classroom and Teacher Created Assessment
	2.6 Adaptations	Describe how organisms adapt to their environment	Organisms adapt to their environment over time, both in short- and long-term scales, via incremental changes at the genetic level. Environmental changes, either sudden or gradual, may threaten a species' survival, requiring individuals to alter behaviors, move, or perish.			AP Classroom and Teacher Created Assessment
	2.7 Ecological Succession	Describe ecological succession.	There are two main types of ecological succession: primary and secondary succession.			AP Classroom and Teacher Created Assessment

			A keystone species in an ecosystem is a species whose activities have a particularly significant role in determining community structure.			AP Classroom and Teacher Created Assessment
			An indicator species is a plant or animal that, by its presence, abundance, scarcity, or chemical composition, demonstrates that some distinctive aspect of the character or quality of an ecosystem is present			AP Classroom and Teacher Created Assessment
		Describe the effect of ecological succession on ecosystems.	Pioneer members of an early successional species commonly move into unoccupied habitat and over time adapt to its particular conditions, which may result in the origin of new species.			AP Classroom and Teacher Created Assessment
			Succession in a disturbed ecosystem will affect the total biomass, species richness, and net productivity over time.			AP Classroom and Teacher Created Assessment
Unit 3: Populations				Chapter 3, Evolution, Biodiversity, and Population Ecology, 46 Generalist and specialist species, 60 K and r-selected species, 67 Survivorship curves, 66 Carrying capacity, 65, 190 Population growth and resource availability, 65 Chapter 8, Human Populations, 184 Age structure diagrams, 193-195 Total fertility rate, 196 Human population dynamics, 195-204 Demographic transition, 196-198	Fragmentation Endangered species Poaching Domestication Invasive species Zero Population Growth Migration Developed Country Developing Country Moderately Developed Country Infant Mortality Rates (IMR) Replacement Level Fertility (RLF) Total Fertility Rate (TFR) Demographic Transition K-selected species r-selected species biotic potential, reproductive strategy survivorship curve carrying capacity Cohort birth rate death rate density-independent factor density-dependent factor rule of 70 Population Population Density Growth rate Immigration Emigration Biotic Potential Exponential Growth Logistic Growth Limiting Factor Survivorship: Type I, Type II, Type III Population Growth Momentum Age Structure diagram Doubling Time	
	3.1 Generalist and Specialist Species	Identify differences between generalist and specialist species.	Specialist species tend to be advantaged in habitats that remain constant, while generalist species tend to be advantaged in habitats that are changing.			AP Classroom and Teacher Created Assessment
	3.2 K-Selected and r-Selected Species	Identify differences between K- and r-selected species	K-selected species tend to be large, have few offspring per reproduction event, live in stable environments, expend significant energy for each offspring, mature after many years of extended youth and parental care, have long life spans/life expectancy, and reproduce more than once in their lifetime. Competition for resources in K-selected species' habitats is usually relatively high. r-selected species tend to be small, have many offspring, expend or invest minimal energy for each offspring, mature early, have short life spans, and may reproduce only once in their lifetime. Competition for resources in r-selected species' habitats is typically relatively low. Biotic potential refers to the maximum reproductive rate of a population in ideal conditions. Many species have reproductive strategies that are not uniquely r-selected or K-selected, or they change in different conditions at different times. K-selected species are typically more adversely affected by invasive species than r-selected species, which are minimally affected by invasive species. Most invasive species are r-selected species.			AP Classroom and Teacher Created Assessment
	3.3 Survivorship Curves	Explain survivorship curves	A survivorship curve is a line that displays the relative survival rates of a cohort—a group of individuals of the same age—in a population, from birth to the maximum age reached by any one cohort member. There are Type I, Type II, and Type III curves. Survivorship curves differ for K-selected and r-selected species, with K-selected species typically following a Type I or Type II curve and r-selected species following a Type III curve.			AP Classroom and Teacher Created Assessment
	3.4 Carrying Capacity	Describe carrying capacity.	When a population exceeds its carrying capacity (carrying capacity can be denoted as K), overshoot occurs. There are environmental impacts of population overshoot, including resource depletion.			AP Classroom and Teacher Created Assessment
	3.5 Population Growth and Resource Availability	Describe the impact of carrying capacity on ecosystems. Explain how resource availability affects population growth.	A major ecological effect of population overshoot is dieback of the population (often severe to catastrophic) because the lack of available resources leads to famine, disease, and/or conflict. Population growth is limited by environmental factors, especially by the available resources and space. Resource availability and the total resource base are limited and finite over all scales of time. When the resources needed by a population for growth are abundant, population growth usually accelerates. When the resource base of a population shrinks, the increased potential for unequal distribution of resources will ultimately result in increased mortality, decreased fecundity, or both, resulting in population growth declining to, or below, carrying capacity.			AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment
	3.6 Age Structure Diagrams	Explain age structure diagrams.	Population growth rates can be interpreted from age structure diagrams by the shape of the structure. A rapidly growing population will, as a rule, have a higher proportion of younger people compared to stable or declining populations.			AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment
	3.7 Total Fertility Rate	Explain factors that affect total fertility rate in human populations.	Total fertility rate (TFR) is affected by the age at which females have their first child, educational opportunities for females, access to family planning, and government acts and policies. If fertility rate is at replacement levels, a population is considered relatively stable.			AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment

			Factors associated with infant mortality rates include whether mothers have access to good healthcare and nutrition. Changes in these factors can lead to changes in infant mortality rates over time			AP Classroom and Teacher Created Assessment
	3.8 Human Population Dynamics	Explain how human populations experience growth and decline.	Birth rates, infant mortality rates, and overall death rates, access to family planning, access to good nutrition, access to education, and postponement of marriage all affect whether a human population is growing or declining			AP Classroom and Teacher Created Assessment
			Factors limiting global human population include the Earth's carrying capacity and the basic factors that limit human population growth as set forth by Malthusian theory			AP Classroom and Teacher Created Assessment
			Population growth can be affected by both density-independent factors, such as major storms, fires, heat waves, or droughts, and density-dependent factors, such as access to clean water and air, food availability, disease transmission, or territory size.			AP Classroom and Teacher Created Assessment
			The rule of 70 states that dividing the number 70 by the percentage population growth rate approximates the population's doubling time.			AP Classroom and Teacher Created Assessment
	3.9 Demographic Transition	Define the demographic transition.	The demographic transition refers to the transition from high to lower birth and death rates in a country or region as development occurs and that country moves from a preindustrial to an industrialized economic system. This transition is typically demonstrated through a four-stage demographic transition model (DTM).			AP Classroom and Teacher Created Assessment
			Characteristics of developing countries include higher infant mortality rates and more children in the workforce than developed countries.			AP Classroom and Teacher Created Assessment
Unit 4: Earth Systems and Resources				Chapter 2, Earth's Physical Systems, 20 Plate tectonics and plate boundary characteristics, 32-39 Chapter 9, The Underpinnings of Agriculture, 208 Soil formation, soil horizons, and erosion, 212-214 Soil composition and properties, including soil triangle maps, 214-217 Chapter 17, The Atmosphere, Air Quality, and Pollution Control, 444 Structure and composition of Earth's atmosphere, 426-447 Global wind patterns and their effects, 451 Chapter 15, Freshwater Systems and Resources, 382 Characteristics of watersheds, 389 Chapter 17, The Atmosphere, Air Quality, and Pollution Control, 444 Solar radiation and the Earth's seasons, 448-450 Earth's geography and climate, 450 Chapter 16, Marine and Coastal Systems and Resources, 414 El Nino, La Nina, and the environmental consequences, 423	Plate tectonics Albedo Troposphere Stratosphere Mesosphere Tsunami Plate boundary Transform fault Boundaries: convergent and divergent Volcano Atmosphere El Nino/ ENSO La Nina Thermosphere Exosphere Trade Winds Coriolis Effect Gyre Soil Leaching Weathering Soil Horizons: O, A, E, B, C, Bedrock Permeability Porosity Rain Shadow Headwaters Ocean Current Ocean Conveyor Belt Climate Weather Earthquake Soil texture: sand, silt, clay Salinization Desertification Desiccation Conservation Reserve Program Watershed Solar Radiation/ Solar Insolation Tributary Floodplain	
	4.1 Plate Tectonics	Describe the geological changes and events that occur at convergent, divergent, and transform plate boundaries.	Convergent boundaries can result in the creation of mountains, island arcs, earthquakes, and volcanoes. Divergent boundaries can result in seafloor spreading, rift valleys, volcanoes, and earthquakes.			AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment
			Transform boundaries can result in earthquakes.			AP Classroom and Teacher Created Assessment
			Maps that show the global distribution of plate boundaries can be used to determine the location of volcanoes, island arcs, earthquakes, hot spots, and faults.			AP Classroom and Teacher Created Assessment
			An earthquake occurs when stress overcomes a locked fault, releasing stored energy.			AP Classroom and Teacher Created Assessment
	4.2 Soil Formation and Erosion	Describe the characteristics and formation of soil.	Soils are formed when parent material is weathered, transported, and deposited. Soils are generally categorized by horizons based on their composition and organic material. Soils can be eroded by winds or water. Protecting soils can protect water quality as soils effectively filter and clean water that moves through them.			AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment
	4.3 Soil Composition and Properties	Describe similarities and differences between properties of different soil types.	Water holding capacity—the total amount of water soil can hold—varies with different soil types. Water retention contributes to land productivity and fertility of soils. The particle size and composition of each soil horizon can affect the porosity, permeability, and fertility of the soil. There are a variety of methods to test the chemical, physical, and biological properties of soil that can aid in a variety of decisions, such as irrigation and fertilizer requirements. A soil texture triangle is a diagram that allows for the identification and comparison of soil types based on their percentage of clay, silt, and sand.			AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment
	4.4 Earth's Atmosphere	Describe the structure and composition of the Earth's atmosphere.	The atmosphere is made up of major gases, each with its own relative abundance. The layers of the atmosphere are based on temperature gradients and include the troposphere, stratosphere, mesosphere, thermosphere, and exosphere.			AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment
	4.5 Global Wind Patterns	Explain how environmental factors can result in atmospheric circulation.	Global wind patterns primarily result from the most intense solar radiation arriving at the equator, resulting in density differences and the Coriolis effect.			AP Classroom and Teacher Created Assessment

4.6 Watersheds	Describe the characteristics of a watershed.	Characteristics of a given watershed include its area, length, slope, soil, vegetation types, and divides with adjoining watersheds.			AP Classroom and Teacher Created Assessment	
	4.7 Solar Radiation and Earth's Seasons	Explain how the sun's energy affects the Earth's surface			Incoming solar radiation (insolation) is the Earth's main source of energy and	AP Classroom and Teacher Created Assessment
					The angle of the sun's rays determines the intensity of the solar radiation. Due to the shape of the Earth, the latitude that is directly horizontal to the solar radiation receives the most intensity.	AP Classroom and Teacher Created Assessment
					The highest solar radiation per unit area is received at the equator and decreases toward the poles.	AP Classroom and Teacher Created Assessment
					The solar radiation received at a location on the Earth's surface varies seasonally, with the most radiation received during the location's longest summer day and the least on the shortest winter day.	AP Classroom and Teacher Created Assessment
					The tilt of Earth's axis of rotation causes the Earth's seasons and the number of hours of daylight in a particular location on the Earth's surface.	AP Classroom and Teacher Created Assessment
	4.8 Earth's Geography and Climate	Describe how the Earth's geography affects weather and climate.			Weather and climate are affected not only by the sun's energy but by geologic and geographic factors, such as mountains and ocean temperature	AP Classroom and Teacher Created Assessment
					A rain shadow is a region of land that has become drier because a higher elevation area blocks precipitation from reaching the land.	AP Classroom and Teacher Created Assessment
	4.9 El Niño and La Niña	Describe the environmental changes and effects that result from El Niño or La Niña events (El Niño–Southern Oscillation).			El Niño and La Niña are phenomena associated with changing ocean surface temperatures in the Pacific Ocean. These phenomena can cause global changes to rainfall, wind, and ocean circulation patterns	AP Classroom and Teacher Created Assessment
					El Niño and La Niña are influenced by geological and geographic factors and can affect different locations in different ways.	AP Classroom and Teacher Created Assessment
Unit 5: Land and Water Use						
5.1 Tragedy of the Commons	Explain the concept of the tragedy of the commons.	The tragedy of the commons suggests that individuals will use shared resources in their own self-interest rather than in keeping with the common good, thereby depleting the resources.	Chapter 1 Science and Sustainability, 2 Ecological footprints, 5-6 Chapter 7, Environmental Policy: Making Decisions and Solving Problems, 158 Tragedy of the commons, 162-163 Chapter 9, The Underpinnings of Agriculture, 208 Impacts of modern agricultural practices, 210-212, 239 Irrigation methods, 216-218 Chapter 10, Making Agriculture Sustainable, 234 Historical changes in agricultural practices and the Green Revolution, 238 Pest control methods and consequences, 246-248 Meat production methods and consequences, 240-242 Chapter 13, The Urban Environment: Creating Sustainable Cities, 330 Impacts of urbanization, 332-336 Chapter 16, Marine and Coastal Systems and Resources, 414 Impacts of overfishing, 433-438 Chapter 23, Minerals and Mining, 628 Environmental and health Impacts of mining, 633-642 Chapter 1, Science and Sustainability, 2 Introduction to sustainability, 14-17 Chapter 6, Ethics, Economics, and Sustainable Development, 130 Introduction to sustainable development, 153 Chapter 10, Making Agriculture Sustainable, 234 Integrated pest management, 249 Sustainable agriculture, 257-263, 231-240 Benefits and drawbacks of aquaculture, 242 Chapter 12, Forests, Forest Management, and Protected Areas, 300 Sustainable forestry, 301-302, 315 Chapter 13, The Urban Environment: Creating Sustainable Cities, 330 Methods to reduce urban runoff, 341-342	Erosion Green Revolution Genetically Modified Organisms (GMOs) Slash-and-burn Mitigate Runoff IPM (Integrated Pest Management) Intercropping biological control Terracing No-till Irrigation Fertilizers Pesticides Waterlogging Tilling CAFO (Concentrated Animal Feedlot Operation) furrow irrigation spray irrigation crop rotation contour plowing Windbreaks perennial crops free range Overgrazing organic waste Overfishing Desertification saltwater intrusion drip irrigation Salinization Aquifer pesticide resistance strip cropping rotational grazing aquaculture Tragedy of the commons Clearcutting Erosion Slash-and-burn Ore Overburden tailings/slag	AP Classroom and Teacher Created Assessment	
	5.2 Clearcutting	Describe the effect of clearcutting on forests.			Clearcutting can be economically advantageous but leads to soil erosion, increased soil and stream temperatures, and flooding	AP Classroom and Teacher Created Assessment
5.3 Green Revolution		Forests contain trees that absorb pollutants and store carbon dioxide. The cutting and burning of trees releases carbon dioxide and contributes to climate change.			AP Classroom and Teacher Created Assessment	
	Describe changes in agricultural practices.	The Green Revolution started a shift to new agricultural strategies and practices in order to increase food production, with both positive and negative results. Some of these strategies and methods are mechanization, genetically modified organisms (GMOs), fertilization, irrigation, and the use of pesticides.			AP Classroom and Teacher Created Assessment	
5.4 Impact of Agricultural Practices		Mechanization of farming can increase profits and efficiency for farms. It can also increase reliance on fossil fuels.			AP Classroom and Teacher Created Assessment	
	Describe agricultural practices that cause environmental damage.	Agricultural practices that cause environmental damage include tilling, slash-and-burn farming, and the use of fertilizers.			AP Classroom and Teacher Created Assessment	
5.5 Irrigation Methods	Describe the different methods of irrigation.	The largest human use of freshwater is for irrigation (70%).			AP Classroom and Teacher Created Assessment	
		Types of irrigation include drip irrigation, flood irrigation, furrow irrigation, and spray irrigation.			AP Classroom and Teacher Created Assessment	
	Describe the benefits and drawbacks of different methods of irrigation.	Waterlogging occurs when too much water is left to sit in the soil, which raises the water table of groundwater and inhibits plants' ability to absorb oxygen through their roots.			AP Classroom and Teacher Created Assessment	
		Furrow irrigation involves cutting furrows between crop rows and filling them with water. This system is inexpensive, but about 1/3 of the water is lost to evaporation and runoff.			AP Classroom and Teacher Created Assessment	
		Flood irrigation involves flooding an agricultural field with water. This system sees about 20% of the water lost to evaporation and runoff. This can also lead to waterlogging of the soil.	AP Classroom and Teacher Created Assessment			
			saltwater intrusion	AP Classroom and Teacher Created Assessment		

		Spray irrigation involves pumping groundwater into spray nozzles across an agricultural field. This system is more efficient than flood and furrow irrigation, with only 1/4 or less of the water lost to evaporation or runoff. However, spray systems are more expensive than flood and furrow irrigation, and also requires energy to run.			Salinization Runoff mitigate Sustainability ecological footprint Sprawl	AP Classroom and Teacher Created Assessment
		Drip irrigation uses perforated hoses to release small amounts of water to plant roots. This system is the most efficient, with only about 5% of water lost to evaporation and runoff. However, this system is expensive and so is not often used.			urban Impervious surface mining subsurface mining urbanization	AP Classroom and Teacher Created Assessment
		Salinization occurs when the salts in groundwater remain in the soil after the water evaporates. Over time, salinization can make soil toxic to plants.				AP Classroom and Teacher Created Assessment
		Aquifers can be severely depleted if overused for agricultural irrigation, as has happened to the Ogallala Aquifer in the central United States.				AP Classroom and Teacher Created Assessment
5.6 Pest Control Methods	Describe the benefits and drawbacks of different methods of pest control.	One consequence of using common pest-control methods such as pesticides, herbicides, fungicides, rodenticides, and insecticides is that organisms can become resistant to them through artificial selection. Pest control decreases crop damage by pest and increases crop yields.				AP Classroom and Teacher Created Assessment
		Crops can be genetically engineered to increase their resistance to pests and diseases. However, using genetically engineered crops in planting or other ways can lead to loss of genetic diversity of that particular crop.				AP Classroom and Teacher Created Assessment
5.7 Meat Production Methods	Identify different methods of meat production.	Methods of meat production include concentrated animal feeding operations (CAFOs), also called feedlots, and free-range grazing.				AP Classroom and Teacher Created Assessment
	Describe the benefits and drawbacks of different methods of meat production.	Meat production is less efficient than agriculture; it takes approximately 20 times more land to produce the same amount of calories from meat as from plants.				AP Classroom and Teacher Created Assessment
		Concentrated animal feeding operation (CAFOs) are used as a way to quickly get livestock ready for slaughter. They tend to be crowded, and animals are fed grains or feed that are not as suitable as grass. Additionally, feedlots generate a large amount of organic waste, which can contaminate ground and surface water. The use of feedlots are less expensive than other methods, which can keep costs to consumers down.				AP Classroom and Teacher Created Assessment
		Free range grazing allows animals to graze on grass during their entire lifecycle. Meat from free range animals tends to be free from antibiotics and other chemicals used in feedlots. Organic waste from these animals acts as fertilizer. Free range grazing requires large areas of land and the meat produced is more expensive for consumers.				AP Classroom and Teacher Created Assessment
		Overgrazing occurs when too many animals feed on a particular area of land. Overgrazing causes loss of vegetation, which leads to soil erosion.				AP Classroom and Teacher Created Assessment
		Overgrazing can cause desertification. Desertification is the degradation of low precipitation regions toward being increasingly arid until they become deserts.				AP Classroom and Teacher Created Assessment
		Less consumption of meat could reduce CO ₂ , methane, and N ₂ O emissions; conserve water; reduce the use of antibiotics and growth hormones; and improve topsoil.				AP Classroom and Teacher Created Assessment
5.8 Impacts of Overfishing	Describe causes of and problems related to overfishing.	Overfishing has led to the extreme scarcity of some fish species, which can lessen biodiversity in aquatic systems and harm people who depend on fishing for food and commerce.				AP Classroom and Teacher Created Assessment
5.9 Impacts of Mining	Describe natural resource extraction through mining.	As the more accessible ores are mined to depletion, mining operations are forced to access lower grade ores. Accessing these ores requires increased use of resources that can cause increased waste and pollution.				AP Classroom and Teacher Created Assessment
		Surface mining is the removal of large portions of soil and rock, called overburden, in order to access the ore underneath. An example is strip mining, which removes the vegetation from an area, making the area more susceptible to erosion.				AP Classroom and Teacher Created Assessment
	Describe ecological and economic impacts of natural resource extraction through mining.	Mining wastes include the soil and rocks that are moved to gain access to the ore and the waste, called slag and tailings that remain when the minerals have been removed from the ore. Mining helps to provide low cost energy and material necessary to make products. The mining of coal can destroy habitats, contaminate ground water, and release dust particles and methane.				AP Classroom and Teacher Created Assessment
		As coal reserves get smaller, due to a lack of easily accessible reserves, it becomes necessary to access coal through subsurface mining, which is very expensive.				AP Classroom and Teacher Created Assessment
5.10 Impacts of Urbanization	Describe the effects of urbanization on the environment.	Urbanization can lead to depletion of resources and saltwater intrusion in the hydrologic cycle.				AP Classroom and Teacher Created Assessment

		Urbanization, through the burning of fossil fuels and landfills, affects the carbon cycle by increasing the amount of carbon dioxide in the atmosphere.			AP Classroom and Teacher Created Assessment
		Impervious surfaces are human-made structures—such as roads, buildings, sidewalks, and parking lots—that do not allow water to reach the soil, leading to flooding.			AP Classroom and Teacher Created Assessment
		Urban sprawl is the change in population distribution from high population density areas to low density suburbs that spread into rural lands, leading to potential environmental problems.			AP Classroom and Teacher Created Assessment
	5.11 Ecological Footprints	Ecological footprints compare resource demands and waste production required for an individual or a society.			AP Classroom and Teacher Created Assessment
	5.12 Introduction to Sustainability	Explain the concept of sustainability. Sustainability refers to humans living on Earth and their use of resources without depletion of the resources for future generations. Environmental indicators that can guide humans to sustainability include biological diversity, food production, average global surface temperatures and CO ₂ concentrations, human population, and resource depletion.			AP Classroom and Teacher Created Assessment
		Sustainable yield is the amount of a renewable resource that can be taken without reducing the available supply.			AP Classroom and Teacher Created Assessment
	5.13 Methods to Reduce Urban Runoff	Describe methods for mitigating problems related to urban runoff. Methods to increase water infiltration include replacing traditional pavement with permeable pavement, planting trees, increased use of public transportation, and building up, not out.			AP Classroom and Teacher Created Assessment
	5.14 Integrated Pest Management	Describe integrated pest management. Integrated pest management (IPM) is a combination of methods used to effectively control pest species while minimizing the disruption to the environment. These methods include biological, physical, and limited chemical methods such as biocontrol, intercropping, crop rotation, and natural predators of the pests.			AP Classroom and Teacher Created Assessment
		Describe the benefits and drawbacks of integrated pest management (IPM). The use of integrated pest management (IPM) reduces the risk that pesticides pose to wildlife, water supplies, and human health.			AP Classroom and Teacher Created Assessment
		Integrated pest management (IPM) minimizes disruptions to the environment and threats to human health but can be complex and expensive.			AP Classroom and Teacher Created Assessment
	5.15 Sustainable Agriculture	Describe sustainable agricultural and food production practices. The goal of soil conservation is to prevent soil erosion. Different methods of soil conservation include contour plowing, windbreaks, perennial crops, terracing, no-till agriculture, and strip cropping.			AP Classroom and Teacher Created Assessment
		Strategies to improve soil fertility include crop rotation and the addition of green manure and limestone.			AP Classroom and Teacher Created Assessment
		Rotational grazing is the regular rotation of livestock between different pastures in order to avoid overgrazing in a particular area.			AP Classroom and Teacher Created Assessment
	5.16 Aquaculture	Describe the benefits and drawbacks of aquaculture. Aquaculture has expanded because it is highly efficient, requires only small areas of water, and requires little fuel.			AP Classroom and Teacher Created Assessment
		Aquaculture can contaminate wastewater, and fish that escape may compete or breed with wild fish. The density of fish in aquaculture can lead to increases in disease incidences, which can be transmitted to wild fish.			AP Classroom and Teacher Created Assessment
	5.17 Sustainable Forestry	Describe methods for mitigating human impact on forests. Some of the methods for mitigating deforestation include reforestation, using and buying wood harvested by ecologically sustainable forestry techniques, and reusing wood.			AP Classroom and Teacher Created Assessment
		Methods to protect forests from pathogens and insects include integrated pest management (IPM) and the removal of affected trees.			AP Classroom and Teacher Created Assessment
		Prescribed burn is a method by which forests are set on fire under controlled conditions in order to reduce the occurrence of natural fires.			AP Classroom and Teacher Created Assessment
Unit 6: Energy Resources and Consumption					
	6.1 Renewable and Nonrenewable Resources	Identify differences between nonrenewable and renewable energy sources. Nonrenewable energy sources are those that exist in a fixed amount and involve energy transformation that cannot be easily replaced. Renewable energy sources are those that can be replenished naturally, at or near the rate of consumption, and reused.	Chapter 19, Fossil Fuels: Sources, Uses, Impacts and Conservation, 514 Renewable and nonrenewable sources of energy, 517 Fuel types and their specific uses (wood, peat, coal, natural gas, and crude oil), 517-544 Chapter 20, Conventional Energy Alternatives, 548 Distribution of natural energy reserves, 518, 527-528 Fossil fuel use in power generation, 519 Hydraulic fracturing for natural gas and the resulting environmental effects, 528	nonrenewable resource renewable resource fossil fuel Cogeneration Combustion Fracking nuclear power radioactive half life Biomass PV solar cell active solar energy passive solar energy Hydroelectricity Turbine Generator tidal energy Geothermal energy Hydrogen fuel cell Kinetic energy	AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment
	6.2 Global Energy Consumption	Describe trends in energy consumption. The use of energy resources is not evenly distributed between developed and developing countries. The most widely used sources of energy globally are fossil fuels. As developing countries become more developed, their reliance on fossil fuels for energy increases. As the world becomes more industrialized, the demand for energy increases.	Global energy consumption trends, 550-552 Nuclear power issues: benefits and environmental consequences, 552-562 Biomass use in power generation, 563 Hydroelectric power generation and its environmental effects, 570-573 Chapter 21, New Renewable Energy Alternatives, 576 Solar energy: benefits and environmental consequences, 584-590		AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment

		Availability, price, and governmental regulations influence which energy sources people use and how they use them.	Geothermal energy: benefits and environmental consequences, 595-597 Hydrogen fuel cells, 598-600 Wind power: benefits and environmental consequences, 591-594 Chapter 19. Fossil Fuels: Sources, Uses, Impacts, and Conservation, Energy efficiency and conservation, 541-544	surface mining Conservation hybrid vehicle Potential energy Battery Electric Vehicle (BEV) green building greenhouse gases Ore Overburden tailings/slag subsurface mining	AP Classroom and Teacher Created Assessment
6.3 Fuel Types and Uses	Identify types of fuels and their uses.	Wood is commonly used as fuel in the forms of firewood and charcoal. It is often used in developing countries because it is easily accessible.			AP Classroom and Teacher Created Assessment
		Peat is partially decomposed organic material that can be burned for fuel.			AP Classroom and Teacher Created Assessment
		Three types of coal used for fuel are lignite, bituminous, and anthracite. Heat, pressure, and depth of burial contribute to the development of various coal types and their qualities.			AP Classroom and Teacher Created Assessment
		Natural gas, the cleanest of the fossil fuels, is mostly methane.			AP Classroom and Teacher Created Assessment
		Crude oil can be recovered from tar sands, which are a combination of clay, sand, water, and bitumen.			AP Classroom and Teacher Created Assessment
		Fossil fuels can be made into specific fuel types for specialized uses (e.g., in motor vehicles).			AP Classroom and Teacher Created Assessment
		Cogeneration occurs when a fuel source is used to generate both useful heat and electricity			AP Classroom and Teacher Created Assessment
6.4 Distribution of Natural Energy Resources	Identify where natural energy resources occur.	The global distribution of natural energy resources, such as ores, coal, crude oil, and gas, is not uniform and depends on regions' geologic history			AP Classroom and Teacher Created Assessment
6.5 Fossil Fuels	Describe the use and methods of fossil fuels in power generation.	The combustion of fossil fuels is a chemical reaction between the fuel and oxygen that yields carbon dioxide and water and releases energy.			AP Classroom and Teacher Created Assessment
		Energy from fossil fuels is produced by burning those fuels to generate heat, which then turns water into steam. That steam turns a turbine, which spins a generator, producing electricity.			AP Classroom and Teacher Created Assessment
		Humans use a variety of methods to extract fossil fuels from the earth for energy generation.			AP Classroom and Teacher Created Assessment
	Describe the effects of fossil fuels on the environment.	Hydrologic fracturing (fracking) can cause groundwater contamination and the release of volatile organic compounds.			AP Classroom and Teacher Created Assessment
6.6 Nuclear Power	Describe the use of nuclear energy in power generation.	Nuclear power is generated through fission, where atoms of Uranium-235, which are stored in fuel rods, are split into smaller parts after being struck by a neutron. Nuclear fission releases a large amount of heat, which is used to generate steam, which powers a turbine and generates electricity			AP Classroom and Teacher Created Assessment
		Radioactivity occurs when the nucleus of a radioactive isotope loses energy by emitting radiation.			AP Classroom and Teacher Created Assessment
		Uranium-235 remains radioactive for a long time, which leads to the problems associated with the disposal of nuclear waste.			AP Classroom and Teacher Created Assessment
		Nuclear power generation is a nonrenewable energy source. Nuclear power is considered a cleaner energy source because it does not produce air pollutants, but it does release thermal pollution and hazardous solid waste.			AP Classroom and Teacher Created Assessment
	Describe the effects of the use of nuclear energy on the environment.	Three Mile Island, Chernobyl, and Fukushima are three cases where accidents or natural disasters led to the release of radiation. These releases have had short- and long-term impacts on the environment.			AP Classroom and Teacher Created Assessment
		A radioactive element's half-life can be used to calculate a variety of things, including the rate of decay and the			AP Classroom and Teacher Created Assessment
6.7 Energy from Biomass	Describe the effects of the use of biomass in power generation on the environment.	Burning of biomass produces heat for energy at a relatively low cost, but it also produces carbon dioxide, carbon monoxide, nitrogen oxides, particulates, and volatile organic compounds. The overharvesting of trees for fuel also causes deforestation.			AP Classroom and Teacher Created Assessment
		Ethanol can be used as a substitute for gasoline. Burning ethanol does not introduce additional carbon into the atmosphere via combustion, but the energy return on energy investment for ethanol is low.			AP Classroom and Teacher Created Assessment
6.8 Solar Energy	Describe the use of solar energy in power generation.	Photovoltaic solar cells capture light energy from the sun and transform it directly into electrical energy. Their use is limited by the availability of sunlight.			AP Classroom and Teacher Created Assessment
		Active solar energy systems use solar energy to heat a liquid through mechanical and electric equipment to collect and store the energy captured from the sun.			AP Classroom and Teacher Created Assessment
		Passive solar energy systems absorb heat directly from the sun without the use of mechanical and electric equipment, and energy cannot be collected or stored.			AP Classroom and Teacher Created Assessment
	Describe the effects of the use of solar energy in power generation on the environment.	Solar energy systems have low environmental impact and produce clean energy, but they can be expensive. Large solar energy farms may negatively impact desert ecosystems.			AP Classroom and Teacher Created Assessment

6.9 Hydroelectric Power	Describe the use of hydroelectricity in power generation.	Hydroelectric power can be generated in several ways. Dams built across rivers collect water in reservoirs. The moving water can be used to spin a turbine. The turbine spins a generator, producing electricity. Turbines can also be placed in small rivers, where the flowing water spins the turbine, which spins a generator and forms electricity.			AP Classroom and Teacher Created Assessment	
		Tidal energy uses the energy produced by tidal flows to turn a turbine.			AP Classroom and Teacher Created Assessment	
	Describe the effects of the use of hydroelectricity in power generation on the environment.	Hydroelectric power does not generate air pollution or waste, but construction of the power plants can be expensive, and there may be a loss of or change in habitats following the construction of dams.			AP Classroom and Teacher Created Assessment	
	6.10 Geothermal Energy	Describe the use of geothermal energy in power generation.	Geothermal energy is obtained by using the heat stored in the Earth's interior to heat up water, which is brought back to the surface as steam. The steam spins a turbine, which spins a generator, producing electricity.			AP Classroom and Teacher Created Assessment
		Describe the effects of the use of geothermal energy in power generation on the environment.	The cost of accessing geothermal energy can be prohibitively expensive, as is not easily accessible in many parts of the world. In addition, it can cause the release of hydrogen sulfide.			AP Classroom and Teacher Created Assessment
	6.11 Hydrogen Fuel Cell	Describe the use of hydrogen fuel cells in power generation.	Hydrogen fuel cells are an alternate to nonrenewable fuel sources. They use hydrogen as fuel, combining the hydrogen fuel and oxygen in the air to form water and release energy (electricity) in the process. Water is the product (emission) of a fuel cell.			AP Classroom and Teacher Created Assessment
		Describe the effects of the use of hydrogen fuel cells in power generation on the environment.	Hydrogen fuel cells have low environmental impact and produce no carbon dioxide when the hydrogen is produced from water. However, the technology is expensive and energy is still needed to create the hydrogen gas used in the fuel cell.			AP Classroom and Teacher Created Assessment
6.12 Wind Energy	Describe the use of wind energy in power generation.	Wind turbines use the kinetic energy of moving air to spin a turbine, which spins a generator, producing electricity.			AP Classroom and Teacher Created Assessment	
	Describe the effects of the use of wind energy in power generation on the environment.	Wind energy is a renewable, clean source of energy. However, birds and bats may be killed if they fly into the spinning turbine blades.			AP Classroom and Teacher Created Assessment	
6.13 Energy Conservation	Describe methods for conserving energy.	Some of the methods for conserving energy around a home include adjusting the thermostat to reduce the use of heat and air conditioning, conserving water, use of energy-efficient appliances, and conservation landscaping.			AP Classroom and Teacher Created Assessment	
		Methods for conserving energy on a large scale include improving fuel economy for vehicles, using BEVs (battery electric vehicles) and hybrid vehicles, using public transportation, and implementing green building design features.			AP Classroom and Teacher Created Assessment	
Unit 7: Atmospheric Pollution						
7.1 Introduction to Air Pollution	Identify the sources and effects of air pollutants.	Coal combustion releases air pollutants including carbon dioxide, sulfur dioxide, toxic metals, and particulates.	Chapter 17, The Atmosphere, Air Quality, and Pollution Control, 444 The sources and effects of air pollution, 452-457 Photochemical smog's causes and effects, 459-464 Thermal inversion effects on air quality, 450	Pollutants Air pollution Particulate matter Solid particulate matter Lead	AP Classroom and Teacher Created Assessment	
		The combustion of fossil fuels releases nitrogen oxides into the atmosphere. They lead to the production of ozone, formation of photochemical smog, and convert to nitric acid in the atmosphere, causing acid rain. Other pollutants produced by fossil fuel combustion include carbon monoxide, hydrocarbons, and particulate matter.	Natural sources of CO ₂ and particulates, 452-453 Indoor air pollutants: sources and effects, 472-474 Methods to reduce air pollutants at the source, 455-456, 462-463 Acid deposition: causes and environmental effects, 469-472	Nitrogen Oxides (NO _x) Sulfur Oxides (SO _x) Clean Air Act Ozone thinning Montreal Protocol Forest Decline Noise Pollution Primary air pollutant	AP Classroom and Teacher Created Assessment	
		Air quality can be affected through the release of sulfur dioxide during the burning of fossil fuels, mainly diesel fuels.	Chapter 13, The Urban Environment: Creating Sustainable Cities, 330 Noise pollution: sources and effects	Secondary air pollutant	AP Classroom and Teacher Created Assessment	
		Through the Clean Air Act, the Environmental Protection Agency (EPA) regulated the use of lead, particularly in fuels, which dramatically decreased the amount of lead in the atmosphere.		Mobile Sources Stationary Sources Industrial Smog Photochemical Smog VOC's	AP Classroom and Teacher Created Assessment	
		Air pollutants can be primary or secondary pollutants.		Temperature inversion Electrostatic Precipitator Scrubbers Catalytic Converters Light Pollution Carbon Oxides Hydrocarbons Ozone	AP Classroom and Teacher Created Assessment	
7.2 Photochemical Smog	Explain the causes and effects of photochemical smog and methods to reduce it.	Photochemical smog is formed when nitrogen oxides and volatile organic hydrocarbons react with heat and sunlight to produce a variety of pollutants.		Stratosphere Troposphere	AP Classroom and Teacher Created Assessment	
		Many environmental factors affect the formation of photochemical smog.			AP Classroom and Teacher Created Assessment	

		Nitrogen oxide is produced early in the day. Ozone concentrations peak in the afternoon and are higher in the summer because ozone is produced by chemical reactions between oxygen and sunlight.		Vapor Recovery UV Radiation CFC's Acid Deposition Sick Building Syndrome Radon	AP Classroom and Teacher Created Assessment
		Volatile Organic Compounds (VOCs), such as formaldehyde and gasoline, evaporate or sublimate at room temperature. Trees are a natural source of VOCs.			AP Classroom and Teacher Created Assessment
		Photochemical smog often forms in urban areas because of the large number of motor vehicles there.			AP Classroom and Teacher Created Assessment
		Photochemical smog can be reduced through the reduction of nitrogen oxide and VOCs.			AP Classroom and Teacher Created Assessment
		Photochemical smog can harm human health in several ways, including causing respiratory problems and eye irritation.			AP Classroom and Teacher Created Assessment
7.3 Thermal Inversion	Describe thermal inversion and its relationship with pollution.	During a thermal inversion, the normal temperature gradient in the atmosphere is altered as the air temperature at the Earth's surface is cooler than the air at higher altitudes.			AP Classroom and Teacher Created Assessment
		Thermal inversion traps pollution close to the ground, especially smog and particulates.			AP Classroom and Teacher Created Assessment
7.4 Atmospheric CO ₂ and Particulates	Describe natural sources of CO ₂ and particulates.	CO ₂ appears naturally in the atmosphere from sources such as respiration, decomposition, and volcanic eruptions.			AP Classroom and Teacher Created Assessment
		There are a variety of natural sources of particulate matter. Carbon monoxide is an indoor air pollutant that is classified as an asphyxiant.			AP Classroom and Teacher Created Assessment
7.5 Indoor Air Pollutants	Identify indoor air pollutants.	Indoor air pollutants that are classified as particulates include asbestos, dust, and smoke.			AP Classroom and Teacher Created Assessment
		Indoor air pollutants can come from natural sources, human-made sources, and combustion.			AP Classroom and Teacher Created Assessment
		Common natural source indoor air pollutants include radon, mold, and dust.			AP Classroom and Teacher Created Assessment
		Common human-made indoor air pollutants include insulation, Volatile Organic Compounds (VOCs) from furniture, paneling and carpets; formaldehyde from building materials, furniture, upholstery, and carpeting; and lead from paints.			AP Classroom and Teacher Created Assessment
		Common combustion air pollutants include carbon monoxide, nitrogen oxides, sulfur dioxide, particulates, and tobacco smoke.			AP Classroom and Teacher Created Assessment
		Radon-222 is a naturally occurring radioactive gas that is produced by the decay of uranium found in some rocks and soils.			AP Classroom and Teacher Created Assessment
	Describe the effects of indoor air pollutants.	Radon gas can infiltrate homes as it moves up through the soil and enters homes via the basement or cracks in the walls or foundation. It is also dissolved in groundwater that enters homes through a well.			AP Classroom and Teacher Created Assessment
		Exposure to radon gas can lead to radon-induced lung cancer, which is the second leading cause of lung cancer in America.			AP Classroom and Teacher Created Assessment
7.6 Reduction of Air Pollutants	Explain how air pollutants can be reduced at the source.	Methods to reduce air pollutants include regulatory practices, conservation practices, and alternative fuels.			AP Classroom and Teacher Created Assessment
		A vapor recovery nozzle is an air pollution control device on a gasoline pump that prevents fumes from escaping into the atmosphere when fueling a motor vehicle.			AP Classroom and Teacher Created Assessment
		A catalytic converter is an air pollution control device for internal combustion engines that converts pollutants (CO, NO _x , and hydrocarbons) in exhaust into less harmful molecules (CO ₂ , N ₂ , O ₂ , and H ₂ O).			AP Classroom and Teacher Created Assessment
		Wet and dry scrubbers are air pollution control devices that remove particulates and/or gases from industrial exhaust streams.			AP Classroom and Teacher Created Assessment
		Methods to reduce air pollution from coal-burning power plants include scrubbers and electrostatic precipitators.			AP Classroom and Teacher Created Assessment
7.7 Acid Rain	Describe acid deposition.	Acid rain and deposition is due to nitrogen oxides and sulfur oxides from anthropogenic and natural sources in the atmosphere.			AP Classroom and Teacher Created Assessment
		Nitric oxides that cause acid deposition come from motor vehicles and coal-burning power plants. Sulfur dioxides that cause acid deposition come from coal-burning power plants.			AP Classroom and Teacher Created Assessment
	Describe the effects of acid deposition on the environment.	Acid deposition mainly affects communities that are downwind from coal-burning power plants.			AP Classroom and Teacher Created Assessment
		Acid rain and deposition can lead to the acidification of soils and bodies of water and corrosion of human-made structures.			AP Classroom and Teacher Created Assessment
		Regional differences in soils and bedrock affect the impact that acid deposition has on the region—such as limestone bedrock's ability to neutralize the effect of acid rain on lakes and ponds.			AP Classroom and Teacher Created Assessment

	7.8 Noise Pollution	Describe human activities that result in noise pollution and its effects.	Noise pollution is sound at levels high enough to cause physiological stress and hearing loss. Sources of noise pollution in urban areas include transportation, construction, and domestic and industrial activity. Some effects of noise pollution on animals in ecological systems include stress, the masking of sounds used to communicate or hunt, damaged hearing, and causing changes to migratory routes.			AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment	
Unit 8: Aquatic and Terrestrial Pollution	8.1 Sources of Pollution	Identify differences between point and nonpoint sources of pollution.	A point source refers to a single, identifiable source of a pollutant, such as a smokestack or waste discharge pipe. Nonpoint sources of pollution are diffused and can therefore be difficult to identify, such as pesticide spraying or urban runoff.	<p>Chapter 15, Freshwater systems and Resources, 302 Point and nonpoint sources of pollution, 405 Impacts of human activities on aquatic ecosystems, 405-408 Environmental effects of excessive fertilizers and detergents on aquatic ecosystems, 406-407 Human impacts on wetlands, 391-396 Thermal pollution: sources and environmental effects, 407</p> <p>Chapter 16, Marine and Coastal Systems and Resources, 414 Human impacts on coastal mangroves, 425</p> <p>Chapter 5, Environmental Systems and Ecosystem Ecology, 102 Eutrophication and its consequences, 109</p> <p>Chapter 9, The Underpinnings of Agriculture, 208 Eutrophication and its consequences, 218-219</p> <p>Chapter 14, Environmental Health and Toxicology, 362 Endocrine disrupters and their effects on ecosystems, 369-370 Persistent organic pollutants (POPs): sources and effects, 368 Bioaccumulation and biomagnification, 368</p> <p>Chapter 14, Environmental Health and Toxicology, 352 Lethal dose 50% (LD50), 371 Evaluation of dose response curves, 371 Human health issues linked to pollution, 361-369 Pathogens and infectious diseases, 356-360</p>	point source Safe Drinking Water Act E-waste Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Resource Conservation and Recovery Act (RCRA) Delaney Clause of the Federal Food Lethal Dose 50% (LD50) Dead zone/Hypoxic zone Nutrient runoff/pollution Neurotoxin: mercury, lead, Wastewater/ Sewage treatment Eutrophication nonpoint source biochemical oxygen demand (BOD) endocrine disruptors/ HAA - hormonally active agents/gender benders Maximum Contaminant Level (MCL) Clean Water Act Bioaccumulation reduce, reuse, recycle Sanitary landfill dose response curve Oxygen sag curve MERS Hormonally active agents Anthropogenic indicator species oxygen sag curve thermal pollution primary, secondary, and tertiary treatment persistent organic pollutants (POPs) Biomagnification integrated waste management Sedimentation Wetlands Cholera Dissolved oxygen	AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment	
	8.2 Human Impacts on Ecosystems	Describe the impacts of human activities on aquatic ecosystems.	Organisms have a range of tolerance for various pollutants. Organisms have an optimum range for each factor where they can maintain homeostasis. Outside of this range, organisms may experience physiological stress, limited growth, reduced reproduction, and in extreme cases, death. Coral reefs have been suffering damage due to a variety of factors, including increasing ocean temperature, sediment runoff, and destructive fishing practices. Oil spills in marine waters cause organisms to die from the hydrocarbons in oil. Oil that floats on the surface of water can coat the feathers of birds and fur of marine mammals. Some components of oil sink to the ocean floor, killing some bottom-dwelling organisms. Oil that washes up on the beach can have economic consequences on the fishing and tourism industries. Oceanic dead zones are areas of low oxygen in the world's oceans caused by increased nutrient pollution. An oxygen sag curve is a plot of dissolved oxygen levels versus the distance from a source of pollution, usually excess nutrients and biological refuse. Heavy metals used for industry, especially mining and burning of fossil fuels, can reach the groundwater, impacting the drinking water supply. Litter that reaches aquatic ecosystems, besides being unsightly, can create intestinal blockage and choking hazards for wildlife and introduce toxic substances to the food chain. Increased sediment in waterways can reduce light infiltration, which can affect primary producers and visual predators. Sediment can also settle, disrupting habitats. When elemental sources of mercury enter aquatic environments, bacteria in the water convert it to highly toxic methylmercury.				
	8.3 Endocrine Disruptors	Describe endocrine disruptors.	Endocrine disruptors are chemicals that can interfere with the endocrine system of animals. Endocrine disruptors can lead to birth defects, developmental disorders, and gender imbalances in fish and other species.				AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment
	8.4 Human Impacts on Wetlands and Mangroves	Describe the impacts of human activity on wetlands and mangroves.	Wetlands are areas where water covers the soil, either part or all of the time. Wetlands provide a variety of ecological services, including water purification, flood protection, water filtration, and habitat. Threats to wetlands and mangroves include commercial development, dam construction, overfishing, and pollutants from agriculture and industrial waste.				AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment
	8.5 Eutrophication	Explain the environmental effects of excessive use of fertilizers and detergents on aquatic ecosystems.	Eutrophication occurs when a body of water is enriched in nutrients. The increase in nutrients in eutrophic aquatic environments causes an algal bloom. When the algal bloom dies, microbes digest the algae, along with the oxygen in the water, leading to a decrease in the dissolved oxygen levels in the water. The lack of dissolved oxygen can result in large die-offs of fish and other aquatic organisms. Hypoxic waterways are those bodies of water that are low in dissolved oxygen.				AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment AP Classroom and Teacher Created Assessment

		Compared to eutrophic waterways, oligotrophic waterways have very low amounts of nutrients, stable algae populations, and high dissolved oxygen.			AP Classroom and Teacher Created Assessment
		Anthropogenic causes of eutrophication are agricultural runoff and wastewater release.			AP Classroom and Teacher Created Assessment
8.6 Thermal Pollution	Describe the effects of thermal pollution on aquatic ecosystems	Thermal pollution occurs when heat released into the water produces negative effects to the organisms in that ecosystem.			AP Classroom and Teacher Created Assessment
		Variations in water temperature affect the concentration of dissolved oxygen because warm water does not contain as much oxygen as cold water.			AP Classroom and Teacher Created Assessment
8.7 Persistent Organic Pollutants (POPs)	Describe the effect of persistent organic pollutants (POPs) on ecosystems.	Persistent organic pollutants (POPs) do not easily break down in the environment because they are synthetic, carbon-based molecules (such as DDT and PCBs).			AP Classroom and Teacher Created Assessment
		Persistent organic pollutants (POPs) can be toxic to organisms because they are soluble in fat, which allows them to accumulate in organisms' fatty tissues.			AP Classroom and Teacher Created Assessment
		Persistent organic pollutants (POPs) can travel over long distances via wind and water before being redeposited.			AP Classroom and Teacher Created Assessment
8.8 Bioaccumulation and Biomagnification	Describe bioaccumulation and biomagnification	Bioaccumulation is the selective absorption and concentration of elements or compounds by cells in a living organism, most commonly fat-soluble compounds.			AP Classroom and Teacher Created Assessment
		Biomagnification is the increase in concentration of substances per unit of body tissue that occurs in successively higher trophic levels of a food chain or in a food web.			AP Classroom and Teacher Created Assessment
	Describe the effects of bioaccumulation and biomagnification	Some effects that can occur in an ecosystem when a persistent substance is biomagnified in a food chain include eggshell thinning and developmental deformities in top carnivores of the higher trophic levels.			AP Classroom and Teacher Created Assessment
		Humans also experience harmful effects from biomagnification, including issues with the reproductive, nervous, and circulatory systems.			AP Classroom and Teacher Created Assessment
		DDT, mercury, and PCBs are substances that bioaccumulate and have significant environmental impacts.			AP Classroom and Teacher Created Assessment
8.9 Solid Waste Disposal	Describe solid waste disposal methods.	Solid waste is any discarded material that is not a liquid or gas. It is generated in domestic, industrial, business, and agricultural sectors			AP Classroom and Teacher Created Assessment
		Solid waste is most often disposed of in landfills. Landfills can contaminate groundwater and release harmful gases.			AP Classroom and Teacher Created Assessment
		Electronic waste, or e-waste, is composed of discarded electronic devices including televisions, cell phones, and computers.			AP Classroom and Teacher Created Assessment
		A sanitary municipal landfill consists of a bottom liner (plastic or clay), a storm water collection system, a leachate collection system, a cap, and a methane collection system.			AP Classroom and Teacher Created Assessment
	Describe the effects of solid waste disposal methods.	Factors in landfill decomposition include the composition of the trash and conditions needed for microbial decomposition of the waste.			AP Classroom and Teacher Created Assessment
		Solid waste can also be disposed of through incineration, where waste is burned at high temperatures. This method significantly reduces the volume of solid waste but releases air pollutants.			AP Classroom and Teacher Created Assessment
		Some items are not accepted in sanitary landfills and may be disposed of illegally, leading to environmental problems. One example is used rubber tires, which when left in piles can become breeding grounds for mosquitoes that can spread disease.			AP Classroom and Teacher Created Assessment
		Some countries dispose of their waste by dumping it in the ocean. This practice, along with other sources of plastic, has led to large floating islands of trash in the oceans. Additionally, wildlife can become entangled in the waste, as well as ingest it.			AP Classroom and Teacher Created Assessment
8.10 Waste Reduction Methods	Describe changes to current practices that could reduce the amount of generated waste and their associated benefits and drawbacks.	Recycling is a process by which certain solid waste materials are processed and converted into new products			AP Classroom and Teacher Created Assessment

		Recycling is one way to reduce the current global demand on minerals, but this process is energy-intensive and can be costly.			AP Classroom and Teacher Created Assessment
		Composting is the process of organic matter such as food scraps, paper, and yard waste decomposing. The product of this decomposition can be used as fertilizer. Drawbacks to composting include odor and rodents.			AP Classroom and Teacher Created Assessment
		E-waste can be reduced by recycling and reuse. E-wastes may contain hazardous chemicals, including heavy metals such as lead and mercury, which can leach from landfills into groundwater if they are not disposed of properly.			AP Classroom and Teacher Created Assessment
		Landfill mitigation strategies range from burning waste for energy to restoring habitat on former landfills for use as parks.			AP Classroom and Teacher Created Assessment
		The combustion of gases produced from decomposition of organic material in landfills can be used to turn turbines and generate electricity. This process reduces landfill volume.			AP Classroom and Teacher Created Assessment
8.11 Sewage Treatment	Describe best practices in sewage treatment.	Primary treatment of sewage is the physical removal of large objects, often through the use of screens and grates, followed by the settling of solid waste in the bottom of a tank.			AP Classroom and Teacher Created Assessment
		Secondary treatment is a biological process in which bacteria break down organic matter into carbon dioxide and inorganic sludge, which settles in the bottom of a tank. The tank is aerated to increase the rate at which the bacteria break down the organic matter.			AP Classroom and Teacher Created Assessment
		Tertiary treatment is the use of ecological or chemical processes to remove any pollutants left in the water after primary and secondary treatment.			AP Classroom and Teacher Created Assessment
		Prior to discharge, the treated water is exposed to one or more disinfectants (usually, chlorine, ozone, or UV light) to kill bacteria.			AP Classroom and Teacher Created Assessment
8.12 Lethal Dose 50% (LD50)	Define lethal dose	Lethal dose 50% (LD50) is the dose of a chemical that is lethal to 50% of the population of a particular species.			AP Classroom and Teacher Created Assessment
8.13 Dose Response Curve	Evaluate dose response	A dose response curve describes the effect on an organism or mortality rate in a population based on the dose of a particular toxin or drug.			AP Classroom and Teacher Created Assessment
8.14 Pollution and Human Health	Identify sources of human health issues that are linked to pollution.	It can be difficult to establish a cause and effect between pollutants and human health issues because humans experience exposure to a variety of chemicals and pollutants.			AP Classroom and Teacher Created Assessment
		Dysentery is caused by untreated sewage in streams and rivers.			AP Classroom and Teacher Created Assessment
		Mesothelioma is a type of cancer caused mainly by exposure to asbestos.			AP Classroom and Teacher Created Assessment
		Respiratory problems and overall lung function can be impacted by elevated levels of tropospheric ozone.			AP Classroom and Teacher Created Assessment
8.15 Pathogens and Infectious Diseases	Explain human pathogens and their cycling through the environment.	Pathogens adapt to take advantage of new opportunities to infect and spread through human populations.			AP Classroom and Teacher Created Assessment
		Specific pathogens can occur in many environments regardless of the appearance of sanitary conditions.			AP Classroom and Teacher Created Assessment
		As equatorial-type climate zones spread north and south in to what are currently subtropical and temperate climate zones, pathogens, infectious diseases, and any associated vectors are spreading into these areas where the disease has not previously been known to occur.			AP Classroom and Teacher Created Assessment
		Poverty-stricken, low-income areas often lack sanitary waste disposal and have contaminated drinking water supplies, leading to havens and opportunities for the spread of infectious diseases.			AP Classroom and Teacher Created Assessment
		Plague is a disease carried by organisms infected with the plague bacteria. It is transferred to humans via the bite of an infected organism or through contact with contaminated fluids or tissues.			AP Classroom and Teacher Created Assessment
		Tuberculosis is a bacterial infection that typically attacks the lungs. It is spread by breathing in the bacteria from the bodily fluids of an infected person.			AP Classroom and Teacher Created Assessment
		Malaria is a parasitic disease caused by bites from infected mosquitoes. It is most often found in sub-Saharan Africa.			AP Classroom and Teacher Created Assessment
		West Nile virus is transmitted to humans via bites from infected mosquitoes.			AP Classroom and Teacher Created Assessment
		Severe acute respiratory syndrome (SARS) is a form of pneumonia. It is transferred by inhaling or touching infected fluids.			AP Classroom and Teacher Created Assessment
		Middle East Respiratory Syndrome (MERS) is a viral respiratory illness that is transferred from animals to humans.			AP Classroom and Teacher Created Assessment
		Zika is a virus caused by bites from infected mosquitoes. It can be transmitted through sexual contact.			AP Classroom and Teacher Created Assessment

			Cholera is a bacterial disease that is contracted from infected water.				AP Classroom and Teacher Created Assessment
Unit 9: Global Change	9.1 Stratospheric Ozone	Explain the importance of stratospheric ozone to life on Earth.	The stratospheric ozone layer is important to the evolution of life on Earth and the continued health and survival of life on Earth.	<p>Chapter 17, The Atmosphere, Air Quality, and Pollution Control, 444 Stratospheric ozone depletion: causes and consequences, 465-467 Mitigation of ozone depletion, 468 Chapter 18, Global Climate Change, 478 Greenhouse effect gases, their source, and environmental effects, 481-485 Specific impacts of global climate change, 485-502 Chapter 16, Marine and Coastal Systems and Resources Ocean warming: causes and environmental effects, 423 Ocean acidification: causes and environmental effects, 433, 498 Chapter 4, Species Interactions and Community Ecology, 72 Invasive species issues, 86-90 Chapter 11, Biodiversity and Conservation Ecology, 268 Human impacts on biodiversity, 282-288 Endangered species: causes and consequences, 289 Mitigation of biodiversity loss, 288-296</p>	Nitrogen Oxides Carbon Oxides Hydrocarbons Ozone Stratosphere Troposphere UV Radiation CFC's Keystone species Biodiversity loss Ocean Acidification Ozone thinning Montreal Protocol Emissions Greenhouse gases Parts per million Infrared Radiation Geoengineering Infrared Radiation Sea level rise Invasive species Greenhouse effect Enhanced greenhouse effect Positive Feedback Aerosol Effect Thermal expansion Permafrost Carbon Capture and Storage/carbon sequestration Endangered species HIPPCO	AP Classroom and Teacher Created Assessment	
			Stratospheric ozone depletion is caused by anthropogenic factors, such as chlorofluorocarbons (CFCs), and natural factors, such as the melting of ice crystals in the atmosphere at the beginning of the Antarctic spring.			AP Classroom and Teacher Created Assessment	
			A decrease in stratospheric ozone increases the UV rays that reach the Earth's surface. Exposure to UV rays can lead to skin cancer and cataracts in humans.			AP Classroom and Teacher Created Assessment	
	9.2 Reducing Ozone Depletion	Describe chemicals used to substitute for chlorofluorocarbons (CFCs).	Ozone depletion can be mitigated by replacing ozone-depleting chemicals with substitutes that do not deplete the ozone layer. Hydrofluorocarbons (HFCs) are one such replacement, but some are strong greenhouse gases.			AP Classroom and Teacher Created Assessment	
			Identify the greenhouse gases.			The principal greenhouse gases are carbon dioxide, methane, water vapor, nitrous oxide, and chlorofluorocarbons (CFCs).	AP Classroom and Teacher Created Assessment
	9.3 The Greenhouse Effect		While water vapor is a greenhouse gas, it doesn't contribute significantly to global climate change because it has a short residence time in the atmosphere.			AP Classroom and Teacher Created Assessment	
			The greenhouse effect results in the surface temperature necessary for life on Earth to exist.			AP Classroom and Teacher Created Assessment	
			Identify the sources and potency of the greenhouse gases.			Carbon dioxide, which has a global warming potential (GWP) of 1, is used as a reference point for the comparison of different greenhouse gases and their impacts on global climate change. Chlorofluorocarbons (CFCs) have the highest GWP, followed by nitrous oxide, then methane.	AP Classroom and Teacher Created Assessment
	9.4 Increases in the Greenhouse Gases	Identify the threats to human health and the environment posed by an increase in greenhouse gases.	Global climate change, caused by excess greenhouse gases in the atmosphere, can lead to a variety of environmental problems including rising sea levels resulting from melting ice sheets and ocean water expansion, and disease vectors spreading from the tropics toward the poles. These problems can lead to changes in population dynamics and population movements in response.			AP Classroom and Teacher Created Assessment	
			Explain how changes in climate, both short- and long-term, impact ecosystems.			The Earth has undergone climate change throughout geologic time, with major shifts in global temperatures causing periods of warming and cooling as recorded with CO2 data and ice cores.	AP Classroom and Teacher Created Assessment
	9.5 Global Climate Change		Effects of climate change include rising temperatures, melting permafrost and sea ice, rising sea levels, and displacement of coastal populations.			AP Classroom and Teacher Created Assessment	
			Marine ecosystems are affected by changes in sea level, some positively, such as in newly created habitats on now-flooded continental shelves, and some negatively, such as deeper communities that may no longer be in the photic zone of seawater.			AP Classroom and Teacher Created Assessment	
			Winds generated by atmospheric circulation help transport heat throughout the Earth. Climate change may change circulation patterns, as temperature changes may impact Hadley cells and the jet stream.			AP Classroom and Teacher Created Assessment	
			Oceanic currents, or the ocean conveyor belt, carry heat throughout the world. When these currents change, it can have a big impact on global climate, especially in coastal regions.			AP Classroom and Teacher Created Assessment	
			Climate change can affect soil through changes in temperature and rainfall, which can impact soil's viability and potentially increase erosion.			AP Classroom and Teacher Created Assessment	
Earth's polar regions are showing faster response times to global climate change because ice and snow in these regions reflect the most energy back out to space, leading to a positive feedback loop.			AP Classroom and Teacher Created Assessment				
As the Earth warms, this ice and snow melts, meaning less solar energy is radiated back into space and instead is absorbed by the Earth's surface. This in turn causes more warming of the polar regions.			AP Classroom and Teacher Created Assessment				
Global climate change response time in the Arctic is due to positive feedback loops involving melting sea ice and thawing tundra, and the subsequent release of greenhouse gases like methane.			AP Classroom and Teacher Created Assessment				
One consequence of the loss of ice and snow in polar regions is the effect on species that depend on the ice for habitat and food.			AP Classroom and Teacher Created Assessment				

9.6 Ocean Warming		Explain the causes and effects of ocean warming.	Ocean warming is caused by the increase in greenhouse gases in the atmosphere.			AP Classroom and Teacher Created Assessment	
			Ocean warming can affect marine species in a variety of ways, including loss of habitat, and metabolic and reproductive changes.			AP Classroom and Teacher Created Assessment	
9.7 Ocean Acidification			Ocean warming is causing coral bleaching, which occurs when the loss of algae within corals cause the corals to bleach white. Some corals recover and some die.			AP Classroom and Teacher Created Assessment	
			Explain the causes and effects of ocean acidification.			Ocean acidification is the decrease in pH of the oceans, primarily due to increased CO ₂ concentrations in the atmosphere, and can be expressed as chemical equations.	AP Classroom and Teacher Created Assessment
						As more CO ₂ is released into the atmosphere, the oceans, which absorb a large part of that CO ₂ , become more acidic.	AP Classroom and Teacher Created Assessment
						Anthropogenic activities that contribute to ocean acidification are those that lead to increased CO ₂ concentrations in the atmosphere: burning of fossil fuels, vehicle emissions, and deforestation.	AP Classroom and Teacher Created Assessment
9.8 Invasive Species			Ocean acidification damages coral because acidification makes it difficult for them to form shells, due to the loss of calcium carbonate.			AP Classroom and Teacher Created Assessment	
			Explain the environmental problems associated with invasive species and strategies to control them.			Invasive species are species that can live, and sometimes thrive, outside of their normal habitat. Invasive species can sometimes be beneficial, but they are considered invasive when they threaten native species.	AP Classroom and Teacher Created Assessment
						Invasive species are often generalist, r-selected species and therefore may outcompete native species for resources.	AP Classroom and Teacher Created Assessment
						Invasive species can be controlled through a variety of human interventions.	AP Classroom and Teacher Created Assessment
9.9 Endangered Species			Explain how species become endangered and strategies to combat the problem.	A variety of factors can lead to a species becoming threatened with extinction, such as being extensively hunted, having limited diet, being outcompeted by invasive species, or having specific and limited habitat requirements.			AP Classroom and Teacher Created Assessment
				Not all species will be in danger of extinction when exposed to the same changes in their ecosystem. Species that are able to adapt to changes in their environment or that are able to move to a new environment are less likely to face extinction.			AP Classroom and Teacher Created Assessment
				Selective pressures are any factors that change the behaviors and fitness of organisms within an environment.			AP Classroom and Teacher Created Assessment
				Species in a given ecosystem compete for resources like territory, food, mates, and habitat, and this competition may lead to endangerment or extinction.			AP Classroom and Teacher Created Assessment
				Strategies to protect animal populations include criminalizing poaching, protecting animal habitats, and legislation.			AP Classroom and Teacher Created Assessment
9.10 Human Impacts on Biodiversity			Explain how human activities affect biodiversity and strategies to combat the problem.	HIPPCO (habitat destruction, invasive species, population growth, pollution, climate change, and over exploitation) describes the main factors leading to a decrease in biodiversity.			AP Classroom and Teacher Created Assessment
				Habitat fragmentation occurs when large habitats are broken into smaller, isolated areas. Causes of habitat fragmentation include the construction of roads and pipelines, clearing for agriculture or development, and logging.			AP Classroom and Teacher Created Assessment
				The scale of habitat fragmentation that has an adverse effect on the inhabitants of a given ecosystem will vary from species to species within that ecosystem.			AP Classroom and Teacher Created Assessment
				Global climate change can cause habitat loss via changes in temperature, precipitation, and sea level rise.			AP Classroom and Teacher Created Assessment
				Some organisms have been somewhat or completely domesticated and are now managed for economic returns, such as honeybee colonies and domestic livestock. This domestication can have a negative impact on the biodiversity of that organism.			AP Classroom and Teacher Created Assessment
				Some ways humans can mitigate the impact of loss of biodiversity include creating protected areas, use of habitat corridors, promoting sustainable land use practices, and restoring lost habitats.			AP Classroom and Teacher Created Assessment

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/ Activity
Introduction to Forensic Science	Develop an understanding of the scientific principles of crime scene investigation and reconstruction, including evidence collection	S.W. describe what forensic science is, and identify the aspects of its methodology.		forensic science, class evidence, individual evidence, physical evidence, criminalist	teacher created document
		S.W.D. an understanding of the history of forensic science, as well as individuals who helped shaped it.		Locard Exchange Principle	teacher created document
		S.W. identify the different types and forms evidence.			performance-based lab, teacher created document
Hair Analysis	Develop a plan to conduct an investigation using forensic techniques for the collection of hair evidence.	S.W. identify the locations of hair samples found at the crime scene. S.W. learn techniques for collecting hair samples. S.W.D. knowledge of the different types of hair and its structure.		shaft, medulla, cortex, melanin, imbricate, fragmented, continuous	teacher created document
	Demonstrate the ability to gather and analyze hair evidence for a specific crime.	S.W. collect and identify hair samples from their classmates. S.W. collect and identify control samples from the suspects and victims of the crime. S.W. collect and identify hair evidence from the scene of the crime.			performance-based lab, curricular and/or teacher created assessment

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/ Activity
	Communicate scientific information that explains the results of hair evidence, as it relates to a specific crime.	S.W. use supporting evidence to explain which suspects are ruled out, based on the analysis of the collected samples.			performance-based lab, curricular resources/assessment
Blood Type Analysis	Develop a plan to conduct an investigation using forensic techniques for the collection of blood typing evidence.	S.W. identify the locations of blood samples found at the crime scene. S.W. learn techniques for collecting blood samples. S.W.D. knowledge of the different types of blood cells and their structure.		antigen, antibody, coagulation	teacher created document
	Demonstrate the ability to gather and analyze blood typing evidence for a specific crime.	S.W. collect and identify control samples from the suspects and victims of the crime. S.W. collect and identify blood evidence from the scene of the crime.			performance-based lab, curricular and/or teacher created assessment
	Communicate scientific information that explains the results of blood typing evidence, as it relates to a specific crime.	S.W. use supporting evidence to explain which suspects are ruled out, based on the analysis of the collected samples.			performance-based lab, curricular resources/assessment
Fingerprint Analysis	Develop a plan to conduct an investigation using forensic techniques for the collection of fingerprint evidence.	S.W. identify the locations of fingerprint samples found at the crime scene. S.W. learn techniques for collecting fingerprint samples. S.W.D. knowledge of the different types of fingerprints and their patterns.		whorl, arch, loop, minutia, radial, ulnar	teacher created document

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/ Activity
	Demonstrate the ability to gather and analyze fingerprint evidence for a specific crime.	S.W. collect and identify fingerprint samples from their classmates. S.W. collect and identify control samples from the suspects and victims of the crime. S.W. collect and identify fingerprint evidence from the scene of the crime.			performance-based lab, curricular and/or teacher created assessment
	Communicate scientific information that explains the results of fingerprint evidence, as it relates to a specific crime.	S.W. use supporting evidence to explain which suspects are ruled out, based on the analysis of the collected samples.			performance-based lab, curricular resources/assessment
Blood Spatter Analysis	Develop a plan to conduct an investigation using forensic techniques for the collection of blood spatter evidence.	S.W. identify the locations of blood samples found at the crime scene. S.W. learn techniques for identifying blood spatter samples. S.W.D. knowledge of the different types of blood spatter patterns and their causes for formation.		medium velocity, high velocity, cast off, shadowing, spines, wipe	teacher created document
	Demonstrate the ability to gather and analyze blood spatter evidence for a specific crime.	S.W. construct and identify control samples. S.W. collect and identify blood spatter evidence from the scene of the crime.			performance-based lab, curricular and/or teacher created assessment

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/ Activity
	Communicate scientific information that explains the results of blood spatter evidence, as it relates to a specific crime.	S.W. use supporting evidence to explain which suspects are ruled out, based on the analysis of the collected samples.			performance-based lab, curricular resources/assessment
DNA Analysis	Develop a plan to conduct an investigation using forensic techniques for the collection of DNA evidence.	S.W. identify the locations of DNA samples found at the crime scene. S.W. learn techniques for collecting DNA samples. S.W.D. knowledge of how to read DNA banding patterns.		restriction enzymes, flouresce, gel electrophoresis, micro pipette, centrifuge, agarose	teacher created document
	Demonstrate the ability to gather and analyze DNA evidence for a specific crime.	S.W. extract and collect DNA samples from plants. S.W. conduct gel electrophoresis tests on samples of DNA. S.W. identify DNA evidence from the scene of the crime.			performance-based lab, curricular and/or teacher created assessment
	Communicate scientific information that explains the results of DNA evidence, as it relates to a specific crime.	S.W. use supporting evidence to explain which suspects are ruled out, based on the analysis of the collected samples.			performance-based lab, curricular resources/assessment
Shoe Impression Analysis	Develop a plan to conduct an investigation using forensic techniques for the collection of shoe impressions.	S.W. learn techniques for making casts of shoe impressions. S.W.D. knowledge of shoe impression analysis.		shoe impression, shoe print, latent print, cast	teacher created document

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/ Activity
	Demonstrate the ability to gather and analyze dental evidence for a specific crime.	S.W. construct their own shoe impressions and make a cast from them. S.W. construct an analysis from the cast of their own shoe. S.W. compare and contrast different casts and prints to determine the perpetrator from a group of suspects.			performance-based lab, curricular and/or teacher created assessment
	Communicate scientific information that explains the results of dental evidence, as it relates to a specific crime.	S.W. use supporting evidence to explain which suspects are ruled out, based on the analysis of the collected samples.			performance-based lab, curricular resources/assessment
Dental Analysis	Develop a plan to conduct an investigation using forensic techniques for the collection of dental evidence.	S.W. learn techniques for making dental impressions and casts. S.W.D. knowledge of dental metric analysis.		occlusion, odontology, Joseph Warren, Paul Revere, Oscar Amoedo, Imprint, cast, alginate, metric analysis, primary/permanent teeth, maxillary, mandibular, retrognathic, prognathic	teacher created document
	Demonstrate the ability to gather and analyze dental evidence for a specific crime.	S.W. construct their own teeth impressions and make a cast from them. S.W. construct a metric analysis from the cast of their own teeth. S.W. compare and contrast different casts and impressions to determine the perpetrator from a group of suspects.			performance-based lab, curricular and/or teacher created assessment

Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	Assessment/Benchmark/ Activity
	Communicate scientific information that explains the results of dental evidence, as it relates to a specific crime.	S.W. use supporting evidence to explain which suspects are ruled out, based on the analysis of the collected samples.			performance-based lab, curricular resources/assessment
Document Analysis	Develop a plan to conduct an investigation using forensic techniques for the collection of document evidence.	S.W. learn techniques for identifying different paper and ink types. S.W.D. knowledge of the different types of altered or forged documents.		line quality, line habits, exemplar, forged/alter document, watermark, tracing, free hand, chromatography	teacher created document
	Demonstrate the ability to gather and analyze document evidence for a specific crime.	S.W. collect and identify different paper samples from the teacher. S.W. compare and contrast different ink types. S.W. will use forensic techniques to reveal different hidden messages. S.W. will use forensic techniques to determine whether a document is an original or has been altered.			performance-based lab, curricular and/or teacher created assessment
	Communicate scientific information that explains the results of document evidence, as it relates to a specific crime.	S.W. use supporting evidence to explain which suspects are ruled out, based on the analysis of the collected samples.			performance-based lab, curricular resources/assessment

					Assessment/Benchmark/Activity
Strand	State Standard	SPS Learning Goal	Unit	Vocabulary	
Introduction to Water		*describe historical perspective of role of water		water footprint	Teacher created assessments including lab practicals
		*evaluate personal water footprint			Teacher created assessments including lab practicals
					Teacher created assessments including lab practicals
Characteristics of Water		*describe elemental make-up of water		capillary action, polarity, hydrophobic, hydrophilic, solvent, solute, surface tension, adhesion, cohesion	Teacher created assessments including lab practicals
		*identify and describe capillary action			Teacher created assessments including lab practicals
		*identify and describe surface tension			Teacher created assessments including lab practicals
		*describe why water is considered the universal solvent			Teacher created assessments including lab practicals

				evaporation, condensation, precipitation, runoff, reservoir	Teacher created assessments including lab practicals
Hydrologic Cycle		*describe movement of water in different phases throughout the water cycle			
				watershed, glacier, river, ocean, impoundment	Teacher created assessments including lab practicals
Surface Water		*describe global water abundance			
					Teacher created assessments including lab practicals
		*define watershed			
					Teacher created assessments including lab practicals
		*identify local, state, and national watersheds			
					Teacher created assessments including lab practicals
		*describe impacts on surface water quality			
				porosity, permeability, well, well casing, aquifer, infiltration, percolation, soil triangle	Teacher created assessments including lab practicals
Groundwater		*explain the difference between porosity and permeability			
					Teacher created assessments including lab practicals
		*describe aquifer properties and the movement and storage of groundwater			
					Teacher created assessments including lab practicals
		*interpret and analyze data focused on historical use of groundwater in Nebraska			

		*describe and apply tenets of Republic River Compact			Teacher created assessments including lab practicals
		*design a solution to a groundwater contamination problem			Teacher created assessments including lab practicals
		*describe well components			Teacher created assessments including lab practicals
Water Quality		*apply government drinking water regulatory standards to identify contaminant levels that might be harmful to human health		blue-green algae, atrazine, contaminant, dead zone,	Teacher created assessments including lab practicals
		*propose and evaluate methods for mitigating human impacts on water quality			Teacher created assessments including lab practicals
		*evaluate the trade-off between agricultural productivity and water quality as a result of fertilizer usage and runoff			Teacher created assessments including lab practicals
Water Treatment		*describe water treatment procedures			Teacher created assessments including lab practicals
		*engineer a treatment plan for a water sample			Teacher created assessments including lab practicals

Water Scarcity		*Identify strategies and best practices to decrease water stress and increase water quality		scarcity	Teacher created assessments including lab practicals
		*evaluate information and policy statements regarding the current and future predicted state of water resources			Teacher created assessments including lab practicals
Water and Politics		*Synthesize data and information from multiple reliable sources			Teacher created assessments including lab practicals
		*Analyze the political problems that arise when water supplies must be shared across borders			Teacher created assessments including lab practicals
Water Pollution		*describe common water pollutants and effects			Teacher created assessments including lab practicals
		*explain historical significance of water pollution on specific communities			Teacher created assessments including lab practicals



PROPOSAL FOR:
SEWARD PUBLIC SCHOOLS

2024 THOMAS SAF-T-LINER HDX
REAR ENGINE SCHOOL BUS
84 Passenger Seated to 78

PURCHASE PRICE.....\$155,600.00

Quote valid until August 10, 2022

AIR CONDITIONING: OPTIONAL...add...\$10,950.00

MCC model AC-10W523. 120,000 BTU free-blow system with three (3) evaporators: rear in-wall, front side mount, and mid ship side mount. Skirt mount condensers and transit style compressor included.

(OR)

AIR CONDITIONING: OPTIONAL...add...\$25,125.00

Roof Top Parcel Rack Ducted A/C System-140,000 BTU system.

- Ducted air to each passenger position
- Louvered, closable vents at each passenger position
- Separate drivers air conditioning
- LED Reading Lights at each passenger position
- USB charging ports at each passenger position
- Coach Bus style parcel racks
- Roof top condensers and evaporators
- TM65 Transit Style Compressor

SIZE: 39' 11" length. 84 capacity seated to 78. Complies with all FMVSS and State of Nebraska Dept of Education Rule 92 applicable standards.

AIR RESTRICTION INDICATOR

Engine compartment mounted air restriction indicator

ALTERNATOR

Leece Neville 240 AMP 12 Volt pad mounted with automatic spring-loaded tensioner

AXLES

Front - 13,200 lbs. (oil lubed hubs)

Rear - 23,000 lbs.

Magnetic rear axle drain and fill plug. Ratio 5.29 Geared to run 75 MPH

BACK-UP CAMERA

4.3" monitor built into the driver's mirror to display area behind bus when shifted into reverse.

BARRIERS

(2) 39" barriers covered with Proform fire block and right side modesty panel.

BATTERIES

Triple batteries 2100 CCA- skirt mounted battery box with slide out tray frame mounted. Battery cut-off switch included.

BODY PANELS

Exterior 20 gauge galvanized- Interior 22 gauge Galvalume from belt line to seat rail

BRAKES

Drum air brakes front and rear. Bendix AD-9 heated air dryer. Heated automatic moisture ejector on wet tank. Remote moisture drains on other air tanks. Automatic slack adjusters

BUMPER

Heavy duty front bumper. Rear bumper is 1.6 times stronger than triple profile bumpers. Bumper is formed in shape of roadside guardrail and is tucked into side skirts to prevent catching. 3/16" plate steel with 5369 sq. in. section modulus.

COOLING SYSTEM

Aluminum core radiator equipped with Mylar tank for easy coolant level visibility. All radiator hoses are heavy-duty with constant torque spring clamps. Long life coolant protected to -40 (5 years/150, 00 miles). Low coolant sensor light

CONSTRUCTION

Eight ply rubber body to frame insulators on each cross member. Double bolted body to frame clips. Stamped one-piece wheel wells to reduce dust and water leaks. 14 gauge Galvalume U shaped side skirt reinforcements. Two crash rails installed between interior and exterior roof panels. Roof bows extend below floor line. Interior floor bumper 2" steel plate. Rear body 14 gauge reinforcements. Dual 16 gauge Galvaneel roof rail stringers. Closed section, box type, rear corner post design. Header system achieves 1100 lb. push out force for each window

CONTROLS, ENGINE COMPARTMENT:

Engine control switch and starter button, multi-function engine gauge and compartment lights.

CRUISE CONTROL

Switches dash mounted

DASH GAUGES

Speedometer, Odometer, Tachometer, Hour meter, Voltmeter, Oil pressure, Fuel, Trip meter, Ammeter, Water temperature, Transmission temperature, High-low beam indicator, turn signal indicators, low coolant light, low oil pressure or high coolant temperature warning light and buzzer

DEF TANK

12 gallon tank w/ hinged door

DIAGNOSTICS

SAE 9 pin diagnostics interface connector mounted under dash, electronic engine integral warning and derate protection system

Dash mounted diagnostic panel for electrical system

Multi-plex electronics

DOOR, SIDE EMERGENCY:

Retainer to hold door open with a four inch header pad. Sliding bolt vandal lock included.

DRIVER'S COMMAND CENTER

Mounted left of driver with up to 24 rocker switches with LED backlighting for electrical equipment with rheostat control switch. Side-mounted driver's storage compartment. Charging outlet for cell phone.

DRIVELINE

SPL 100 Dana Spicer main drive line has computerized angle alignment. Lubed for life splines that are booted to prevent contamination from water and road debris. Iron flywheel housing.

ELECTRICAL SYSTEM

12-volt system with color-coded and numbered wiring with matched weatherproof connectors. All that passes through metal is grommeted. ECMs are chassis frame mounted. Automatic circuit breakers protected by solid-state technology. Switches are rocker type design and provide "Smart Switch" technology that can be repositioned without rewiring or reprogramming.

ENGINE

Cummins ISL 9 liter - 300 HP - 860 lb/ft. torque in line 6 turbo diesel
1000 watt block heater w/ plug in mounted in bumper, heated fuel/water separator.

EXHAUST BRAKE

Cummins turbo exhaust brake. On/off switch located in dash.

ENTRANCE DOOR

Air operated outward opening entrance door with keyed vandal lock system installed. Four inch header pad installed above door. 86" high clear opening. Assist hand rail at entrance steps.

ESC

Electronic Stability Control is a computerized technology that improves a vehicle's stability by detecting and reducing loss of traction and skidding.

EXHAUST

Single right hand horizontal muffler with horizontal tail pipe

FENDERETTES

Mounted over front and rear wheel wells

FLOOR COVERING

5/8 Plywood floor covered with heavy-duty vinyl. All floor seam separations sealed and

covered with durable rustproofed metal stripping. Cove molding along the wall. Molded rubber wheel housing covers. Rubber covered entrance step also have white nosing installed. Entire floor is sealed with adhesives

FRAME

Dual C channel main frames, full length made of 5/16" x 3" x 10 1/8" steel frame 50,000 PSI, powder coated finish. Class 8 truck type 7.5 "x 33.5" reinforced cross members. Tow hooks front and rear

FUEL TANK

100 gallon capacity safety mounted between frame rails with protective cage. Includes hinged/locking fuel tank door.

GLOVE BOX & STORAGE

Large glove box located above driver.

DEFROSTERS/HEATERS:

Full length defrost system with ducting routed below driver's window and full width below

windshield with closely spaced louvered outlets and dash mounted diffusers.

90,000 BTU Defroster with three speed setting switch located on drivers panel.

15,000 BTU driver's heater with two speed blower motor

(3) 84,000 BTU rear under seat passenger heaters with separate two speed blower motors for each heater, **booster pump included.**

HEADROOM

78" Interior height

HORNS

Dual electric with center steering wheel activation

INSULATION/NOISE REDUCTION PACKAGE

1.5 "Fiberglass in ceiling, bulkheads, walls, 2" thick fire resistant thermo-bonded polyester insulation in rafter cavities, sound abatement package, and undercoating.

Acoustic ceiling above driver.

LETTERING

As required by Federal and State requirements in black block lettering including capacity, SEWARD PUBLIC SCHOOLS in 6" black letters. Unit numbers as needed. Yellow reflective striping as required by state regulations.

LIGHTS

Halogen extended life headlights with daytime running lights, driver's dome light on separate switch, dual row of dome lights on separate switch.

LED Clearance/Marker- red rear/amber rear, back-up- clear, stop/tail- red.

LED Marker/Cluster-Per FMVSS with shields.

LED side mounted turn signals on fender and side panels
Warning - halogen eight lamp warning system.
LED Stepwell light, LED skirt mounted entrance door light.
Strobe Light

LIGHT MONITOR

16 unit - monitors function of exterior lights

MANUALS

Printed operator's maintenance manual including electrical troubleshooting guide, web based service and parts access. Line set ticket

MIRRORS

Open View 7" X 10" **heated and remote-control** side mirrors; Heated cross-over mirrors with tripod bracket. Interior 6' x 30"

MUD FLAPS

Heavy Duty Front and rear

PAINT

Exterior painted National School Bus Yellow with black trim using lead free urethane PPG paint, interior painted light gray, undercoated chassis.

PARCEL RACKS

Interior tubular parcel racks above passenger windows on both side with padded ends.

RADIO

AM/FM with eight (8) deluxe roof mounted speakers.

ROOF HATCHES

(2) Transpec roof hatches installed in self-sealing pre-cut panels

RUB RAILS

Four (4) exterior side rub rails located at window level, seat level, floor, level, and bottom skirt. Seat rail is one piece formed to length, 14 gauge Galvalume. Sealed with Saf-T-Bond structural adhesive.

SAFETY EQUIPMENT

(2) Nebraska first aid kits, one mounted front and one at rear of bus. 5 lb chemical type fire extinguisher, moisture proof body fluid clean up kit, triangle safety kit.

SAFETY SOLENOID SWITCH

Single switch for complete shutdown of all heaters and radio at railroad crossings

SEAT/DRIVER

National high back adjustable '**Heated**' **Air Ride** seat with three-point retractable

shoulder harness, dual armrests, and adjustable lumbar support.

SEAT/PASSENGER

(28) 39" passenger seats covered with 42 oz. Proform leatherette fire block material and pivot cushion for cleaning. Powder-coated frames

STEERING

Full power steering. Gear driven hydraulic pump. 19" diameter padded full floating **tilt/telescoping steering wheel.**

STOP ARM

Power air operated stop arm with wind guard. Highly reflective and equipped with high intensity LED lights. Controlled by an electric switch and door operation in conjunction with 8 lamp warning system

SUSPENSION

Front – 13,200 lb. Parabolic Soft Ride Springs

Rear – 23,000 lb. Hendrickson Air Ride

TIRES

(2) Hankook 11R22.5 front – 16 ply

(4) Hankook 11R22.5 rear – 16 ply M/S tread

TRANSMISSION

Allison 3000 PTS - 6 speed automatic over drive

UNDER CARRIAGE LUGGAGE BAYS

125" Double door pass through luggage compartment **with locks and lights**

VENTILATOR

Static type, non-closable

WHEELBASE

277"

WHEELS

22.5 x 7.5-painted black 10-hole hub piloted

Chicago Rawhide oil wheel seals

WINDOWS

ABS automotive grade technology 12" high x25" wide opening split sash tempered glass. All side and rear passenger windows tinted, bonded, and banded. Six-tinted tempered push out windows; all interior and exterior window frames are flat black.

WINDSHIELD

Fully tinted with top deep shaded band. 6" x 30" adjustable Plexiglas sun visor on driver's side. Grab handles over windshield exterior for cleaning access.

WINDSHIELD WIPERS

Electric, intermittent 2 speed heavy duty wet arm wipers.

WARRANTY

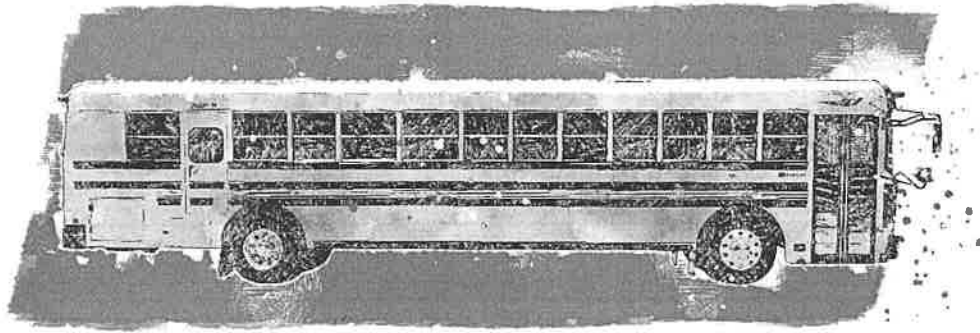
Engine: Limited 5 Year/ 100,000 Mile

Transmission: Limited 5 Year/Unlimited Mile

Axles: 5 Year/ Unlimited Miles

Body: Limited 5 Year

Chassis & Vendor Supplied Items: 1, 2, and 5 Year



**2024 MODEL REAR ENGINE
BLUE BIRD ALL-AMERICAN
78 PASSENGER**

Rev. 9-9-15

Prepared Especially For:

SEWARD PUBLIC SCHOOLS

By: TYLER COX

Date: 07/20/2022



BLUE BIRD

Distributed And Serviced
By:
Nebraska/Central Equipment, Inc.
112 Apollo Avenue
P O Box 3
Alda, Nebraska 68810
308-381-2473

**2024 BLUE BIRD ALL-AMERICAN
EXCEEDING NEBRASKA MINIMUM STANDARDS**

QUANTITY	MODEL NUMBER	WHEELBASE	HEAD ROOM	BODY LENGTH	NUMBER ROWS	KNEE SPACING	CAPACITY
ONE (1)	T3RE 4006	273"	77"	40' 06"	13 ROWS	28.70"	78 PASSENGER

~ OVERVIEW ~

ENGINE:	CUMMINS- 9.0 LITER, DIESEL, 300HP @ 860LB-FT						
TRANSMISSION:	ALLISON, 3000 PTS 6 -SPEED AUTOMATIC						
AXLES:	FRONT - HENDRICKSON 13,200 LB. WITH HENDRICKSON AIR-RIDE SUSPENSION FRONT 14,600 REAR - HENDRICKSON 21,000 LB. WITH HENDRICKSON AIR-RIDE SUSPENSION REAR AXLE, 5.29						
GVWR:	34,200 LBS.						
BRAKES:	MERITOR AIR BRAKES, 6"FRT/7"RR						
ALTERNATOR:	350 AMP, AVI 160 HI OUTPUT LEECE NEVILLE						
FUEL TANK:	100 GALLON BETWEEN FRAME RAILS, RH FILL						
BATTERIES:	3 GROUP 31, 12V, 1875 CCA						
WHEELS:	10 STUD HUB PILOTED DISC - ALUMINUM, 8.25X22.5						
TIRES:	GOODYEAR - 11R22.5, LRH, FUELMAX RTD RR/END RSA FT						

STANDARD FEATURES

- LATCHING AND LOCKING COMPARTMENT DOORS
- SCREWED DOWN PLYWOOD FLOOR
- DAYTIME RUNNING LIGHTS
- DRIVER'S ADJUSTABLE VISOR
- 3 POINT DRIVER'S SEAT BELT
- 2 PIECE CURVED SHADED WINDSHEILD
- ELECTRIC POWERED ENTRANCE DOOR
- STEPWELL LIGHT
- STEEL BUMPERS
- ELECTRONIC CRUISE CONTROL
- 75MPH ROAD GOVERNOR
- 6X30 REARVIEW INTERIOR MIRROR
- TAILPIPE EXITS UNDER REAR BUMPBER, TURNED DOWN

Optional Features

----- CHASSIS -----

- BENDIX AD-IP AIR DRYER
- 100 GALLON FUEL TANK
- MULTI-STAGE AIR CLEANER
- BATTERY DISCONNECT SWITCH
- TOW HOOKS, FRONT AND REAR

----- BODY -----

- PASS-THRU LUGGAGE COMPARTMENT 122 CU.FT.
- GAS CYLINDER POWERED LUGGAGE DOORS
- PASS-THRU LUGGAGE COMPARTMENT LIGHTS
- VANDAL LOCKS

- STEPWELL PROTECTION
- WINDSHEILD GRIP HANDLES
- 80K BTU FRONT HEATERS
- 80K BTU REAR HEATERS
- 12K BTU DRIVERS HEATER
- TINTED WINDOWS
- REMOTE CONTROL REARVIEW MIRROR
- HEATED EXTERIOR MIRRORS W/ 15 MIN. TIMER

----- **ELECTRICAL** -----

- LED EXTERIOR LIGHTS
- LED BOARDING LIGHT
- STROBE LIGHT
- AM/FM/MP3 RADIO
- PA SYSTEM
- 8 SPEAKER DELUXE STEREO
- 112 DB BACKING HORN
- MANUAL RESET BREAKERS
- BACK-UP CAMERA

----- **PAINT** -----

- EXTERIOR PAINTED NATIONAL SCHOOL BUS YELLOW
- INTERIOR ASTRO WHITE
- BLUE BIRD LOGO PAINTED BLACK
- 3M GRADE REFLECTIVE PACKAGE

----- **SEATS** -----

- NATIONAL AIR RIDE DRIVER'S SEAT w/ HEAT
- DRIVER'S ARM REST
- SHOULDER PADS
- MODESTY PANELS
- GRAY VINYL FIREBLOCK SEATS
- SEATBELT CUTTER

----- **ACCESSORIES** -----

- RUBBER MUD FLAPS
- EMERGENCY EQUIPMENT COMPARTMENT
- 5 LB FIRE EXTINGUISHER
- TRIANGULAR WARNING DEVICES
- FIRST AID KIT
- BODY FLUID KIT
- CUP HOLDER

----- INTERIOR -----

- FORWARD GRAB RAIL
- 1/2" PLYWOOD FLOOR
- FULL LENGTH ACOUSTIC HEADLINING
- ALUMINUM FLOOR TRIM
- FLOOR, BLACK RUBBER
- AUXILIARY DUAL DEFROST FANS

----- EXTERIOR -----

- FENDERS REAR RUBBER
- FENDERS FRONT RUBBER
- ALL WEATHER 26 IN. WIPERS

BODY, OPTIONS AND CHASSIS \$ 169,086.00

LESS TRADE-IN ALLOWANCE \$ N/A

YOUR NET PURCHASE PRICE \$ 169,086.00 - pricing valid for 60 days

**DELIVERY CHARGE F.O.B. CUSTOMER LOCATION* \$600.00*

PREPAYMENT OPTIONS:

100%: \$ 169,086.00 Prepayment Discount, Deduct..... < \$ 1,600.00 >

Please check box & sign here if you'd like to take advantage of our pre-pay discount.

Sign Here: _____

OPTIONAL EQUIPMENT:

- 1) If you wish to add: Air Conditioning Add < \$ 11,500.00 >
- 2) If you wish to add: Parcel Racks Add < \$ 2,200.00 >
- 3) >
- 4) >
- 5) >
- 6) >

ACCEPTANCE FOR (School or Organization) :

BY: _____

TITLE: _____

DATE: _____

BY: **Tyler Cox**

DATE: **07/20/2022**

ESTIMATED COMPLETION DATE: 210-250 DAYS
ADD 30 EXTRA DAYS FOR AIR CONDITIONING

ALL RESPONSIBILITIES OF OWNERSHIP AND LIABILITY ARE TRANSFERRED TO CUSTOMER AT DELIVERY ~ TERMS: NET CASH ON DELIVERY

August 2, 2022

School District of Seward

Transit School Bus Bids

Bluebird 78 Passenger Bus	\$169,086.00
Air Conditioning option	\$13,700.00
Sub Total:	\$182,786.00
Trade allowance:	\$4,500.00
Total Price:	\$178,286.00

Thomas 78 Passenger Bus	\$155,600.00
Air Conditioning option	\$25,125.00
Sub Total:	\$180,725.00
Trade Allowance:	\$4,850.00
Total Price:	\$175,875.00

Board of Education Regular Meeting

School District of Seward

410 South Street

Seward, NE 68434

Monday, July 11, 2022 5:30 PM

Attendance Taken at 5:41 PM.

Paul Duer:	Present
Jill Hochstein:	Present
Jana Hughes:	Present
Ryne Seaman:	Absent
Danielle Shipley:	Present
Shawn Svoboda:	Absent

1. Preliminary Procedures

1.1. Call meeting to order & announce Open Meetings Act is Posted

1.2. Public Notice as publicized per board policy

The public notice was publicized in the Seward County Independent and posted at city hall, library and courthouse. The public notice was dated July 6, 2022.

1.3. Roll Call

1.3.1. Action to excuse board members if necessary

Motion to excuse Ryne Seaman and Shawn Svoboda from tonights meeting Passed with a motion by Jill Hochstein and a second by Danielle Shipley.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Danielle Shipley: Yea

1.4. Pledge of Allegiance

1.5. 1.5 Mission The school district of Seward--where every student, every day is a success--affirms that all students will have the skills to become productive and contributing members of a global community. In cooperation with family and community members, the

district is committed to the development of each student academically, emotionally, socially, and physically.

1.6. Approval of Agenda

Motion to approve the agenda as presented Passed with a motion by Danielle Shipley and a second by Jill Hochstein.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Danielle Shipley: Yea

2. Public Forum: (The Board President reserves the right to place time limits on individuals and topics.)

2.1. Public Forum on Agenda Items: This is your opportunity to speak to items on the agenda. If you are not a part of the presentation of the agenda item you need to speak now. Thank you for your participation.

There was none.

2.2. Public Forum on Any Topic: This is your opportunity to speak to any topic concerning the school district. Since it is not an agenda item the board cannot discuss or take action at this time on the matter. Future discussion can be requested as an agenda item. Thank you for your participation.

There was none.

3. Reports

3.1. Superintendent's Report

Dr. Fields discussed the hail damage to our vehicles and buildings from the storm on June 14, 2022. The painting in the high school gym is complete, and the new gym floor is almost done. The carpeting project and painting is complete at the Elementary. The electrical at the high school is complete, and the HVAC is on hold because they are waiting on parts. The Seward County Public Hearing is scheduled for September 26th at 6:30 Civic Center. We need to discuss possible projects in the future, so we can set the special building fund. Dr. Fields updated the board on the food service program. The alternative high school will move to the high school. Dr. Fields discussed bus bids with the board because it is taking so long with getting a new bus at this time. Wet Globes will be used for outdoor activities in all schools across Nebraska.

4. Discussion Items

5. Action Items

5.1. First Reading of 2022-2023 Policies

Motion to approve the first reading of policies presented with any changes/revisions to policies that were discussed. Passed with a motion by Jill Hochstein and a second by Paul Duer.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Danielle Shipley: Yea

5.2. 2022-2023 Staff Handbook

Motion to approve the 2022-2023 Staff Handbook Passed with a motion by Danielle Shipley and a second by Paul Duer.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Danielle Shipley: Yea

5.3. Interlocal Contract for Enrichment Activities Southeast Nebraska Regional Program

Motion to approve the Interlocal Contract for Enrichment Activities Southeast Nebraska Regional Program and ESU 18 Passed with a motion by Jill Hochstein and a second by Paul Duer.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Danielle Shipley: Yea

5.4. Personnel: Middle School Band Teacher

Motion to approve the teaching contract for Jessica Schreiner for the 2022-2023 school year. Passed with a motion by Jill Hochstein and a second by Danielle Shipley.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Danielle Shipley: Yea

6. Future Agenda Items

Projects for Special Building Fund
Summer Projects
Final Reading of Policies
Upcoming Budget Meetings

7. Consent Agenda

7.1. Approval of Minutes

7.2. Approval of Financial Reports

7.2.1. Treasurer

7.2.2. Budget

7.2.3. Activities

7.2.4. Athletic

7.3. Approval of Claims

7.3.1. General Fund - \$1,530,315.09

7.3.2. Special Building Fund - \$154,725.00

7.3.3. Depreciation Fund - \$31,300.00

7.4. Approval of Consent Agenda

Motion to approve the consent agenda as presented Passed with a motion by Jill Hochstein and a second by Danielle Shipley.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Danielle Shipley: Yea

8. Adjournment

Motion to adjourn the meeting at 7:01 PM with the next study session and regular board meeting scheduled for August 8th at 5:30 and 7:00 PM Passed with a motion by Danielle Shipley and a second by Jill Hochstein.

Paul Duer: Yea, Jill Hochstein: Yea, Jana Hughes: Yea, Danielle Shipley: Yea

Prepared by:

Paul Duer

Heidi Covert

Secretary

**SCHOOL DISTRICT OF SEWARD
TREASURER'S REPORT
FOR THE MONTH
ENDED JULY 31, 2022**

GENERAL FUND (ACCOUNT NUMBER 100-172)

Bank Balance		4,190,189.40
Bob Dahms--Local Taxes	212,195.69	
Karey Adamy--Local Taxes	2,998.94	
Seward Hot Lunch--Reimbursement	34,576.17	
Danielle Klooster--2Q Preschool Payment	65.00	
Fehlhafters--Sale of junk	70.00	
Fehlhafters--Sale of junk	93.00	
City of Seward--Fines	25.08	
Tysha Smith--Preschool Deposit	75.00	
Joshua Dorcey--Preschool Deposit	75.00	
Concordia--Dual Credit Courses	3,560.00	
ESU 6--Stipends	791.97	
Pepsi--Rebate	80.75	
Jones Bank - Interest	246.77	
State of Nebraska--Medicaid	2,432.92	
State of Nebraska--Medicaid	5,769.16	
State of Nebraska--State Aid	27,028.00	
State of Nebraska--ESSERS II	23,409.00	
State of Nebraska--IDEA 6412	32,553.00	
State of Nebraska--IDEA 6423	7,221.00	
Jones Bank - Interest	297.35	
		<u>353,563.80</u>
Disbursements for the Month -----		4,543,753.20
Bank Balance-----		1,508,514.00
Less Outstanding Checks -----		3,035,239.20
Available Balance -----		<u>469,743.46</u>
		<u>2,565,495.74</u>

GENERAL RESERVE FUND (ACCOUNT NUMBER 461-170)

Beginning Balance -----		1,082,187.05
Transfer to General Fund for Cash Flow Purposes -----		0.00
Interest -----		<u>295.01</u>
Bank Balance -----		<u>1,082,482.06</u>

CD #48806 CNB--Interest Rate: 2.15%-Maturity Date 10/27/2022	1,500,000.00
CD #70001737 JNB--Interest Rate: 1.60%--Maturity Date 09/27/2022	<u>1,000,771.44</u>
	2,500,771.44

TOTAL IN GENERAL RESERVE FUND 3,583,253.50

**SCHOOL DISTRICT OF SEWARD
TREASURER'S REPORT
FOR THE MONTH
ENDED JULY 31, 2022**

DEPRECIATION FUND (ACCOUNT NUMBER 154--006)

Beginning Account Balance -----	20,822.43
Deposit from CD-----	260,320.83
Deposit: Cattle Bank-----	187.48
Disbursements: -----	<u>31,300.00</u>
Interest-----	21.66
Bank Balance -----	<u>250,052.40</u>

CD#48805--CNB--.49% DATE DUE 08/04/2022-----	545,142.55
CD#70001738-JNB--1.6% DATE DUE 09/27/2022-----	<u>500,000.00</u>

TOTAL CD'S 1,045,142.55

TOTAL IN DEPRECIATION FUND ACCOUNTS 1,295,194.95

SPECIAL BUILDING FUND (ACCOUNT NUMBER 10-074-9)

Beginning Balance -----	651,624.22
Deposits: Bob Dahms--Local Taxes-----	2,245.44
Karey Adamy--Loal Taxes-----	49.75
Disbursements -----	<u>154,725.00</u>
Interest-----	38.14
Bank Balance -----	<u>499,232.55</u>

TOTAL IN SPECIAL BUILDING FUND ACCOUNTS 499,232.55

UNEMPLOYMENT FUND ACCOUNT (ACCT # 473-633)

Beginning Balance -----	25,036.63
Interest -----	4.25
Disbursements -----	<u>0.00</u>
Bank Balance -----	<u>25,040.88</u>

GIFTS AND DONATIONS (ACCT # 162036)

Beginning Balance -----	23,942.55
Deposit:-----	0.00
Interest-----	1.84
Disbursements -----	<u>0.00</u>
Bank Balance -----	<u>23,944.39</u>

**SCHOOL DISTRICT OF SEWARD
TREASURER'S REPORT
FOR THE MONTH
ENDED JULY 31, 2022**

QUALITY CAPITAL PURPOSE UNDERTAKING FUND (ACCT #640-822)

Beginning Balance -----	141,440.46
Bob Dahms & Karey Adamy --Local Taxes -----	920.30
Interest -----	10.89
Disbursements -----	<u>0.00</u>
Bank Balance -----	<u>142,371.65</u>

BOARD REVOLVING FUND (ACCOUNT NUMBER 159-913)

Beginning Balance -----	16,947.01
Deposits: SPS -----	0.00
Interest -----	1.30
Disbursements -----	<u>205.00</u>
Bank Balance -----	<u>16,743.31</u>

HOT LUNCH FUND (ACCOUNT # 10 353 5)

Beginning Balance -----	402,408.22
Interest -----	24.32
State of NE Payments -----	0.00
Other Receipts -----	702.37
Disbursements -----	<u>34,684.97</u>
Bank Balance -----	368,449.94
Amount Due District -----	<u>11,247.70</u>
Available Balance -----	<u>357,202.24</u>

STUDENT FEE FUND (ACCOUNT #668-157)

Beginning Balance -----	1,291.26
Receipts: Seward High School Activity Fund -----	0.00
Interest -----	0.00
Disbursements -----	<u>0.00</u>
Bank Balance -----	<u>1,291.26</u>

**SCHOOL DISTRICT OF SEWARD
TREASURER'S REPORT
FOR THE MONTH
ENDED JULY 31, 2022**

BOND FUND (ACCOUNT #60000586)

Beginning Balance-----	1,068,944.40
Bob Dahms - Taxes-----	9,581.53
Karey Adamy - Taxes-----	208.71
Deposit--Joens Bank-----	0.00
Interest-----	82.43
Disbursements-----	0.00
Bank Balance -----	<u>1,078,817.07</u>

CD#70001325--JNB RATE OF .61% DATE DUE 11/28/2022----- 350,000.00

TOTAL IN BOND FUND ACCOUNT **1,428,817.07**

Heidi Covert, Treasurer

**BUDGET PRINTOUT
RECAPITULATION
JULY 31, 2022**

RECEIPTS PORTION OF THE 2021-2022 BUDGET

	AMOUNT BUDGETED	AMOUNT RECEIVED	AMOUNT REMAINING	% RECEIVED TO DATE
RECEIPTS	21,620,000.00	18,341,668.71	3,278,331.29	84.84%
HOT LUNCH		<u>1,007,282.61</u>		
TOTAL RECEIPTS		19,348,951.32	2,271,048.68	

EXPENDITURES PORTION OF THE 2021-2022 BUDGET

CATEGORY	BUDGET	SPENT	REMAINING	% EXPENDED
REG INSTRUCTION	9,800,000.00	8,331,899.86	1,468,100.14	85.02%
SPECIAL ED	3,200,000.00	2,256,154.20	943,845.80	70.50%
SS--PUPILS	1,625,000.00	1,055,734.47	569,265.53	64.97%
SS-INSTRUCTION	625,000.00	458,882.02	166,117.98	73.42%
GENERAL ADM	400,000.00	293,428.69	106,571.31	73.36%
PRIN ADMIN	1,200,000.00	934,957.68	265,042.32	77.91%
GEN BUSINESS	400,000.00	237,722.32	162,277.68	59.43%
OPER/MAINT	2,250,000.00	1,689,295.97	560,704.03	75.08%
TRANSPORTATION	835,000.00	552,487.05	282,512.95	66.17%
FOUNDATION	0.00	11,890.00	-11,890.00	0.00%
TRANSFERS	30,000.00	33,893.78	-3,893.78	112.98%
GEN FUND TOTALS	20,365,000.00	15,856,346.04	4,508,653.96	77.86%
FEDERAL FUNDS	1,255,000.00	1,130,069.62	124,930.38	90.05%
SIXPENCE		161,470.00		
GRAND TOTAL	21,620,000.00	17,147,885.66	4,472,114.34	79.31%
HOT LUNCH	880,000.00	953,028.58		
TOTAL	22,500,000.00	18,100,914.24		

Seward Elementary
June 2022
Activity Account

5/1/22 THRU 5/31/22

	BEG. BAL.	RECEIPTS	DISB.	END BAL.
ELEM LIBRARY	931.89	0	0	931.89
ELEM OTHER	9027.01	0	326.35	8700.66
INTEREST	241.90	0.41	0	242.31
TOTALS	\$ 10,200.80			\$9,874.86

CHECK STATEMENT BALANCE 6/31/22 \$9,874.86

PRINCIPAL *Jessica Don* DATE 8-2-22
BOOKKEEPER *Tricia Retic* DATE 8/2/22

Seward Elementary
Activity Account

Deposits and Checks for the Month of May

DATE	TO:	Amount	CK
06/10/22.	Linpepco (Pop Machine Order)	71.10	Debit
06/16/22.	Ideal Water	120.00	2105
06/22/22.	Pac and Save	135.25	2106

*outstanding check

Seward Elementary
July 2022
Activity Account

5/1/22 THRU 5/31/22

	BEG. BAL.	RECEIPTS	DISB.	END BAL.
ELEM LIBRARY	931.89	0	0	931.89
ELEM OTHER	8,700.66	0	291.21	8,409.45
INTEREST	242.31	0.39	0	242.70
TOTALS	\$ 9,874.86			\$9,584.04

CHECK STATEMENT BALANCE 6/31/22 \$9,584.04

PRINCIPAL *Jessica Corn* DATE 8-2-22
BOOKKEEPER *Jina Peter* DATE 8/2/22

Seward Elementary
Activity Account

Deposits and Checks for the Month of May

DATE	TO:	Amount	CK
07/20/22.	Walmart- supplies	291.21	2107

*outstanding check

08/05/22

Seward Middle School
Balance Sheet Standard
As of July 31, 2022

	<u>Jul 31, '22</u>
ASSETS	
Current Assets	
Checking/Savings	
Posters	599.26
FCCLA	599.76
Book Fair	838.76
Art	177.10
PTO	7,537.24
Sports Buttons	2,122.59
Music	781.06
Athletics	22,457.46
Band	132.00
Builders Club	1,242.51
Bully Response Team	1,098.58
Courtesy Fund	435.93
FCS	0.16
Industrial Arts	512.87
Interest	1,221.57
Library	1,518.59
Milk	0.94
MS Computer	3.10
Outdoor Ed	23,739.08
PE	501.27
Sales Tax	7.61
Student Council	1,195.19
Wellness	462.50
Yearbook	9,861.44
Total Checking/Savings	<u>77,046.57</u>
Total Current Assets	<u>77,046.57</u>
TOTAL ASSETS	<u><u>77,046.57</u></u>
LIABILITIES & EQUITY	
Equity	
Opening Bal Equity	<u>77,046.57</u>
Total Equity	<u>77,046.57</u>
TOTAL LIABILITIES & EQU...	<u><u>77,046.57</u></u>

Seward Middle School
Balance Sheet Detail
 As of July 31, 2022

08/05/22

Type	Date	Num	Name	Memo	Clr	Split	Amount	Balance
ASSETS								79,037.50
Current Assets								79,037.50
Checking/Savings								79,037.50
Posters								599.26
Total Posters								599.26
FCCLA								599.76
Total FCCLA								599.76
Book Fair								838.76
Total Book Fair								838.76
Art								177.10
Total Art								177.10
PTO								7,537.24
Total PTO								7,537.24
Sports Buttons								2,122.59
Total Sports Buttons								2,122.59
Music								781.06
Total Music								781.06
Athletics								22,457.46
Total Athletics								22,457.46
Band								132.00
Total Band								132.00
Builders Club								1,242.51

Seward Middle School
Balance Sheet Detail
 As of July 31, 2022

08/05/22

Type	Date	Num	Name	Memo	Cir	Split	Amount	Balance
Total Builders Club								1,242.51
Bully Response Team								3,099.58
General Journal	06/07/22	9799	UNICEF			Opening Bal Eq...	-2,001.00	1,098.58
Total Bully Response Team							-2,001.00	1,098.58
Courtesy Fund								435.93
Total Courtesy Fund								435.93
FCS								0.16
Total FCS								0.16
Industrial Arts								512.87
Total Industrial Arts								512.87
Interest								1,211.50
General Journal	06/30/22					Opening Bal Eq...	5.15	1,216.65
General Journal	07/31/22					Opening Bal Eq...	4.92	1,221.57
Total Interest							10.07	1,221.57
Jay Mart								0.00
Total Jay Mart								0.00
Library								1,518.59
Total Library								1,518.59
Milk								0.94
Total Milk								0.94
MS Computer								3.10
Total MS Computer								3.10

Seward Middle School
Balance Sheet Detail
 As of July 31, 2022

08/05/22

Type	Date	Num	Name	Memo	Clr	Split	Amount	Balance
Outdoor Ed								23,739.08
Total Outdoor Ed								23,739.08
PE								501.27
Total PE								501.27
Project Citizen								0.00
Total Project Citizen								0.00
Sales Tax								7.61
Total Sales Tax								7.61
Student Council								1,195.19
Total Student Council								1,195.19
Wellness								462.50
Total Wellness								462.50
Yearbook								9,861.44
Total Yearbook								9,861.44
Total Checking/Savings							-1,990.93	77,046.57
Accounts Receivable								0.00
Accounts Receivable								0.00
Total Accounts Receivable								0.00
Total Accounts Receivable								0.00
Other Current Assets								0.00
Undeposited Funds								0.00

Seward Middle School
Balance Sheet Detail
 As of July 31, 2022

08/05/22

Type	Date	Num	Name	Memo	Clr	Split	Amount	Balance
Total Undeposited Funds								0.00
Total Other Current Assets								0.00
Total Current Assets							-1,990.93	77,046.57
Fixed Assets								0.00
Total Fixed Assets								0.00
Other Assets								0.00
Total Other Assets								0.00
TOTAL ASSETS							-1,990.93	77,046.57
LIABILITIES & EQUITY								
Liabilities								79,037.50
Current Liabilities								0.00
Accounts Payable								0.00
Accounts Payable								0.00
Total Accounts Payable								0.00
Total Accounts Payable								0.00
Credit Cards								0.00
Total Credit Cards								0.00
Other Current Liabilities								0.00
Sales Tax Payable								0.00
Total Sales Tax Payable								0.00

Seward Middle School
Balance Sheet Detail

As of July 31, 2022

08/05/22

Type	Date	Num	Name	Memo	Clr	Split	Amount	Balance
Total Other Current Liabilities								
								0.00
Total Current Liabilities								
								0.00
Long Term Liabilities								
								0.00
Total Long Term Liabilities								
								0.00
Total Liabilities								
								0.00
Equity								
Opening Bal Equity								79,037.50
General Journal	06/07/22	9799	UNICEF					79,037.50
General Journal	06/30/22				X	Bully Response ...	-2,001.00	77,036.50
General Journal	07/31/22				X	Interest	5.15	77,041.65
					X	Interest	4.92	77,046.57
Total Opening Bal Equity							-1,990.93	77,046.57
Retained Earnings								
								0.00
Total Retained Earnings								
								0.00
Net Income								
								0.00
Total Net Income								
								0.00
Total Equity								
							-1,990.93	77,046.57
TOTAL LIABILITIES & EQUITY								
							-1,990.93	77,046.57

SEWARD HIGH SCHOOL

General Ledger Report

Financial Report

From Date: 7/1/2022
To Date: 07/31/2022

From Acct: 1
To Acct: 999999

Activity Accounts

Acct	Account Name	Beg. Bal.	Recpt / JV	Disb / JV	Transfers	End. Bal.	YTD Payables	Work Bal
100	DUAL CREDIT CLASSES	\$8,342.98	\$0.00	\$0.00	\$0.00	\$8,342.98	\$0.00	\$8,342.98
105	ALTERNATIVE SCHOOL	\$268.84	\$0.00	\$0.00	\$0.00	\$268.84	\$0.00	\$268.84
110	ACT CLASS	\$379.96	\$0.00	\$0.00	\$0.00	\$379.96	\$0.00	\$379.96
115	HONOR SOCIETY	(\$268.06)	\$385.00	\$0.00	\$0.00	\$116.94	\$0.00	\$116.94
120	ALUMNI ASSOCIATION	\$738.03	\$0.00	\$0.00	\$0.00	\$738.03	\$0.00	\$738.03
125	GUIDANCE	(\$467.54)	\$0.00	\$0.00	\$0.00	(\$467.54)	\$0.00	(\$467.54)
126	AMBASSADORS	\$679.09	\$0.00	\$0.00	\$0.00	\$679.09	\$0.00	\$679.09
127	AP EXAMS	\$4,524.50	\$0.00	\$0.00	\$0.00	\$4,524.50	\$0.00	\$4,524.50
130	CAREER ACADEMY	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
135	BOWLING	\$1,144.41	\$192.30	\$0.00	\$0.00	\$1,336.71	\$0.00	\$1,336.71
140	FOOTBALL	\$258.35	\$2,561.15	\$(1,754.75)	\$0.00	\$1,064.75	\$0.00	\$1,064.75
142	FOOTBALL-UNIFORMS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
145	WRESTLING	\$561.32	\$429.30	\$0.00	\$0.00	\$990.62	\$0.00	\$990.62
147	X-COUNTRY	\$864.11	\$255.00	\$0.00	\$0.00	\$1,119.11	\$0.00	\$1,119.11
149	TRACK	\$862.25	\$849.05	\$0.00	\$0.00	\$1,711.30	\$0.00	\$1,711.30
150	GIRLS BB CAMP	\$4,323.50	\$344.85	\$(1,087.50)	\$0.00	\$3,580.85	\$0.00	\$3,580.85
155	BOYS BB CAMP	\$8,507.94	\$867.35	\$0.00	\$0.00	\$9,375.29	\$0.00	\$9,375.29
160	BOYS SOCCER	\$387.82	\$78.60	\$(38.48)	\$0.00	\$427.94	\$0.00	\$427.94
165	GIRLS SOCCER	\$2,271.40	\$140.45	\$0.00	\$0.00	\$2,411.85	\$0.00	\$2,411.85
170	SOFTBALL	\$4,302.09	\$533.75	\$(150.00)	\$0.00	\$4,685.84	\$0.00	\$4,685.84
175	VOLLEYBALL	\$3,396.94	\$314.90	\$(579.00)	\$0.00	\$3,132.84	\$0.00	\$3,132.84
180	VIDEO ACCOUNT	\$4,703.55	\$0.00	\$0.00	\$0.00	\$4,703.55	\$0.00	\$4,703.55
185	BASEBALL	\$2,044.52	\$361.30	\$0.00	\$0.00	\$2,405.82	\$0.00	\$2,405.82
190	GIRLS GOLF	\$932.50	\$48.85	\$0.00	\$0.00	\$981.35	\$0.00	\$981.35
195	BOYS GOLF	\$851.10	\$36.10	\$0.00	\$0.00	\$887.20	\$0.00	\$887.20
200	SMUTNY SCHOLARSHIP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
225	ACADEMIC CONTESTS	\$1,044.00	\$100.00	\$0.00	\$0.00	\$1,144.00	\$0.00	\$1,144.00
230	SCIP	\$342.50	\$0.00	\$0.00	\$0.00	\$342.50	\$0.00	\$342.50
240	THORELL SCHOLARSHIPS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
250	PEPSI SCHOLARSHIPS	\$2,000.00	\$0.00	\$0.00	\$0.00	\$2,000.00	\$0.00	\$2,000.00
260	SCHOLARSHIP ACCT.	\$140.00	\$0.00	\$0.00	\$0.00	\$140.00	\$0.00	\$140.00
270	BOWMASTER SCHOLARSHIP	(\$25.00)	\$0.00	\$0.00	\$0.00	(\$25.00)	\$0.00	(\$25.00)
275	CONCESSIONS	\$3,374.82	\$0.00	\$0.00	\$0.00	\$3,374.82	\$0.00	\$3,374.82
300	Teacher Pop Fund	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
310	VENDING SALES	\$6,172.52	\$285.16	\$(45.00)	\$0.00	\$6,412.68	\$0.00	\$6,412.68
315	DLC ACCOUNT	\$25.81	\$0.00	\$0.00	\$0.00	\$25.81	\$0.00	\$25.81
330	DRIVER EDUCATION	\$6,760.00	\$0.00	\$0.00	\$0.00	\$6,760.00	\$0.00	\$6,760.00
400	FBLA	(\$4,250.57)	\$4,503.00	\$0.00	\$0.00	\$252.43	\$0.00	\$252.43
410	FFA	\$16,529.72	\$2,900.00	\$(559.18)	\$0.00	\$18,870.54	\$0.00	\$18,870.54
415	FCS LAB FEES	\$7,897.50	\$0.00	\$0.00	\$0.00	\$7,897.50	\$0.00	\$7,897.50
418	DISTRICT 2 FCCLA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
420	FCCLA	\$7,790.12	\$3,308.50	\$(4,483.45)	\$0.00	\$6,615.17	\$0.00	\$6,615.17
425	DRILL TEAM/DANCE	\$1,321.74	\$0.00	\$0.00	\$0.00	\$1,321.74	\$0.00	\$1,321.74
430	SOCIAL MEDIA TEAM	\$5,981.18	\$0.00	\$0.00	\$0.00	\$5,981.18	\$0.00	\$5,981.18
440	LEADERSHIP TEAM	\$3,533.22	\$0.00	\$(942.25)	\$0.00	\$2,590.97	\$0.00	\$2,590.97
445	E SPORTS	\$112.31	\$40.00	\$0.00	\$0.00	\$152.31	\$0.00	\$152.31
450	MATH	\$44.46	\$0.00	\$0.00	\$0.00	\$44.46	\$0.00	\$44.46
460	SCIENCE LAB FEES	\$333.32	\$0.00	\$0.00	\$0.00	\$333.32	\$0.00	\$333.32
470	KEY CLUB	\$5,705.48	\$439.70	\$0.00	\$0.00	\$6,145.18	\$0.00	\$6,145.18
475	SPANISH ACCOUNT	\$66.94	\$0.00	\$0.00	\$0.00	\$66.94	\$0.00	\$66.94
490	ART	\$5,102.94	\$0.00	\$(1,602.01)	\$0.00	\$3,500.93	\$0.00	\$3,500.93

SEWARD HIGH SCHOOL

General Ledger Report

Financial Report

From Date: 7/1/2022
To Date: 07/31/2022

From Acct: 1
To Acct: 999999

Activity Accounts

Acct	Account Name	Beg. Bal.	Recpt / JV	Disb / JV	Transfers	End. Bal.	YTD Payables	Work Bal
495	Study Abroad	\$1,518.18	\$0.00	\$0.00	\$0.00	\$1,518.18	\$0.00	\$1,518.18
500	YEARBOOK	\$2,973.36	\$0.00	\$0.00	\$0.00	\$2,973.36	\$0.00	\$2,973.36
520	BAND TRIP	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
530	SPEECH	(\$56.19)	\$1,224.29	\$0.00	\$0.00	\$1,168.10	\$0.00	\$1,168.10
535	DRAMATICS	\$5,927.98	\$0.00	\$0.00	\$0.00	\$5,927.98	\$0.00	\$5,927.98
540	LIBRARY	\$1,398.29	\$0.00	\$0.00	\$0.00	\$1,398.29	\$0.00	\$1,398.29
545	ALL SCHOOL READS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
550	BAND	\$1,605.60	\$630.60	\$0.00	\$0.00	\$2,236.20	\$0.00	\$2,236.20
554	CHEERLEADERS	\$6,180.57	\$73.10	\$0.00	\$0.00	\$6,253.67	\$0.00	\$6,253.67
555	CHORUS	\$18,411.27	\$1,060.90	\$(5.00)	\$0.00	\$19,467.17	\$0.00	\$19,467.17
560	INDUSTRIAL ARTS/WOODS	\$1,756.43	\$0.00	\$0.00	\$0.00	\$1,756.43	\$0.00	\$1,756.43
565	TECH PREP/SKILLS USA	(\$345.33)	\$8,940.00	\$(3,489.00)	\$0.00	\$5,105.67	\$0.00	\$5,105.67
570	AUTO/WELDING	\$884.22	\$0.00	\$0.00	\$0.00	\$884.22	\$0.00	\$884.22
575	POWER DRIVE	\$76.57	\$0.00	\$0.00	\$0.00	\$76.57	\$0.00	\$76.57
580	PAY TO PLAY	\$10,194.47	\$0.00	\$(8,700.00)	\$0.00	\$1,494.47	\$0.00	\$1,494.47
600	PHYSICAL EDUCATION	\$34.11	\$0.00	\$0.00	\$0.00	\$34.11	\$0.00	\$34.11
615	REVOLVING ACCT	\$250.12	\$0.00	\$0.00	\$0.00	\$250.12	\$0.00	\$250.12
620	NOW ACCOUNT	\$6,406.40	\$18.50	\$0.00	\$0.00	\$6,424.90	\$0.00	\$6,424.90
700	SOCIAL STUDIES SCHOL	\$50.00	\$0.00	\$0.00	\$0.00	\$50.00	\$0.00	\$50.00
800	ATHLETICS	\$83,111.03	\$4,641.95	\$(2,434.24)	\$0.00	\$85,318.74	\$0.00	\$85,318.74
825	WEIGHTROOM	\$129.19	\$0.00	\$0.00	\$0.00	\$129.19	\$0.00	\$129.19
850	PRIDE	\$406.72	\$0.00	\$0.00	\$0.00	\$406.72	\$0.00	\$406.72
860	AOK	\$393.91	\$0.00	\$0.00	\$0.00	\$393.91	\$0.00	\$393.91
865	HOPE SQUAD	\$165.00	\$0.00	\$0.00	\$0.00	\$165.00	\$0.00	\$165.00
870	STUDENT HELP FUND	\$431.73	\$0.00	\$0.00	\$0.00	\$431.73	\$0.00	\$431.73
900	MEMORIALS	\$70.00	\$0.00	\$0.00	\$0.00	\$70.00	\$0.00	\$70.00
950	IPAD FEES	\$5,637.60	\$0.00	\$0.00	\$0.00	\$5,637.60	\$0.00	\$5,637.60
955	HORTICULTURE	\$505.00	\$0.00	\$0.00	\$0.00	\$505.00	\$0.00	\$505.00
2015	CLASS OF 2015	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2016	CLASS OF 2016	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2017	CLASS OF 2017	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2018	CLASS OF 2018	\$629.54	\$0.00	\$0.00	\$0.00	\$629.54	\$0.00	\$629.54
2019	CLASS OF 2019	\$40.70	\$0.00	\$0.00	\$0.00	\$40.70	\$0.00	\$40.70
2020	CLASS OF 2020	\$960.75	\$0.00	\$0.00	\$0.00	\$960.75	\$0.00	\$960.75
2021	Class of 2021	\$121.21	\$0.00	\$0.00	\$0.00	\$121.21	\$0.00	\$121.21
2022	CLASS OF 2022	(\$1,541.18)	\$2,481.15	\$0.00	\$0.00	\$939.97	\$0.00	\$939.97
2023	CLASS OF 2023	\$2,998.44	\$0.00	\$0.00	\$0.00	\$2,998.44	\$0.00	\$2,998.44
2024	CLASS OF 2024	\$2,428.00	\$0.00	\$0.00	\$0.00	\$2,428.00	\$0.00	\$2,428.00
2025	CLASS OF 2025	\$1,632.00	\$0.00	\$0.00	\$0.00	\$1,632.00	\$0.00	\$1,632.00
Activity Accounts Grand Total		\$274,998.30	\$38,044.80	\$(25,869.86)	\$0.00	\$287,173.24	\$0.00	\$287,173.24

GL Accounts

GL Acct	Begin Bal	Recpt / JV	Disb / JV	Transfers	End Bal	YTD Payables	Work Bal
992 CHECK ACCOUNT	\$274,998.30	\$38,044.80	\$(25,869.86)	\$0.00	\$287,173.24	\$0.00	\$287,173.24
General Ledger Grand Total	\$274,998.30	\$38,044.80	\$(25,869.86)	\$0.00	\$287,173.24	\$0.00	\$287,173.24

SEWARD HIGH SCHOOL

General Ledger Report

Financial Report

From Date:	7/1/2022
To Date:	07/31/2022

From Acct:	1
To Acct:	999999

I have reviewed the above ledger report and attached reports for the current month. I find them accurate and complete to the best of my knowledge.

Bookkeeper: Mary Russell Date: 8/2/22
Principal: [Signature] Date: 8/2/22

Bank Reconciliation Report

Checking Account

992

Date From 7/1/2022
Date to 07/31/2022

Ending Balance on Statement Dated : 07/31/2022	\$300,411.24
Outstanding Deposits (Bank Deposits) -> +	\$0.00
Less Outstanding Checks:	\$13,238.00
Cash Balance as of : 07/31/2022	\$287,173.24 ***

Cash Balance for Checking as of 7/1/2022	\$274,998.30
Add: Total Deposits (Bank Deposits):	\$38,044.80
Less: Total Checks and Withdrawals:	(\$25,869.86)
Computer Cash Balance as of : 07/31/2022	\$287,173.24 ***

Summary of Asset Accounts

<u>Gl Acct</u>	<u>Account Name</u>	<u>Begin Bal</u>	<u>Recpt/JV</u>	<u>Disb/JV</u>	<u>Transfer</u>	<u>End Bal.</u>
992	CHECK ACCOUNT	\$274,998.30	\$38,044.80	(\$25,869.86)	\$0.00	\$287,173.24 ***
Grand Total		\$274,998.30	\$38,044.80	(\$25,869.86)	\$0.00	\$287,173.24

I have reviewed the above ledger report and attached reports for the current month. I find them accurate and complete to the best of my knowledge.

Bookkeeper: Mary Russell Date: 8/2/22
Principal: [Signature] Date: 8/2/22

*** Entries Must Match

SEWARD HIGH SCHOOL
Reconciliation Activity Account Report

From Date: 7/1/2022
To Date: 07/31/2022

From Acct: 800
To Acct: 800

Date	Payee Source Note	Invoice	PO	Doc Ref	Recp/JV	Disb/JV	Transfer	Balance	Offset Acct
Activity Acct: 800 - ATHLETICS								Beginning Balance: \$83,111.03	
Advisor: John Moody									
7/7/22	LOU'S SPORTING GOODS MAT TAPE, SCRBOOKS, TRK SPIKES	ATE746547	14902	59169	\$0.00	\$922.34	\$0.00	\$82,188.69	992
7/7/22	AWARDS UNLIMITED NEXT LEVEL PLATES	63401	14908	59170	\$0.00	\$74.80	\$0.00	\$82,113.89	992
7/13/22	BSN SPORTS FB OFFICIAL GAME BALLS	917264284	14959	59173	\$0.00	\$724.80	\$0.00	\$81,389.09	992
7/20/22	YORK HIGH SCHOOL TRACK & FIELD ENTRY		14961	59175	\$0.00	\$170.00	\$0.00	\$81,219.09	992
7/20/22	LOU'S SPORTING GOODS KNEE PADS, TANNER TEES	ATE746605	14910	59177	\$0.00	\$360.41	\$0.00	\$80,858.68	992
7/20/22	LOU'S SPORTING GOODS FIELD MARKING PAINT	AAH751780	14900	59177	\$0.00	\$153.90	\$0.00	\$80,704.78	992
7/22/22	RECEIPTS SOCCER TOURN ENTRIES			7410	\$190.00	\$0.00	\$0.00	\$80,894.78	992
7/22/22	RECEIPTS SPORTS EXP PAYOUT '21/'22			7415	\$1,526.95	\$0.00	\$0.00	\$82,421.73	992
7/25/22	RECEIPTS 2ND SEM DIST REIMB			7421	\$2,925.00	\$0.00	\$0.00	\$85,346.73	992
7/25/22	USI, INC. LAMINATING POUCHES	W024789600	14958	59187	\$0.00	\$27.99	\$0.00	\$85,318.74	992
Totals					\$4,641.95	\$2,434.24	\$0.00	\$85,318.74	
							Accounts Payable	\$0.00	
							Working Balance	\$85,318.74	
							Currently Encumbered (PO)	\$0.00	

I have reviewed the above ledger report and attached reports for the current month. I find them accurate and complete to the best of my knowledge.

Bookkeeper: Mary Russell Date: 8/2/22
Principal: [Signature] Date: 8/2/22

**SCHOOL DISTRICT OF SEWARD
PROPOSED WARRANTS
AUGUST 8, 2022**

Salaries from July	Salaries	537,293.11
Nebraska.Gov	Transportation	7.50
Jones Bank	FIT/FICA	5,182.78
Tennessee Child Support	Garnishment	59.98
Jones Bank	FIT/FICA	1,211.66
Jones Bank	FIT/FICA	163,985.59
Nebraska Child Support	Garnishment	1,580.00
ASPIRE	403b	9,725.00
Jones Bank	FIT/FICA	7,671.53
Tennessee Child Support	Garnishment	59.98
NPERS	Retirement	151,387.63
Nebraska Department of Revenue	State Tax	27,818.68
Pay Flex	Section 125	2,805.97
ACP Direct	Technology	574.59
Amazon	Supplies	10,810.82
Americam	Maintenance	292.50
American Fence	Maintenance	12,615.00
Apple Inc	Technology	16,991.00
ASCD	Dues & Fees	129.00
Association for Middle Level Education	Dues & Fees	49.99
Awards Unlimited	Other	174.73
B & H Photo	Tech. Supplies	1,763.67
Bern's Body Shop	Transportation	2,505.39
Blick Art Materials	Supplies	1,933.33
BlueCross BlueShield	Health Insurance	206,028.56
BrainPOP LLC	Subscription	230.00
Breakout, Inc	Subscription	198.00
CAERT, Inc	E-Books	1,250.00
Campbells Cleaning	Services	12,000.00
Canon Financial Services	Lease	1,204.04
Capital Business Systems, Inc	Lease	57.81
Central Nebraska Rehabilitation Services	Pupil Services	467.87
City of Seward Utility Dept	Utilities	30,299.40
Computer Hardware	Tech. Repairs	499.00
Cornerstones of Care/BIST	Staff Dev.	405.00
Craig, April	Mileage	42.24
Culligan	Maintenance	40.00
DAS	Distance Learning	259.49
Des Moines Stamp	Supplies	32.90
Directions EAP, LLC	Professional Services	4,140.00
Eakes	Maintenance	11,565.45
Erin M. McCartney	Garnishment	102.00
ESU 2	Software	1,671.00
ESU 4	Distance Learning	14,200.00
ESU 6	ESU Expense	91,837.21
ESU 9	Staff Dev.	199.00
Explore Learning	Subscription	920.00
Farmers Cooperative	Transportation	35,340.10
General Fire & Safety	Hot Lunch Repairs	279.75
Gerhold Concrete	Maintenance	38.00
Glaser Ceramics	Supplies	199.35
Glass Doctor	Transportation	3,435.44

**SCHOOL DISTRICT OF SEWARD
PROPOSED WARRANTS
AUGUST 8, 2022**

Grainger	Maintenance	1,381.08
Happy Numbers, Inc	Subscription	29.00
Hartman, Myiesha	Staff Dev.	26.26
Houghton Mifflin Harcourt	Books	514.23
Interstate All Battery Center	Maintenance	295.20
Jim Krutz	Supplies	100.00
Journeyed. Com, Inc.	Software	1,500.00
Kaplan Early Learning Company	Equipment	457.64
Lakeshore Learning	Supplies	403.22
Lee's Refrigeration	Hot Lunch Repairs	1,710.07
LifeTrack Services	Supplies	1,862.50
Liz's Sweet Stuff	EHA Wellness Grant	158.00
Madison National Life	LTD Ins.	2,651.55
Marlin's Plumbing, Heating & A/C	Grounds	39.23
Matheson	Supplies	427.29
McGraw Hill	Textbook Loans	3,606.10
Meehl, Jan	Pupil Services	599.85
Microscope World	Equipment	1,794.00
Midwest Alarm Services	Maintenance	3,597.00
Midwest Auto Parts (Napa)	Transportation	298.79
Midwest Automotive	Transportation	165.75
Midwest Floor Covering	Maintenance	1,945.00
Midwest Special Instruments	Services	365.00
NACIA	Dues & Fees	25.00
NASCD	Staff Dev.	125.00
Nasco	Supplies	696.74
NCS Pearson	Supplies	805.15
NCSA	Staff Dev.	2,156.00
NCSA Region 1 Principals	Dues & Fees	225.00
Nebraska Landscape Solutions	Grounds	2,037.60
Nebraska Safety Center	Transportation	225.00
Northern Speech Services	Supplies	338.71
Oak Hill Brands Corp	Equipment	264.58
One Source	Admin. Expense	105.00
O'Reilly	Transportation	292.51
Oriental Trading	Supplies	46.56
Overhead Door Company of Columbus	Maintenance	1,355.44
Overhead Door Company of Lincoln	Maintenance	185.00
Pac N Save	Maintenance	277.02
Paper Tiger	Business Support	87.30
Pay Flex	Section 125	137.70
Perform Better	Supplies	3,552.01
Precision Alignment LLC	Maintenance	2,289.89
Rockler	Supplies	2,446.96
Roth, April	Supplies	56.25
Sack Lumber	Maintenance	100.00
Safety Kleen	Transportation	279.85
Savvas	Textbooks	47,224.13
Schlegel, Brad	Staff Dev.	35.00
Scholastic	Periodicals	587.90

**SCHOOL DISTRICT OF SEWARD
PROPOSED WARRANTS
AUGUST 8, 2022**

School District of Seward-Board Revolving	Dues & Fees	502.23
School Specialty	Supplies	2,303.57
Schoolsin	Furniture & Equipment	1,343.82
Seegebarth, Beth	Supplies	230.63
Seward County Independent	Advertising	623.71
Seward Lumber	Maintenance	213.95
Seward Middle School-Activity Fund	Rebate	80.75
Sherwin Williams	Maintenance	209.68
Shiffler	Maintenance	318.21
SiteOne Landscape Supply	Grounds	1,517.48
Sweetwater	Supplies	915.96
Symmetry	Utilities	3,864.00
Taylor & Francis Group, LLC	Books	74.85
Telecky, Marty	Transportation	10.00
Thalls, Thomas	Transportation	61.41
Therapro	Supplies	484.57
Time Warner Cable	Phone	114.98
Transportation Safety Systems	Transportation	160.00
Truck Center Companies	Transportation	3,159.71
Unity School Bus Parts	Transportation	431.83
UNUM	Life Ins.	518.40
Uribe	Services	1,959.00
US Cellular	Communications	130.47
Verizon	Telephone	157.69
WaterLink	Maintenance	225.00
William V. Macgill & Co	Supplies	274.38
Windstream	Telephone	2,185.95
Worthington Direct	Furniture	12,562.35
Zimmerman, Jarren	Staff Dev.	306.36
TOTAL GENERAL FUND CLAIMS		1,498,396.04

**SCHOOL DISTRICT OF SEWARD
PROPOSED WARRANTS
AUGUST 8, 2022**

ADDITIONAL CLAIMS

Baker, Noelle	Supplies	107.53
John Deere Financial	Maintenance	205.53
Uribe	Services	310.70
Wells Fargo	Staff Development	2,694.93
Wells Fargo	Staff Development	1,704.09

TOTAL ADD ON CLAIMS **5,022.78**

**SCHOOL DISTRICT OF SEWARD
PROPOSED SPECIAL BUILDING FUND CLAIMS
AUGUST 8, 2022**

FACILITY ADVOCATES	HS HVAC PROJECT	77,363.00
---------------------------	------------------------	------------------

	TOTAL	77,363.00
--	--------------	------------------

**SCHOOL DISTRICT OF SEWARD
PROPOSED DEPRECIATION FUND CLAIMS
AUGUST 8, 2022**

MIDWEST FLOOR SPECIALISTS LLC	HS GYM FLOOR PAINTING	21,330.00
--------------------------------------	------------------------------	------------------

TOTAL 21,330.00