Unit 1: Living Things and Ecosystems

Content Area: **Science**
Course(s): **Integrated Science 5**
Time Period: **1 marking period**
Length: **8 Weeks**
Status: **Published**

Unit Overview

Students are introduced to the unit's anchoring phenomenon of large organisms. In this unit, students explore how certain trees, animals, and fungi grow to extremes. Students examine the ways organisms interact with their ecosystems, including the roles of producers, consumers, and decomposers. Students understand how matter and energy move in an ecosystem, what makes ecosystems change, and in what ways humans change ecosystems. Last, students act as a segment producer for a TV show's episode featuring big organisms and their ecosystems. Using their knowledge, can students determine what factors cause some organisms to grow really big?

Transfer

Students will be able to independently use their learning to...

-What kinds of long term, independent accomplishments are desired?

- become more environmentally aware and active in their community
- develop a sensitivity towards living and develop an understanding of how human behavior can affect them.
- investigate careers in ecology and/or environmental studies
- become active members of environmental groups.

For more information, read the following article by Grant Wiggins.

http://www.authenticeducation.org/ae_bigideas/article.lasso?artid=60

Meaning

Understandings

Students will understand that...

- energy can be transferred various ways and between objects
- create a diagram that shows that energy in an organism's food was once energy from the Sun
- develop a diagram showing how components of a system interact
- create a model to show how energy in matter transfer in ecosystems
- observe how some systems appear stable, but over long periods of time will change
- identify the cause and effect relationships for changes in ecosystems
- design a system model to show and explain how energy flows through an ecosystem

Essential Questions

Lesson 1: What is an ecosystem?

Lesson 2: What is the role of producers in an ecosystem?

Lesson 3: What is the role of consumers in an ecosystem?

Lesson 4: What is the role of decomposers in an ecosystem?

Lesson 5: How do matter and energy move in an ecosystem?

Lesson 6: What makes an ecosystem healthy or unhealthy?

Lesson 7: How do ecosystems change?

Lesson 8: How do humans change ecosystems?

Application of Knowledge and Skill

Students will know...

Students will know...

- An ecosystem is a community of organisms and its interaction with its environment
- Organisms can be categorized by the functions they serve in an ecosystem: producers, consumers, or decomposers.
- Organisms in an ecosystem have dependent and interdependent relationships, which can be illustrated by food webs.
- Factors that affect growth and reproduction of organisms in an ecosystem include light, water, temperature, and soil.
- Natural and human-made events can "disturb" an ecosystem
- A pollutant is anything that can harm living organisms when too much of it is released into an ecosystem. Pollution is the condition that results when pollutants interact with the environment.
- Pollutants can affect the stability of an ecosystem; solutions can be developed to minimize or alleviate the effects of pollutants.
- Model ecosystems can be used to learn more about the complex relationships that exist on earth.

Students will be skilled at...

Students will be skilled at...

- Using a forceps, pH paper, measuring devices, and other testing equipment appropriately.
- Conducting, recording, and organizing daily observations.
- Planning, implementing, and analyzing experiments and drawing conclusions from the results.
- Making and testing predictions.
- Identifying ecosystems as stable or disturbed and recognizing whether the causes of a disturbed ecosystem are natural or human-made.
- Reading for more information about ecosystems and pollution.
- Communicating information through writing, drawing, data analysis, and discussion.
- Using safe science practices.
- Applying previously learned information to analyze a problem and suggest solutions.

Academic Vocabulary

Lesson 1	Lesson 5
ecosystem	energy pyramid
	food chain
	food web
Lesson 2	Lesson 6
carbon dioxide	predator
oxygen	prey

photosynthesis
producer

Lesson 3
circulation
consumer
digestion

Lesson 7
disturbance
succession

Lesson 4
bacteria
compost
decomposer
fungi

Lesson 8
invasive species

Learning Goal 1

Students will be able to use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the Sun.

SCI.5-PS3-1	Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

Target 1 (Lesson 5)

Create a model of a food chain that shows feeding relationships between organisms.

Target 2 (Lesson 5)

Create a model of a food web that show all the different food chains of an ecosystem.

Learning Goal 2

Students will be able to develop a model to describe the movement of matter among plants, animals,

decomposers and the environment.

5-LS2-1	Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Target 1 (Lesson 1)

Classify all the living and non-living things in an ecosystem.

Target 2 (Lesson 1)

Compare and contrast different ecosystems.

Target 3 (Lessons 3 & 4)

Identify the roles of consumers and decomposers in an ecosystem.

Learning Goal 3

Support an argument that plants get the materials they need for growth chiefly from air and water

SCI.5-LS1-1	Support an argument that plants get the materials they need for growth chiefly from air and water.

Target 1 (Lesson 2)

Identify the roles of producers in an ecosystem.

Learning Goal 4

Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

SCI.5-ESS3-1	Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

Target 1 (Lesson 6)

Explain what makes an ecosystem healthy or unhealthy.

Target 2 (Lesson 7)

Trace the development of changes in an ecosystem that can affect what species are able to live there, and how they interact with each other and their environment.

Target 3 (Lesson 8)

Identify the ways that humans change their ecosystems.

Formative Assessment and Performance Opportunities

- notebook checks
- quiz
- science notebook
- student displays and presentations
- student experiments
- student observations
- student sheets
- teacher observation
- test
- think, pair, share
- web concept map

Summative Assessment

All assessments are differentiated and aligned to the science standards and curriculum. Alternate assessment may include projects or presentations, or a common paper/pencil assessment, or both. Common summative assessments, which include inquiry reflection are developed based on

corresponding TCI Units and are computer based (LinkIt).

Accommodations/Modifications

Accomodations available through the TCI program include read aloud, Spanish text and presentations, leveled text, text highlighting, and notetaking.

English Learners

- Allow students to create cue cards for debate and practice sharing with group before class debate
- Circle and define key terms students may have trouble decoding
- Highlight and define key vocabulary
- Include students in varying reading abilities
- Preteach key vocabulary
- Provide examples prior to activity to get students started
- Provide handouts in Spanish
- Provide multiple copies so students do not need to share
- Provide students with access to Spanish textbook
- Reinforce/reteach concepts in small groups
- Scaffold 3-D assignment
- To practice listening and fluency, call on ELL students and have them paraphrase what another student said during discussion

Special Needs

- Allow students to circle owl remains on chart.
- Allow students to skip outside research for experiment in Lesson 5
- Conduct a think aloud for post viewing of videos
- Create cloze notes
- For debate, reduce choices to two options
- Place students in mixed ability groups
- Precut arrows for students with fine motor skills.
- Provide criteria and constraints

- Reduce amount of videos to view to two
- Reduce data transcribing
- Reduce reading by highlighting or underlining key points

Advanced Learners

- Additional experiment: Use fire to test for carbon dioxide
- Analyze what happens when an organism is removed from a food web.
- Categorize herbivore and carnivore consumers
- Create an energy diagram for a consumer not taught in class.
- Identify producers found in a city
- Make a lima bean food web
- Predict an alternate outcomes: Using Yellowstones wolves reading, have students answer in short story format what might have happened at each decision point if the oppsite decision had been made.
- Research additional examples of changes in ecosystems not taught in class

Unit Resources

Lesson 1

Big Idea: All organisms live where their needs are met. Ecosystems are composed of all the living and nonliving things that interact in an area. There are similarities and differences among ecosystems.

Text: Chamberliss, Marilyn, et al. *Bring Science Alive! Exploring Science Practices*. Rancho Cordova: Teachers' Curriculum Institute, 2015. pp. 4-15.

Materials

- Interactive Student Notebook
- Lesson Guide
- Notebook Answer Key
- Placards A-H
- Spanish INteractive Student Notebook

Lesson 2

Big Idea: Producers are the organisms in ecosystems that make their own food. Almost all plants are producers that use water, air, and energy from sunlight to make their own food. Most plants store excess food in their roots or stems. Water and a gas in the air provide the matter that producers use to make food and grow new parts.

Text: Chamberliss, Marilyn, et al. *Bring Science Alive! Exploring Science Practices*. Rancho Cordova: Teachers' Curriculum Institute, 2015. pp. 16-27

Materials

- Interactive Student Notebook
- Lesson Guide
- Notebook Answer Key
- Spanish Interactive Student Notebook

Links

- Algae as Primary Producers (website): http://www.lakeaccess.org/understanding.html
- Photosynthesis Video: http://studyjams.scholastic.com/studyjams/jams/science/plants/photosynthesis.htm
- The Magic School Bus Gets Planted: https://app.schooltube.com/video/738ec1a06cdb451cbe50/The_Magic_School_Bus_Gets_Planted

Lesson 3

Lesson 3: Animals are consumers, organisms that eat other organisms to get food. Most cannot make their own food. The energy that consumers use in their lives comes from the food they eat. Producers first make food using the energy in sunlight. Then consumers eat those producers or other consumers to get their own energy.

Text: Chamberliss, Marilyn, et al. *Bring Science Alive! Exploring Science Practices*. Rancho Cordova: Teachers' Curriculum Institute, 2015. pp. 28-39.

Materials

- Forceps
- Gloves
- Handout Owl Pellet Bone Chart
- Interactive Student Notebook
- Lesson Guide
- Newspaper
- Notebook Answer Key
- Owl Pellets
- Papertowels
- Spanish Handout Owl Pellet Bone Chart
- Spanish Interactive Student Notebook
- Toothpicks
- Vinyl Apron

Links

- Digestive System (website and video): https://kidshealth.org/en/kids/htbw/
- Dissect a Virtual Owl Pellet (simulation): http://kidwings.com/
- Producers, Consumers, and Decomposers of the Ocean (website): http://marinebiome2.weebly.com/index.html

Additional Reading

The following books offer opportunities to extend the content in this lesson.

Explore Honey Bees!: With 25 Great Projects (Explore Your World) by Cindy Blobaum. Illustrations by Bryan Stone. (White River Junction, VT: Nomad Press, 2015)

Why are honey bees so important for human lives? Learn all about the different foods pollinated by bees and the problems that the current disappearance of bees can create for humans in this exciting book full of hands-on projects.

Animals That Make Me Say Ewww! by Dawn Cusick. (Watertown, MA: Imagine Publishing, 2016)

Not all animals are cute and cuddly like house pets! Learn about the most disgusting animals and the gross things that animals do to survive in this book full of photographs and fun facts about the animal kingdom.

Masters of Disguise: Amazing Animal Tricksters by Rebecca L. Johnson. (Minneapolis, MN: Millbrook Press, 2016)

Animals are trickier than you might think! Learn all about the disguises and survival techniques that animals

in the wild do to survive, and how scientists study different animals in the wild.

Animalium: Welcome to the Museum by Jenny Broom. Illustrations by Katie Scott. (Somerville, MA: Big Picture Press, 2014)

Can't go outside to experience the animal kingdom yourself? No problem! Take a tour of animal life through this "museum" of different animals, arranged in different galleries based on their species and shared qualities.

Lesson 4

Big Ideas: Mushrooms are a common sight in many forests. The mushrooms you see here are the reproductive structures of a fungus that is living inside the dead tree and using it for food. This fungus is one type of decomposer. Decomposers are an important part of ecosystems. By breaking down dead organisms, decomposers recycle matter so it can be used again. This is one important way that the living and nonliving parts of an ecosystem interact.

Text: Chamberliss, Marilyn, et al. *Bring Science Alive! Exploring Science Practices*. Rancho Cordova: Teachers' Curriculum Institute, 2015. pp. 40-51.

Materials

- 100 mL graduated cylinder
- 500 mL bottle with cap
- Ballloon
- Duct tape
- Granulated Sugar
- Interactive Spanish Notebook
- Lesson Guided
- Notebook Answer Key
- Paper Cup
- Paper towels
- plastic spoon
- Spanish Interactive Student Notebook
- Triple Beam Balance
- Water
- White paper

- Yeast

Additional Reading Opportunities

The following books offer opportunities to extend the content in this lesson.

Zombie Makers: True Stories of Nature's Undead by Rebecca L. Johnson. (Minneapolis, MN: Millbrook Press, 2012)

Human zombies might not be real, but some plants, animals, and fungi can turn others into zombie-like creatures, able to move but unable to think for themselves. Learn all about this creepy side of the natural world and see what happens to animals that are neither alive nor dead and decomposing.

The Case of the Vanishing Golden Frogs by Sandra Markle. (Minneapolis, MN: Millbrook Press, 2011)

Decomposers like fungi normally don't start until after animals are dead, but what happens when fungi start working on living animals? Read all about what happened to the Panamanian Golden Frogs, and how scientists tried to save these animals from extinction.

The Compost Heap (Horrible Habitats) by Sharon Katz Cooper. (Chicago, IL: Raintree, 2010)

What lives in your compost heap? Learn all about this gross and smelly habitat and how old food decomposes in this book, part of a series about disgusting habitats.

Lesson 5

Big Ideas: Matter and energy are always moving in an ecosystem. Matter moves in a cycle, while energy moves in one direction and is constantly being lost as heat by organisms. Food chains are models that show feeding relationships between organisms. Food webs are models that show all the different food chains of an ecosystem.

Text: Chamberliss, Marilyn, et al. *Bring Science Alive! Exploring Science Practices*. Rancho Cordova: Teachers' Curriculum Institute, 2015. pp. 52-63.

Materials

- Handout Organisms in a Tropical Rainforest

- Interactive Student Notebook
- Large paper clip
- Lesson guide
- Notebook Answer Key
- Scissors
- Spanish Handout Organisms in a Tropical Rainforest
- Spanish Interactive Student Notebook
- Yarn
- Yellow construction paper

Links

- Bill Nye Episode on Food Webs (video): https://www.gmstigers.com/apps/video/watch.jsp?v=136562
- Compete for Resources and Ecosystem Balance (simulation): https://www.brainpop.com/games/game-finder/?game_keyword=topic:%20Food%20Chains
- The Food Chain Game (simulation): http://www.sheppardsoftware.com/content/animals/kidscorner/gamesforkids.htm
- The Role of Humans in The Global Food Chain (website): https://www.smithsonianmag.com/

Additional Reading Opportunities

The following books offer opportunities to extend the content in this lesson.

Behold the Beautiful Dung Beetle by Cheryl Bardoe. Illustrated by Alan Marks. (Watertown, MA: Charlesbridge Publishing, 2014).

Simple science text and dramatic illustrations give a close-up view of the fascinating world of the dung beetle. Dung is food, drink, and fuel for new life—as crucial to these beetles as the beetles are to many habitats, including our own.

Next Time You See a Maple Seed by Emily Morgan. (Arlington, VA: NSTA Kids, 2014).

It's fun to toss maple seeds up in the air and watch them spin down to the ground like nature's own helicopters. This book prompts inquisitive kids to learn about these marvels of aerial engineering, including their real name (no, not whirlybird), the work they do for maple trees, and how to uncover the little trees waiting to sprout from the seeds.

Lesson 6

Big Ideas: Ecosystems can be healthy or unhealthy. A healthy ecosystem meets the needs of many species of organisms. Because their needs are met, species living in a healthy ecosystem continue surviving there, and the web of life remains stable. Scientists commonly look at predator and prey relationships when they are studying ecosystem health.

Textbook: Chamberliss, Marilyn, et al. *Bring Science Alive! Exploring Science Practices*. Rancho Cordova: Teachers' Curriculum Institute, 2015. pp. 64-73.

Links

- Description of Healthy and Unhealthy Ecosystems (website): http://www2.southeastern.edu/orgs/pbrp/lessons/chapter7/7_5.html
- US National Parks Isle Royale (website): https://www.nps.gov/isro/index.htm

Additional Reading Opportunities

The following books offer opportunities to extend the content in these lessons.

The Great Monkey Rescue: Saving the Golden Lion Tamarins by Sandra Markle. (Minneapolis, MN: Millbrook Press, 2015).

Golden lion tamarins are found only in Brazilian forests. These small, remarkable monkeys once had plenty of space to roam and claim family territories. But years of deforestation caused their numbers to shrink. They were in serious danger of becoming extinct.

Inside Biosphere 2: Earth Science Under Glass (Scientists in the Field Series) by Mary Kay Carson. Photographs by Tom Uhlman. (Boston, MA: HMH Books for Young Readers, 2015).

In the Arizona desert, scientists conduct studies and experiments aimed to help us better understand our environment and what sort of things are happening to it due to climate change. The location is Biosphere 2, an immense structure that contains a replica ocean, savannah, and rainforest, among other Earth biomes.

Lesson 7

Big Ideas: Forest fires are one way that forest ecosystems can change. A forest fire is a very fast change. But ecosystems can also change slowly, as they do from season to season and from year to year. All ecosystems change over time. These ecosystem changes can affect what species are able to live there, and how they interact with each other and their environment.

Text: Chamberliss, Marilyn, et al. *Bring Science Alive! Exploring Science Practices*. Rancho Cordova: Teachers' Curriculum Institute, 2015. pp.74-85.

Materials

- Handout: Examples of Changing Ecosystems
- Interactive Student Notebook
- Lesson Guide
- Notebook Answer Key
- Spanish Handout: Examples of Changing Ecosystems
- Spanish Interactive Student Notebook

Links

- Bill Nye's Climate Change Clip (video): http://www.ecology.com/
- Ecosystem Changes (video): http://studyjams.scholastic.com/studyjams/jams/science/index.htm

Additional Reading

The following books offer opportunities to extend the content in this lesson.

Polar Regions (Research on the Edge) by Louise Spilsbury. (Mankato, MN: Smart Apple Media, 2015)

What is life like in the coldest places on the planet, and how has modern technology changed that? Learn how scientists study these cold regions and how they have changed over the last few decades.

Boreal Forests by Patricia Miller-Schroeder. (New York, NY: Weigl Publishers, 2011)

The Boreal forests are some of the world's most beautiful forests, but they aren't staying the same. Learn about the ecosystem and how modern technology and developments can both help and hurt it in this fascinating book, part of a series on different ecosystems.

Lesson 8

Big Idea: Many human actions change ecosystems. Sometimes the changes can be positive, like setting up a wildlife preserve. Others can be negative, like cutting down all the trees in an entire forest. Sometimes, humans also introduce new species to an ecosystem, which can harm that ecosystem's native inhabitants.

Text: Chamberliss, Marilyn, et al. *Bring Science Alive! Exploring Science Practices*. Rancho Cordova: Teachers' Curriculum Institute, 2015. pp. 86-101.

Materials

- 64 oz Plastic Container
- Bean Seeds
- Coffee Filters
- Cotton Cloth
- Craft Sticks
- Interactive Student Guide
- Lesson Guide
- Notebook Answer Key
- Paper Plates
- Sandwich Size Plastic Bags
- Scissors
- Scotch Tape
- Spanish Interactive Student Notebook
- Sponges
- Toothpick
- Water
- Yarn

Links

- How Recycling Works (videos): http://www.ecology.com/
- Invasive Species Map (website): https://app.oncoursesystems.com/#curriculum-portal

Additional Reading Opportunities

The following books offer opportunities to extend the content in this lesson.

Recycling (Matters of Opinion) by Carla Mooney. (Chicago, IL: Norwood House Press, 2014)

Recycling is a simple but effective way for people to make a difference in the ecosystems around them. Learn all about both the pros and cons of recycling in this book which comes with questions and exercises to keep students thinking about the matter.

Sylvia Earle: Ocean Explorer by Dennis Fertig. (Chicago, IL: Heinemann Library, 2014)

Sylvia Earle is well known both for exploring the oceans and for finding ways to help protect them. Read all about her life and her science in this biography, and check out the other books in this series about women in conservation!

People (Climate Crisis) by Stephen Aitken. (New York, NY: Cavendish Square Publishing, 2012)

How are people making the climate crisis today worse? Learn about what effects human actions can have on ecosystems, and how to make less of an impact in your daily life.

Performance Assessment

Materials

- Lesson Guide
- Performance Assessment
- Performance Assessment Rubric
- Spanish Performance Assessment
- Spanish Performance Assessment Rubric

21st Century Life and Careers

CAEP.9.2.8.B.1	Research careers within the 16 Career Clusters ® and determine attributes of career success.
CAEP.9.2.8.B.2	Develop a Personalized Student Learning Plan with the assistance of an adult mentor that includes information about career areas of interest, goals and an educational plan.
CAEP.9.2.8.B.3	Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career.
CAEP.9.2.8.B.4	Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

CAEP.9.2.8.B.5	Analyze labor market trends using state and federal labor market information and other resources available online.
CAEP.9.2.8.B.6	Demonstrate understanding of the necessary preparation and legal requirements to enter the workforce.
CAEP.9.2.8.B.7	Evaluate the impact of online activities and social media on employer decisions.

Interdisciplinary Connections

MA.5.OA.A.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.
MA.5.OA.B	Analyze patterns and relationships.
LA.RF.5.3.A	Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.
LA.RF.5.4	Read with sufficient accuracy and fluency to support comprehension.
LA.RF.5.4.A	Read grade-level text with purpose and understanding.
LA.RF.5.4.C	Use context to confirm or self-correct word recognition and understanding, rereading as necessary.
LA.W.5.1.A	Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer's purpose.
LA.W.5.1.B	Provide logically ordered reasons that are supported by facts and details from text(s), quote directly from text when appropriate.
LA.W.5.1.D	Provide a conclusion related to the opinion presented.
LA.W.5.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
LA.W.5.2.A	Introduce a topic clearly to provide a focus and group related information logically; include text features such as headings, illustrations, and multimedia when useful to aiding comprehension.
MA.5.MD.B	Represent and interpret data.
LA.W.5.2.B	Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
LA.W.5.2.C	Link ideas within paragraphs and sections of information using words, phrases, and clauses (e.g., in contrast, especially).
LA.W.5.2.D	Use precise language and domain-specific vocabulary to inform about or explain the topic.
LA.W.5.2.E	Provide a conclusion related to the information of explanation presented.
LA.W.5.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
LA.W.5.3.C	Use a variety of transitional words, phrases, and clauses to manage the sequence of events.
LA.W.5.3.E	Provide a conclusion that follows from the narrated experiences or events.
LA.W.5.4	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
LA.W.5.6	With some guidance and support from adults and peers, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others;

	demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.
LA.W.5.7	Conduct short research projects that use several sources to build knowledge through investigation of different perspectives of a topic.
LA.W.5.8	Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.
LA.W.5.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
LA.W.5.9.B	Apply grade 5 Reading standards to informational texts (e.g., "Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point[s]").
LA.SL.5.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
LA.SL.5.1.A	Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
LA.SL.5.1.B	Follow agreed-upon rules for discussions and carry out assigned roles.
LA.SL.5.1.C	Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.
LA.SL.5.1.D	Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.
LA.SL.5.2	Summarize a written text read aloud or information presented in diverse media and formats (e.g., visually, quantitatively, and orally).
LA.SL.5.3	Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.
LA.SL.5.4	Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
LA.SL.5.5	Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.
LA.L.5.2.A	Use punctuation to separate items in a series.
LA.L.5.2.B	Use a comma to separate an introductory element from the rest of the sentence.
LA.L.5.2.E	Spell grade-appropriate words correctly, consulting references as needed.
SCI.3-5-ETS1-3	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.
SCI.3-5-ETS1-2	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.
TECH.8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
TECH.8.1.5.A.2	Format a document using a word processing application to enhance text and include graphics, symbols and/or pictures.
TECH.8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.
TECH.8.1.5.A.4	Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.
TECH.8.1.5.B.CS2	Create original works as a means of personal or group expression.
TECH.8.1.5.D.4	Understand digital citizenship and demonstrate an understanding of the personal

	consequences of inappropriate use of technology and social media.
TECH.8.1.5.D.CS1	Advocate and practice safe, legal, and responsible use of information and technology.
TECH.8.1.5.E.1	Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.