Georgia Science STANDARDS CORRELATION 3

Standards		Weekly Issues
Unit 1: Introduction to Science and Engineering		
These weeks lay the foundation for scientific investigation and engineering design.		Unit 1: Introduction to Science and Engineering Week 1: The Big Ideas of Science Week 2: What Do Scientists Do? Week 3: The Skills of a Scientist Week 4: What Do Engineers Do?
Earth and Space Science **S3E1 Obtain, evaluate, and communicate information about the physical attributes of rocks and soils.**		
S3E1a	Ask questions and analyze data to classify rocks by their physical attributes (color, texture, luster, and hardness) using simple tests. (Clarification statement: Mohs scale should be studied at this level. Cleavage, streak and the classification of rocks as sedimentary, igneous, and metamorphic are studied in sixth grade.)	Unit 2: Classifying Rocks 5: Physical Attributes of Rocks 6: More Physical Attributes of Rocks
S3E1b	Plan and carry out investigations to describe properties (color, texture, capacity to retain water, and ability to support growth of plants) of soils and soil types (sand, clay, loam).	Unit 3: Properties of Soil 7: Soil Properties 8: Types of Soil 9: Georgia's Soil
S3E1c	Make observations of the local environment to construct an explanation of how water and/or wind have made changes to soil and/or rocks over time. (Clarification statement: Examples could include ripples in dirt on a playground and a hole formed under gutters.)	Unit 4: Wind and Water Cause Change 10: Weathering and Erosion 11: More Changes 12: Local Erosion
Earth and Space Science **S3E2 Obtain, evaluate, and communicate information on how fossils provide evidence of past organisms.**		
S3E2a	Construct an argument from observations of fossils (authentic or reproductions) to communicate how they serve as evidence of past organisms and the environments in which they lived.	Unit 5: Fossils 13: Organisms of the Past 14: Environments of the Past 15: How Fossils Are Formed
S3E2b	Develop a model to describe the sequence and conditions required for an organism to become fossilized. (Clarification statement: Types of fossils (cast, mold, trace, and true) are not addressed in this standard.)	

Standards		Weekly Issues
Physical Science **S3P1 Obtain, evaluate, and communicate information about the ways heat energy is transferred and measured.**		
S3P1a	Ask questions to identify sources of heat energy. (Clarification statement: Examples could include sunlight, friction, and burning.)	Unit 6: Heat Energy 16: Heat Sources
S3P1b	Plan and carry out an investigation to gather data using thermometers to produce tables and charts that illustrate the effect of sunlight on various objects. (Clarification statement: The use of both Fahrenheit and Celsius temperature scales is expected.)	Unit 7: Investigating the Effects of Sunlight 17: Temperature and Sunlight 18: Materials and Sunlight
S3P1c	Use tools and every day materials to design and construct a device/structure that will increase/decrease the warming effects of sunlight on various materials. (Clarification statement: Conduction, convection, and radiation are taught in upper grades.)	Unit 8: Engineering Sunlight Solutions 19: Defining the Problem 20: Developing Solutions 21: Optimizing Solutions
Life Science **S3L1 Obtain, evaluate, and communicate information about the similarities and differences between plants, animals, and habitats found within geographic regions (Blue Ridge Mountains, Piedmont, Coastal Plains, Valley and Ridge, and Appalachian Plateau) of Georgia.**		
S3L1a	Ask questions to differentiate between plants, animals, and habitats found within Georgia's geographic regions	Unit 9: Georgia's Habitats 22: What is a Habitat? 23: Georgia's Regions and Habitats 24: More Regions and Habitats
S3L1b	Construct an explanation of how external features and adaptations (camouflage, hibernation, migration, mimicry) of animals allow them to survive in their habitat	Unit 10: Animal Adaptations 25: Behavioral Adaptations 26: Physical Adaptations
S3L1c	Use evidence to construct an explanation of why some organisms can thrive in one habitat and not in another.	Unit 11: Surviving in a Habitat 27: Organisms' Needs for Survival 28: Surviving in Different Habitats
Life Science **S3L2 Obtain, evaluate, and communicate information about the effects of pollution (air, land, and water) and humans on the environment.**		
S3L2a	Ask questions to collect information and create records of sources and effects of pollution on the plants and animals.	Unit 12: Pollution 29: Sources of Pollution 30: Effects of Pollution on Plants and Animals

Standards		Weekly Issues
S3L2b	Explore, research, and communicate solutions, such as conservation of resources and recycling of materials, to protect plants and animals.	Unit 13: Protecting Plants and Animals 31: Reduce 32: Reuse and Recycle

Georgia STANDARDS CORRELATION 4

Standards		Weekly Issues
Unit 1: Introduction to Science and Engineering		
These weeks lay the foundation for scientific investigation and engineering design.		Unit 1: Introduction to Science and Engineering Week 1: The Big Ideas of Science Week 2: What Do Scientists Do? Week 3: The Skills of a Scientist Week 4: What Do Engineers Do?
Earth and Space Science **S4E1 Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.**		
S4E1a	Ask questions to compare and contrast technological advances that have changed the amount and type of information on distant objects in the sky.	Unit 2: The Appearance of Stars 5: Stars in the Sky 6: Observing Stars
S4E1b	Construct an argument on why some stars (including the Earth's sun) appear to be larger or brighter than others. (Clarification statement: Differences are limited to distance and size, not age or stage of evolution.)	
S4E1c	Construct an explanation of the differences between stars and planets.	Unit 3: Investigating Stars and Planets 7: Investigating the Solar System 8: Modeling the Solar System
S4E1d	Evaluate strengths and limitations of models of our solar system in describing relative size, order, appearance and composition of planets and the sun. (Clarification statement: Composition of planets is limited to rocky vs. gaseous.)	
Earth and Space Science **S4E2 Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from the Earth.**		
S4E2a	Develop a model to support an explanation of why the length of day and night change throughout the year.	Unit 4: Day, Night, and Seasons 9: Day and Night 10: Seasons
S4E2b	Develop a model based on observations to describe the repeating pattern of the phases of the moon (new, crescent, quarter, gibbous, and full).	Unit 5: The Moon 11: Moon Phases
S4E2c	Construct an explanation of how the Earth's orbit, with its consistent tilt, affects seasonal changes.	Unit 4: Day, Night, and Seasons 9: Day and Night 10: Seasons

Standards		Weekly Issues
Earth and Space Science **S4E3 Obtain, evaluate, and communicate information to demonstrate the water cycle.**		
S4E3a	Plan and carry out investigations to observe the flow of energy in water as it changes states from solid (ice) to liquid (water) to gas (water vapor) and changes from gas to liquid to solid.	Unit 6: The Movement of Water on Earth 12: Changing States of Water 13: The Water Cycle
S4E3b	Develop models to illustrate multiple pathways water may take during the water cycle (evaporation, condensation, and precipitation). (Clarification statement: Students should understand that the water cycle does not follow a single pathway.)	
Earth and Space Science **S4E4 Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data.**		
S4E4a	Construct an explanation of how weather instruments (thermometer, rain gauge, barometer, wind vane, and anemometer) are used in gathering weather data and making forecasts.	Unit 7: Measuring Weather 14: Weather Tools 15: Weather Maps 16: Clouds
S4E4b	Interpret data from weather maps, including fronts (warm, cold, and stationary), temperature, pressure, and precipitation to make an informed prediction about tomorrow's weather.	
S4E4c	Ask questions and use observations of cloud types (cirrus, stratus, and cumulus) and data of weather conditions to predict weather events.	
S4E4d	Construct an explanation based on research to communicate the difference between weather and climate.	Unit 8: Weather and Climate 17: Weather and Climate Differences
Physical Science **S4P1 Obtain, evaluate, and communicate information about the nature of light and how light interacts with objects.**		
S4P1a	Plan and carry out investigations to observe and record how light interacts with various materials to classify them as opaque, transparent, or translucent.	Unit 9: Investigating Light 18: Properties of Light 19: More Properties of Light 20: Refraction
S4P1b	Plan and carry out investigations to describe the path light travels from a light source to a mirror and how it is reflected by the mirror using different angles.	

Standards		Weekly Issues
S4P1c	Plan and carry out an investigation utilizing everyday materials to explore examples of when light is refracted. (Clarification statement: Everyday materials could include prisms, eyeglasses, and a glass of water.)	
Physical Science **S4P2 Obtain, evaluate, and communicate information about how sound is produced and changed and how sound and/or light can be used to communicate.**		
S4P2a	Plan and carry out an investigation utilizing everyday objects to produce sound and predict the effects of changing the strength or speed of vibrations.	Unit 10: Investigating Sound 21: What is Sound? 22: Vibration
S4P2b	Design and construct a device to communicate across a distance using light and/or sound.	Unit 11: Communicating with Sound and Light 23: Define and Develop Sound Solutions 24: Optimize Sound Solutions
Physical Science **S4P3 Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.**		
S4P3a	Plan and carry out an investigation on the effects of balanced and unbalanced forces on an object and communicate the results.	Unit 12: Balanced and Unbalanced Forces 25: Balanced Forces 26: Unbalanced Forces
S4P3b	Construct an argument to support the claim that gravitational force affects the motion of an object.	
S4P3c	Ask questions to identify and explain the uses of simple machines (lever, pulley, wedge, inclined plane, wheel and axle, and screw) and how forces are changed when simple machines are used to complete tasks. (Clarification statement: The use of mathematical formulas is not expected.)	Unit 13: Simple Machines 27: Investigating Simple Machines
Life Science **S4L1 Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.**		
S4L1a	Develop a model to describe the roles of producers, consumers, and decomposers in a community. (Clarification statement: Students are not expected to identify the different types of consumers – herbivores, carnivores, omnivores and scavengers.)	Unit 14: The Flow of Energy 28: Producers, Consumers, and Decomposers 29: Food Chains 30: Food Webs

Standards		Weekly Issues
S4L1b	Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.	Unit 14: The Flow of Energy 28: Producers, Consumers, and Decomposers 29: Food Chains 30: Food Webs
S4L1c	Design a scenario to demonstrate the effect of a change on an ecosystem. (Clarification statement: Include living and non-living factors in the scenario.)	Unit 15: Changes in Ecosystems 31: Disruptions in Energy Flow 32: Improving Ecosystems
S4L1d	Use printed and digital data to develop a model illustrating and describing changes to the flow of energy in an ecosystem when plants or animals become scarce, extinct or overabundant.	

Standards		Weekly Issues
Unit 1: Introduction to Science and Engineering		
These weeks lay the foundation for scientific investigation and engineering design.		Unit 1: Introduction to Science and Engineering Week 1: The Big Ideas of Science Week 2: What Do Scientists Do? Week 3: The Skills of a Scientist Week 4: What Do Engineers Do?
Earth and Space Science **S5E1 Obtain, evaluate, and communicate information to identify surface features on the Earth caused by constructive and/or destructive processes.**		
S5E1a	Construct an argument supported by scientific evidence to identify surface features (examples could include deltas, sand dunes, mountains, volcanoes) as being caused by constructive and/or destructive processes (examples could include deposition, weathering, erosion, and impact of organisms).	Unit 2: Earth's Surface Features and Processes 5: Weathering 6: Erosion and Deposition 7: More Changes to Earth's Surface
S5E1b	Develop simple interactive models to collect data that illustrate how changes in surface features are/were caused by constructive and/or destructive processes.	
S5E1c	Ask questions to obtain information on how technology is used to limit and/or predict the impact of constructive and destructive processes. (Clarification statement: Examples could include seismological studies, flood forecasting (GIS maps), engineering/construction methods and materials, and infrared/satellite imagery.)	Unit 3: Engineering Earthquake Solutions 8: Define and Research Earthquake Solutions 9: Develop Earthquake Solutions 10: Optimize Earthquake Solutions
Physical Science **S5P1 Obtain, evaluate, and communicate information to explain the differences between a physical change and a chemical change.**		
S5P1a	Plan and carry out investigations of physical changes by manipulating, separating and mixing dry and liquid materials.	Unit 4: Physical and Chemical Changes 11: Physical Changes in Matter 12: Investigating Physical and Chemical Changes 13: Investigating More Physical and Chemical Changes

Standards		Weekly Issues
S5P1b	Construct an argument based on observations to support a claim that the physical changes in the state of water are due to temperature changes, which cause small particles that cannot be seen to move differently.	Unit 4: Physical and Chemical Changes 11: Physical Changes in Matter 12: Investigating Physical and Chemical Changes 13: Investigating More Physical and Chemical Changes
S5P1c	Plan and carry out an investigation to determine if a chemical change occurred based on observable evidence (color, gas, temperature change, odor, new substance produced).	
Physical Science **S5P2 Obtain, evaluate, and communicate information to investigate electricity.**		
S5P2a	Obtain and combine information from multiple sources to explain the difference between naturally occurring electricity (static) and human–harnessed electricity.	Unit 5: Electricity 14: Static Electricity 15: Current Electricity 16: Circuits
S5P2b	Design a complete, simple electric circuit, and explain all necessary components	
S5P2c	Plan and carry out investigations on common materials to determine if they are insulators or conductors of electricity.	Unit 6: Electrical Conductors and Insulators 17: Investigating Conductors and Insulators 18: Analyzing Conductors and Insulators
Physical Science **S5P3 Obtain, evaluate, and communicate information about magnetism and its relationship to electricity.**		
S5P3a	Construct an argument based on experimental evidence to communicate the differences in function and purpose of an electromagnet and a magnet. (Clarification statement: Function is limited to understanding temporary and permanent magnetism.)	Unit 7: Engineering Magnetic Solutions 19: Define and Develop Magnetic Solutions 20: Develop and Optimize Magnetic Solutions
S5P3b	Plan and carry out an investigation to observe the interaction between a magnetic field and a magnetic object. (Clarification statement: The interaction should include placing materials of various types (wood, paper, glass, metal, and rocks) and thickness between the magnet and the magnetic object.)	

Standards		Weekly Issues
Life Science **S5L1 Obtain, evaluate, and communicate information to group organisms using scientific classification procedures.**		
S5L1a	Develop a model that illustrates how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal) using data from multiple sources.	Unit 8: Classifying Animals 21: Vertebrates and Invertebrates 22: Classifying and Modeling Animal Groups
S5L1b	Develop a model that illustrates how plants are sorted into groups (seed producers, non–seed producers) using data from multiple sources.	Unit 9: Classifying Plants 23: Seed and Non-seed Producers
Life Science **S5L2 Obtain, evaluate, and communicate information showing that some characteristics of organisms are inherited and other characteristics are acquired.**		
S5L2a	Ask questions to compare and contrast instincts and learned behaviors.	Unit 10: Instincts and Learned Behaviors 24: Investigating Instincts and Learned Behaviors 25: Analyzing Instincts and Learned Behaviors
S5L2b	Ask questions to compare and contrast inherited and acquired physical traits. (Clarification statement: Punnett squares and genetics are taught in future grades.)	Unit 11: Inherited and Acquired Traits 26: Understanding Inherited and Acquired Traits 27: Comparing Inherited and Acquired Traits
Life Science **S5L3 Obtain, evaluate, and communicate information to compare and contrast the parts of plant and animal cells.**		
S5L3a	Gather evidence by utilizing technology tools to support a claim that plants and animals are comprised of cells too small to be seen without magnification.	Unit 12: Plant and Animal Cells 28: The Tiniest Parts of Plants and Animals 29: Cell Structure 30: More About Cells
S5L3b	Develop a model to identify and label parts of a plant cell (membrane, wall, cytoplasm, nucleus, chloroplasts) and of an animal cell (membrane, cytoplasm, and nucleus).	
S5L3c	Construct an explanation that differentiates between the structure of plant and animal cells.	

Standards		Weekly Issues
Life Science **S5L4 Obtain, evaluate, and communicate information about how microorganisms benefit or harm larger organisms.**		
S5L4a	Construct an argument using scientific evidence to support a claim that some microorganisms are beneficial. (Clarification statement: Possible microorganisms could include Tardigrades, Lactobacillus, Probiotics, Rotifers, Salmonella, Clostridium botulinum (Botox), E–coli, Algae, etc. Students are not expected to know these specific microorganisms. The list is provided to give teachers examples.)	Unit 13: Microorganisms 31: What Are Microorganisms? 32: Helpful and Harmful Microorganisms
S5L4b	Construct an argument using scientific evidence to support a claim that some microorganisms are harmful. (Clarification statement: Possible microorganisms could include Tardigrades, Lactobacillus, Probiotics, Rotifers, Salmonella, Clostridium botulinum (Botox), E–coli, Algae, etc. Students are not expected to know these specific microorganisms. The list is provided to give teachers examples.)	

Georgia Science SCOPE & SEQUENCE 3

Week	Title	Standards Covered
Unit 1: Introduction to Science and Engineering		
1	The Big Ideas of Science	Describe the crosscutting concepts of science and discuss what role they play in the work of scientists and engineers.
2	What Do Scientists Do?	Describe the skills of scientists (the science and engineering practices) and their importance.
3	The Skills of a Scientist	Describe the skills of scientists (the science and engineering practices) and their importance.
4	What Do Engineers Do?	Describe the steps in the Engineering Design Process used to develop solutions to real-world problems.
Unit 2: Classifying Rocks		
5	Physical Attributes of Rocks	**S3E1a** Ask questions and analyze data to classify rocks by their physical attributes (color, texture, luster, and hardness) using simple tests. (Clarification statement: Mohs scale should be studied at this level. Cleavage, streak and the classification of rocks as sedimentary, igneous, and metamorphic are studied in sixth grade.)
6	More Physical Attributes of Rocks	
Unit 3: Properties of Soil		
7	Soil Properties	**S3E1b** Plan and carry out investigations to describe properties (color, texture, capacity to retain water, and ability to support growth of plants) of soils and soil types (sand, clay, loam).
8	Types of Soil	
9	Georgia's Soil	
Unit 4: Wind and Water Cause Change		
10	Weathering and Erosion	**S3E1c** Make observations of the local environment to construct an explanation of how water and/or wind have made changes to soil and/or rocks over time. (Clarification statement: Examples could include ripples in dirt on a playground and a hole formed under gutters.)
11	More Changes	
12	Local Erosion	

Week	Title	Standards Covered
Unit 5: Fossils		
13	Organisms of the Past	**S3E2a** Construct an argument from observations of fossils (authentic or reproductions) to communicate how they serve as evidence of past organisms and the environments in which they lived. **S3E2b** Develop a model to describe the sequence and conditions required for an organism to become fossilized. (Clarification statement: Types of fossils (cast, mold, trace, and true) are not addressed in this standard.)
14	Environments of the Past	
15	How Fossils Are Formed	
Unit 6: Heat Energy		
16	Heat Sources	**S3P1a** Ask questions to identify sources of heat energy. (Clarification statement: Examples could include sunlight, friction, and burning.)
Unit 7: Investigating the Effects of Sunlight		
17	Temperature and Sunlight	**S3P1b** Plan and carry out an investigation to gather data using thermometers to produce tables and charts that illustrate the effect of sunlight on various objects. (Clarification statement: The use of both Fahrenheit and Celsius temperature scales is expected.)
18	Materials and Sunlight	
Unit 8: Engineering Sunlight Solutions		
19	Defining the Problem	**S3P1c** Use tools and every day materials to design and construct a device/structure that will increase/decrease the warming effects of sunlight on various materials. (Clarification statement: Conduction, convection, and radiation are taught in upper grades.)
20	Developing Solutions	
21	Optimizing Solutions	
Unit 9: Georgia's Habitats		
22	What is a Habitat?	**S3L1a** Ask questions to differentiate between plants, animals, and habitats found within Georgia's geographic regions.
23	Georgia's Regions and Habitats	
24	More Regions and Habitats	
Unit 10: Animal Adaptations		
25	Behavioral Adaptations	**S3L1b** Construct an explanation of how external features and adaptations (camouflage, hibernation, migration, mimicry) of animals allow them to survive in their habitat.
26	Physical Adaptations	

Week	Title	Standards Covered
Unit 11: Surviving in a Habitat		
27	Organisms' Needs for Survival	**S3L1c** Use evidence to construct an explanation of why some organisms can thrive in one habitat and not in another.
28	Surviving in Different Habitats	
Unit 12: Pollution		
29	Sources of Pollution	**S3L2a** Ask questions to collect information and create records of sources and effects of pollution on the plants and animals.
30	Effects of Pollution on Plants and Animals	
Unit 13: Protecting Plants and Animals		
31	Reduce	**S3L2b** Explore, research, and communicate solutions, such as conservation of resources and recycling of materials, to protect plants and animals.
32	Reuse and Recycle	

Georgia Science
SCOPE & SEQUENCE
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Week	Title	Standards Covered
Unit 1: Introduction to Science and Engineering		
1	The Big Ideas of Science	Describe the crosscutting concepts of science and discuss what role they play in the work of scientists and engineers.
2	What Do Scientists Do?	Describe the skills of scientists (the science and engineering practices) and their importance.
3	The Skills of a Scientist	Describe the skills of scientists (the science and engineering practices) and their importance.
4	What Do Engineers Do?	Describe the steps in the Engineering Design Process used to develop solutions to real-world problems.
Unit 2: The Appearance of Stars		
5	Stars in the Sky	**S4E1a** Ask questions to compare and contrast technological advances that have changed the amount and type of information on distant objects in the sky. **S4E1b** Construct an argument on why some stars (including the Earth's sun) appear to be larger or brighter than others. (Clarification statement: Differences are limited to distance and size, not age or stage of evolution.)
6	Observing Stars	
Unit 3: Investigating Stars and Planets		
7	Investigating the Solar System	**S4E1c** Construct an explanation of the differences between stars and planets. **S4E1d** Evaluate strengths and limitations of models of our solar system in describing relative size, order, appearance and composition of planets and the sun. (Clarification statement: Composition of planets is limited to rocky vs. gaseous.)
8	Modeling the Solar System	
Unit 4: Day, Night, and Seasons		
9	Day and Night	**S4E2a** Develop a model to support an explanation of why the length of day and night change throughout the year.
10	Seasons	**S4E2c** Construct an explanation of how the Earth's orbit, with its consistent tilt, affects seasonal changes.
Unit 5: The Moon		
11	Moon Phases	**S4E2b** Develop a model based on observations to describe the repeating pattern of the phases of the moon (new, crescent, quarter, gibbous, and full).

Week	Title	Standards Covered
Unit 6: The Movement of Water on Earth		
12	Changing States of Water	**S4E3a** Plan and carry out investigations to observe the flow of energy in water as it changes states from solid (ice) to liquid (water) to gas (water vapor) and changes from gas to liquid to solid. **S4E3b** Develop models to illustrate multiple pathways water may take during the water cycle (evaporation, condensation, and precipitation). (Clarification statement: Students should understand that the water cycle does not follow a single pathway.)
13	The Water Cycle	
Unit 7: Measuring Weather		
14	Weather Tools	**S4E4a** Construct an explanation of how weather instruments (thermometer, rain gauge, barometer, wind vane, and anemometer) are used in gathering weather data and making forecasts. **S4E4b** Interpret data from weather maps, including fronts (warm, cold, and stationary), temperature, pressure, and precipitation to make an informed prediction about tomorrow's weather. **S4E4c** Ask questions and use observations of cloud types (cirrus, stratus, and cumulus) and data of weather conditions to predict weather events.
15	Weather Maps	
16	Clouds	
Unit 8: Weather and Climate		
17	Weather and Climate Differences	**S4E4d** Construct an explanation based on research to communicate the difference between weather and climate.
Unit 9: Investigating Light		
18	Properties of Light	**S4P1a** Plan and carry out investigations to observe and record how light interacts with various materials to classify them as opaque, transparent, or translucent. **S4P1b** Plan and carry out investigations to describe the path light travels from a light source to a mirror and how it is reflected by the mirror using different angles. **S4P1c** Plan and carry out an investigation utilizing everyday materials to explore examples of when light is refracted. (Clarification statement: Everyday materials could include prisms, eyeglasses, and a glass of water.)
19	More Properties of Light	
20	Refraction	
Unit 10: Investigating Sound		
21	What is Sound?	**S4P2a** Plan and carry out an investigation utilizing everyday objects to produce sound and predict the effects of changing the strength or speed of vibrations.
22	Vibration	

Week	Title	Standards Covered
Unit 11: Communicating with Sound and Light		
23	Define and Develop Sound Solutions	**S4P2b** Design and construct a device to communicate across a distance using light and/or sound.
24	Optimize Sound Solutions	
Unit 12: Balanced and Unbalanced Forces		
25	Balanced Forces	**S4L1a** Develop a model to describe the roles of producers, consumers, and decomposers in a community. (Clarification statement: Students are not expected to identify the different types of consumers – herbivores, carnivores, omnivores and scavengers.) **S4L1b** Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.
26	Unbalanced Forces	
Unit 13: Simple Machines		
27	Investigating Simple Machines	**S4P3c** Ask questions to identify and explain the uses of simple machines (lever, pulley, wedge, inclined plane, wheel and axle, and screw) and how forces are changed when simple machines are used to complete tasks. (Clarification statement: The use of mathematical formulas is not expected.)
Unit 14: The Flow of Energy		
28	Producers, Consumers, and Decomposers	**S4L1a** Develop a model to describe the roles of producers, consumers, and decomposers in a community. (Clarification statement: Students are not expected to identify the different types of consumers – herbivores, carnivores, omnivores and scavengers.) **S4L1b** Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.
29	Food Chains	
30	Food Webs	
Unit 15: Changes in Ecosystems		
31	Disruptions in Energy Flow	**S4L1c** Design a scenario to demonstrate the effect of a change on an ecosystem. (Clarification statement: Include living and non-living factors in the scenario.) **S4L1d** Use printed and digital data to develop a model illustrating and describing changes to the flow of energy in an ecosystem when plants or animals become scarce, extinct or overabundant.
32	Improving Ecosystems	

Studies Weekly Science
SCOPE & SEQUENCE
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Week	Title	Standards Covered
Unit 1: Introduction to Science and Engineering		
1	The Big Ideas of Science	Describe the crosscutting concepts of science and discuss what role they play in the work of scientists and engineers.
2	What Do Scientists Do?	Describe the skills of scientists (the science and engineering practices) and their importance.
3	The Skills of a Scientist	Describe the skills of scientists (the science and engineering practices) and their importance.
4	What Do Engineers Do?	Describe the steps in the Engineering Design Process used to develop solutions to real-world problems.
Unit 2: Earth's Surface Features and Processes		
5	Weathering	**S5E1a** Construct an argument supported by scientific evidence to identify surface features (examples could include deltas, sand dunes, mountains, volcanoes) as being caused by constructive and/or destructive processes (examples could include deposition, weathering, erosion, and impact of organisms). **S5E1b** Develop simple interactive models to collect data that illustrate how changes in surface features are/were caused by constructive and/or destructive processes.
6	Erosion and Deposition	
7	Weathering	
Unit 3: Engineering Earthquake Solutions		
8	Define and Research Earthquake Solutions	**S5E1c** Ask questions to obtain information on how technology is used to limit and/or predict the impact of constructive and destructive processes. (Clarification statement: Examples could include seismological studies, flood forecasting (GIS maps), engineering/construction methods and materials, and infrared/satellite imagery.)
9	Develop Earthquake Solutions	
10	Optimize Earthquake Solutions	
Unit 4: Physical and Chemical Changes		
11	Physical Changes in Matter	**S5P1a** Plan and carry out investigations of physical changes by manipulating, separating and mixing dry and liquid materials. **S5P1b** Construct an argument based on observations to support a claim that the physical changes in the state of water are due to temperature changes, which cause small particles that cannot be seen to move differently. **S5P1c** Plan and carry out an investigation to determine if a chemical change occurred based on observable evidence (color, gas, temperature change, odor, new substance produced).
12	Investigating Physical and Chemical Changes	
13	Investigating More Physical and Chemical Changes	

Studies Weekly Science
SCOPE & SEQUENCE
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Week	Title	Standards Covered
Unit 5: Electricity		
14	Static Electricity	**S5P2a** Obtain and combine information from multiple sources to explain the difference between naturally occurring electricity (static) and human–harnessed electricity. **S5P2b** Design a complete, simple electric circuit, and explain all necessary components
15	Current Electricity	
16	Circuits	
Unit 6: Electrical Conductors and Insulators		
17	Investigating Conductors and Insulators	**S5P2c** Plan and carry out investigations on common materials to determine if they are insulators or conductors of electricity.
18	Analyzing Conductors and Insulators	
Unit 7: Engineering Magnetic Solutions		
19	Define and Develop Magnetic Solutions	**S5P3a** Construct an argument based on experimental evidence to communicate the differences in function and purpose of an electromagnet and a magnet. (Clarification statement: Function is limited to understanding temporary and permanent magnetism.) **S5P3b** Plan and carry out an investigation to observe the interaction between a magnetic field and a magnetic object. (Clarification statement: The interaction should include placing materials of various types (wood, paper, glass, metal, and rocks) and thickness between the magnet and the magnetic object.)
20	Develop and Optimize Magnetic Solutions	
Unit 8: Classifying Animals		
21	Vertebrates and Invertebrates	**S5L1a** Develop a model that illustrates how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal) using data from multiple sources.
22	Classifying and Modeling Animal Groups	
Unit 9: Classifying Plants		
23	Seed and Non-seed Producers	**S5L1b** Develop a model that illustrates how plants are sorted into groups (seed producers, non–seed producers) using data from multiple sources.

Week	Title	Standards Covered
Unit 10: Instincts and Learned Behaviors		
24	Investigating Instincts and Learned Behaviors	**S5L2a** Ask questions to compare and contrast instincts and learned behaviors.
25	Analyzing Instincts and Learned Behaviors	
Unit 11: Inherited and Acquired Traits		
26	Understanding Inherited and Acquired Traits	**S5L2b** Ask questions to compare and contrast inherited and acquired physical traits. (Clarification statement: Punnett squares and genetics are taught in future grades.)
27	Comparing Inherited and Acquired Traits	
Unit 12: Plant and Animal Cells		
28	The Tiniest Parts of Plants and Animals	**S5L3a** Gather evidence by utilizing technology tools to support a claim that plants and animals are comprised of cells too small to be seen without magnification.
29	Cell Structure	**S5L3b** Develop a model to identify and label parts of a plant cell (membrane, wall, cytoplasm, nucleus, chloroplasts) and of an animal cell (membrane, cytoplasm, and nucleus).
30	More About Cells	**S5L3c** Construct an explanation that differentiates between the structure of plant and animal cells.
Unit 13: Microorganisms		
31	What Are Microorganisms?	**S5L4a** Construct an argument using scientific evidence to support a claim that some microorganisms are beneficial. (Clarification statement: Possible microorganisms could include Tardigrades, Lactobacillus, Probiotics, Rotifers, Salmonella, Clostridium botulinum (Botox), E–coli, Algae, etc. Students are not expected to know these specific microorganisms. The list is provided to give teachers examples.)
32	Helpful and Harmful Microorganisms	**S5L4b** Construct an argument using scientific evidence to support a claim that some microorganisms are harmful. (Clarification statement: Possible microorganisms could include Tardigrades, Lactobacillus, Probiotics, Rotifers, Salmonella, Clostridium botulinum (Botox), E–coli, Algae, etc. Students are not expected to know these specific microorganisms. The list is provided to give teachers examples.)