

Week	Title	Standards Covered
<b>Introduction to Science and Engineering</b>		
Unit 1: 1	You Can Be A Scientist! You Can Be An Engineer!	Science and Engineering: Describe what science and engineering are and how they can be a scientist and engineer by safely using tools, observing with their senses, adopting positive mindsets, and working together in a group.
Unit 1: 2	What Do Scientists and Engineers Do?	Science and Engineering: Identify science and engineering practices and how scientists and engineers use them.
Unit 1: 3	Engineering Design Process	Engineering and Design: Identify and describe the engineering design process through the exploration of creating and testing designs for a lunchbox.
Unit 1: 4	Patterns	Crosscutting Concepts: Identify and describe patterns found in nature and the human-designed world.
Unit 1: 5	Cause and Effect	Crosscutting Concepts: Recognize the cause and effect of different events and support their ideas with evidence from simple tests.
Unit 1: 6	Systems and System Models	Crosscutting Concepts: Identify and describe system components in both designed and natural systems.
Unit 1: 7	Structure and Function	Crosscutting Concepts: Identify an object's structure and function.
Unit 1: 8	I Can Ask Questions!	Science and Engineering: Develop questions based on observations they have made to drive understanding of a phenomenon.
<b>K. Forces and Interactions: Pushes and Pulls</b>		
Unit 2: 9 - 10	Force and Motion	<b>K-PS2-1</b> 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.
Unit 3: 11 - 12	Engineering Design: Golf Course Engineers	<b>K-PS2-2</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 a pull. <b>K-2-ETS1-3</b> Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
<b>K. Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment</b>		
Unit 4: 13 - 14	Plant and Animal Survival	<b>K-LS1-1</b> Use observations to describe patterns of what plants and animals (including humans) need to survive.
Unit 5: 15 - 16	Environmental Change	<b>K-ESS2-2</b> Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
Unit 6: 17 - 18	System Models	<b>K-ESS3-1</b> Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

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Unit 7: 19 - 20	Engineer Environmental Solutions	<b>K-ESS3-3</b> Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.
<b>K. Weather and Climate</b>		
Unit 8: 21 - 22	Observing Sunlight	<b>K-PS3-1</b> Make observations to determine the effect of sunlight on Earth's surface.
Unit 9: 23 - 24	Engineering Design: Energy Engineers	<b>K-PS3-2</b> Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. <b>K-2-ETS1-1</b> 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.
Unit 10: 25 - 26	Weather Patterns	<b>K-ESS2-1</b> Use and share observations of local weather conditions to describe patterns over time.
Unit 11: 27 - 28	Prepare for Severe Weather	<b>K-ESS3-2</b> Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. <b>K-2-ETS1-1</b> 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.

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Unit 1: 5	Patterns	Identify and describe patterns found in nature and the human-designed world.
Unit 1: 6	Cause and Effect	Recognize the cause and effect of different events and support their ideas with evidence from simple tests.
Unit 1: 7	Structure and Function	Identify an object's structure and function.
Unit 1: 8 - 9	I Can Ask Questions	Develop questions based on observations they have made to drive understanding of a phenomenon.
<b>1. Waves: Light and Sound</b>		
Unit 2: 10 - 12	Sound Investigation	<b>1-PS4-1</b> Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
Unit 3: 13 - 14	Observing Light	<b>1-PS4-2</b> Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.
Unit 4: 15 - 17	Light Investigation	<b>1-PS4-3</b> Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light.
Unit 5: 18 - 21	Engineering Design: Light and Sound	<p><b>1-PS4-4</b> Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.</p> <p><b>K-2-ETS1-1</b> 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.</p> <p><b>K-2-ETS1-3</b> Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p>

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<b>1. Structure, Function, and Information Processing</b>		
Unit 6: 22 - 24	Engineering Design: Mimicking Animal Parts	<b>1-LS1-1</b> 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.  <b>K-2-ETS1-2</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.
Unit 7: 25 - 26	Parents and Offspring	<b>1-LS1-2</b> Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.
Unit 8: 27 - 28	Plants and Animals	<b>1-LS3-1</b> Make observations to construct an evidence based account that young plants and animals are like, but not exactly like, their parents.
<b>1. Space Systems: Patterns and Cycles</b>		
Unit 9: 29 - 30	Patterns in the Sky	<b>1-ESS1-1</b> Use observations of the sun, moon, and stars to describe patterns that can be predicted.
Unit 10: 31 - 32	Observing Daylight	<b>1-ESS1-2</b> Make observations at different times of year to relate the amount of daylight to the time of year.

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Unit 1: 5	Crosscutting Concepts	Understand how cross-cutting concepts can be used to observe or explain phenomena.
Unit 1: 6	Measurement, Data, and Graphing	Use data to determine if an object works correctly.
<b>2. Structure and Properties of Matter</b>		
Unit 2: 7-8	Properties of Matter	<b>2-PS1-1</b> Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
Unit 3: 9-10	Engineering Design: Trash to Treasure	<b>2-PS1-2</b> Analyze data obtained from testing different materials to determine which materials are best suited for an intended purpose. <b>K-2-ETS1-1</b> 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.
Unit 4: 11-12	Home "Tweet" Home	<b>2-PS1-3</b> 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 project.
Unit 5: 13-14	Heating and Cooling	<b>2-PS1-4</b> Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
<b>2. Interdependent Relationships in Ecosystems</b>		
Unit 6: 15-16	What Plants Need to Grow	<b>2-LS2-1</b> Plan and conduct an investigation to determine if plants need sunlight and water to grow.
Unit 7: 17-18	Engineering Design: Sunflower Surprise	<b>2-LS2-2</b> Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. <b>K-2-ETS1-2</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.

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Unit 8: 19 - 20	A Day at the Zoo	<b>2-LS4-1</b> Make observations of plants and animals to compare the diversity of life in different habitats.
<b>2. Earth's Systems: Processes that Shape the Earth</b>		
Unit 9: 21 - 22	Rapid Change, Slow Change	<b>2-ESS1-1</b> Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
Unit 10: 23 - 24	Engineering Design: Washed Away	<b>2-ESS2-1</b> Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.  <b>K-2-ETS1-3</b> Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
Unit 11: 25 - 26	Maps and Models	<b>2-ESS2-2</b> Develop a model to represent the shapes and kinds of land and bodies of water in an area.
Unit 12: 27 - 28	Liquid Water, Solid Water	<b>2-ESS2-3</b> Obtain information to identify where water is found on Earth and that it can be solid or liquid.

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Unit 1: 4	Engineering Design Process	Identify and describe the engineering design process through the exploration of creating and testing designs for a backpack.
Unit 1: 5	Crosscutting Concepts	Understand how cross-cutting concepts can be used to observe or explain phenomena.
Unit 1: 6	Measurement, Data, and Graphing	Analyze and interpret data using measurement and graphing skills.
<b>3. Forces and Interactions</b>		
Unit 2: 7 - 8	Investigating Forces	<b>3-PS2-1</b> Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.
Unit 3: 9 - 10	Patterns in Movement	<b>3-PS2-2</b> Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.
Unit 4: 11 - 12	Invisible Forces	<b>3-PS2-3</b> Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.
Unit 5: 13 - 14	Engineering Design: Magnets Save the Day	<b>3-PS2-4</b> Define a simple design problem that can be solved by applying scientific ideas about magnets. <b>3-5-ETS1-1</b> Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
<b>3. Interdependent Relationships in Ecosystems</b>		
Unit 6: 15 - 16	Surviving as a Group	<b>3-LS2-1</b> Construct an argument that some animals form groups that help members survive.
Unit 7: 17 - 18	Fossils Provide Clues to the Past	<b>3-LS4-1</b> Analyze and Interpret data from fossils to provide evidence of the organisms and the environment in which they lived long ago.
Unit 8: 19 - 20	Ocean Water Survival	<b>3-LS4-3</b> 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.

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Unit 9: 21 - 22	Engineering Design: Save the Wildlife!	<b>3-LS4-4</b> 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.  <b>3-5-ETS1-2</b> 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.
<b>3. Inheritance and Variation of Traits: Life Cycles and Traits</b>		
Unit 10: 23 - 24	Patterns in Life Cycles	<b>3-LS1-1</b> Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
Unit 11: 25 - 26	Trait Inheritance	<b>3-LS3-1</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.
Unit 12: 27 - 28	Traits and the Environment	<b>3-LS3-2</b> Use evidence to support the explanation that traits can be influenced by the environment.
Unit 13: 29 - 30	Trait Adaptation	<b>3-LS4-2</b> Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.
<b>3. Weather and Climate</b>		
Unit 14: 31 - 32	Patterns of Weather	<b>3-ESS2-1</b> Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
Unit 15: 33 - 34	Weather and Climate	<b>3-ESS2-2</b> Obtain and combine information to describe climates in different regions of the world.
Unit 16: 35 - 36	Engineering Design: Weather Hazards	<b>3-ESS3-1</b> Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.  <b>3-5-ETS1-2</b> 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.



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Unit 1: 6	Measurement, Data, and Graphing	Analyze and interpret data to make sense of phenomena using logical reasoning, mathematics, and/or computation
<b>4. Energy</b>		
Unit 2: 7 - 8	Golf Balls and Energy	<b>4-PS3-1</b> Use evidence to construct an explanation relating the speed of an object to the energy of that object.
Unit 3: 9 - 10	Miguel's Energy Case Files	<b>4-PS3-2</b> Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.
Unit 4: 11 - 12	Collisions	<b>4-PS3-3</b> Ask questions and predict outcomes about the changes in energy that occur when objects collide.
Unit 5: 13 - 14	Engineering Design: Cooking S'mores	<b>4-PS3-4</b> Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. <b>3-5-ETS1-1</b> Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
Unit 6: 15 - 16	Energy and Fuels	<b>4-ESS3-1</b> Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.
<b>4. Waves: Waves and Information</b>		
Unit 7: 17 - 18	Message in a Bottle	<b>4-PS4-1</b> Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.

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Unit 8: 19 - 20	Engineering Design: Decoding the Message in the Bottle	<b>4-PS4-3</b> Generate and compare multiple solutions that use patterns to transfer information. <b>3-5-ETS1-3</b> 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.
Unit 9: 21 - 22	Light and Sight	<b>4-PS4-2</b> Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.
<b>4. Structure, Function, and Information Processing</b>		
Unit 10: 23 - 24	Structures and Senses	<b>4-LS1-1</b> Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. <b>4-LS1-2</b> 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 in different ways.
<b>4. Earth's Systems: Processes that Shape the Earth</b>		
Unit 11: 25 - 26	The Story of a Changing Landscape	<b>4-ESS1-1</b> Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.
Unit 12: 27 - 28	Shaping the Earth	<b>4-ESS2-1</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.
Unit 13: 29 - 30	Patterns of Earth's Features	<b>4-ESS2-2</b> Analyze and interpret data from maps to describe patterns of Earth's features.
Unit 14: 31 - 32	Engineering Design: Earthquake-Resistant Buildings	<b>4-ESS3-2</b> Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. <b>3-5-ETS1-2</b> 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.

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Unit 1: 5	Crosscutting Concepts	Understand how cross-cutting concepts can be used to observe or explain phenomena.
Unit 1: 6	Measurement, Data, and Graphing	Measure, graph, and describe quantities to address scientific questions.
<b>5. Structure and Properties of Matter</b>		
Unit 2: 7 - 8	Structure of Matter	<b>5-PS1-1</b> Develop a model to describe that matter is made of particles too small to be seen.
Unit 3: 9 - 10	Ice Cream Matters	<b>5-PS1-2</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.
Unit 4: 11 - 12	Mystery Powders	<b>5-PS1-3</b> Make observations and measurements to identify materials based on their properties.
Unit 5: 13 - 14	Substance Changes	<b>5-PS1-4</b> Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
Unit 6: 15 - 16	Engineering Design: Crackin' Chemistry	<p><b>3-5-ETS1-1</b> Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.</p> <p><b>3-5-ETS1-2</b> 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.</p> <p><b>3-5-ETS1-3</b> 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>

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<b>5. Matter and Energy in Organisms and Ecosystems</b>		
Unit 7: 17 - 18	Grizzlies in Alaska	<b>5-PS3-1</b> 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.
Unit 8: 19 - 20	Plant Growth	<b>5-LS1-1</b> Support an argument that plants get the materials they need for growth chiefly from air and water.
Unit 9: 21 - 22	Matter in Ecosystems	<b>5-LS2-1</b> Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
<b>5. Earth's Systems</b>		
Unit 10: 23 - 24	Wishy Washington Weather	<b>5-ESS2-1</b> Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
Unit 11: 25	Water on Earth	<b>5-ESS2-2</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.
Unit 12: 26 - 27	The Plastic Problem	<p><b>5-ESS3-1</b> Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.</p> <p><b>3-5-ETS1-1</b> Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.</p> <p><b>3-5-ETS1-2</b> 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.</p>
<b>5. Space Systems: Stars and the Solar System</b>		
Unit 13: 28 - 29	Downward Force on Earth	<p><b>5-PS2-1</b> Support an argument that the gravitational force exerted by Earth on objects is directed down.</p> <p><b>3-5-ETS1-2</b> 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.</p>
Unit 14: 30	The Brightness of the Sun and Stars	<b>5-ESS1-1</b> Support an argument that the apparent brightness of the sun and stars is due to their relative distances from the Earth.
Unit 15: 31 - 32	Patterns in the Sky	<b>5-ESS1-2</b> Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.