Week	Title	Standards Covered
1	Science and Engineering	Nature of Science
2	Scientists and Engineers Use the Five Senses	
3	You Can be a Scientist or Engineer	
4	The Engineering Design Process	Science and Engineering
5	Structure and Function	Crosscutting Concepts
Motion and Stability of Forces (PS2)		
6	Motion	**K.PS2.1** 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.
7	What is a Push?	
8	What is a Pull?	
9	Engineering: Push and Pull	**K.PS2.2** 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.
10	Measurement and Data	Nature of Science
From Molecules to Organisms: Structure and Function (LS1)		
11	Living and Nonliving Things	Nature of Science
12	Plants Have Needs	**K.LS1.1** Use observations to describe patterns of what plants and animals (including humans) need to survive.
13	Animals Have Needs	
14	Humans Have Needs	
15	Engineering: Needs	
Earth Systems (ESS2)		
16	Cause and Effect	Crosscutting Concepts
17	Plants Change the Environment	**K.ESS2.2** Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
18	Animals Change the Environment	
19	Humans Change the Environment	
20	Engineering: Change	

Week	Title	Standards Covered
		Earth and Human Activity (ESS3)
21	Models	Nature of Science
22	Food chains	**K.ESS3.1** Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
23	Habitats	
24	Engineering: Protect a Habitat	Covers grade 1 standard 1.ESS3.1
		Energy (PS3)
25	Patterns	Crosscutting Concepts
26	The Sun	**K.PS3.1** Make observations to determine the effect of sunlight on Earth's surface.
27	Sun Protection	
28	Engineering: Sun Protection	**K.PS3.2** Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.
		Earth Systems (ESS2)
29	What is Weather?	**K.ESS2.1** Use and share observations of local weather conditions to describe patterns over time.
30	Weather Has Patterns	
		Earth and Human Activity (ESS3)
31	Severe Weather	**K.ESS3.2** Ask questions to understand the purpose of weather forecasting to prepare for and respond to severe weather.
32	Engineering: Weather	

Week	Title	Standards Covered
1	Science and Engineering	Nature of Science
2	You Can Be a Scientist or Engineer!	
3	Teamwork	
4	Patterns	Crosscutting Concepts
5	The Engineering Design Process	Science and Engineering
6	Cause and Effect	Crosscutting Concepts
Waves and Their Applications in Technologies for Information Transfer (PS4)		
7	What is Sound?	**1.PS4.1** Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
8	Features of Sound	
9	What is Light?	**1.PS4.2** Make observations to construct an evidence-based account that objects can be seen only when illuminated.
10	Sources of Light	
11	Light On Materials	**1.PS4.3** Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.
12	Sound and Light	**1.PS4.4** Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.
13	Engineering: Sound and Light	
From Molecules to Organisms: Structure and Function (LS1)		
14	Structure and Function	Crosscutting Concept
15	Animals Have Parts That Help Them	**1.LS1.1** 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.
16	Animals Live In Many Places	
17	Plants Have Parts That Help Them	
18	Plants Live In Many Places	
19	Engineering: Animals & Plants	
20	Models	Nature of Science
21	Animal Offspring	**1.LS1.2** Obtain information from media and/or text to determine patterns in the behavior of parents and offspring that help offspring survive.
22	Plant Offspring	

Week	Title	Standards Covered
Heredity: Inheritance and Variation of Traits (LS3)		
23	Animals and their Offspring	**1.LS3.1** Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
24	Plants and their Offspring	
25	Engineering: Learning from Offspring	
Earth's Place in the Universe (ESS1)		
26	Measurement and Data	Nature of Science
27	Objects in Space	**1.ESS1.1** Use observations of the sun, moon, and stars to describe patterns that can be predicted.
28	Daytime Sky	
29	Nighttime Sky	
30	Phases of the Moon	
31	Seasons	**1.ESS1.2** Make observations at different times of year to relate the amount of daylight and relative temperature to the time of year.
32	Engineering Design: Sundial	

Week	Title	Standards Covered
1	What is Science? What is Engineering?	Nature of Science
2	How Scientists and Engineers Think and Act	
3	Working Together	
4	Engineering Design Process	Science and Engineering
5	Crosscutting Concepts	Crosscutting Concepts
6	Measurement and Data	Nature of Science
Matter and Its Interactions (PS1)		
7	States of Matter	**2.PS1.1** Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
8	Properties of Matter	
9	Investigating Matter: Part 1	
10	Investigating Matter: Part 2	
11	Engineering Design: Catapults	**2.PS1.2** Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for the intended purpose.
12	Assembly and Disassembly	**2.PS1.3** 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.
13	Changes in States of Matter	**2.PS1.4** Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
Ecosystems: Interactions, Energy and Dynamics (LS2)		
14	Germination and Plant Growth	**2.LS2.1** Plan and conduct an investigation to determine if plants need sunlight and water to grow.
15	Plant Parts and Functions	**2.LS2.2** Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
16	Pollination	
17	Seed Dispersal	
18	Engineering Design: Seed Dispersal or Pollination	

Week	Title	Standards Covered
Biological Unity and Diversity (LS4)		
19	Rainforest and Temperate Forest Habitats	**2.LS4.1** Make observations of plants and animals to compare the diversity of life in different habitats.
20	Tundra, Grassland, and Desert Habitats	
21	Saltwater and Freshwater Habitats	
22	Human Impacts on Habitats	This week is optional
Earth's Place in the Universe (ESS1)		
23	Earth's Surface Changes Quickly	**2.ESS1.1** Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
24	Earth's Surface Changes Slowly	
Earth's Systems (ESS2)		
25	Natural Disaster Safeguards	**2.ESS2.1** Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
26	Engineering Design: Protection Against Flooding	
27	Engineering Design: Protection Against High Winds	
28	Landforms	**2.ESS2.2** Develop a model to represent the shapes and kind of land and bodies of water in an area.
29	Bodies of Water	
30	Water Cycle	**2.ESS2.3** Obtain information to identify where water is found on Earth and that it can be solid or liquid.
31	Engineering Design: My Community's Landforms and Bodies of Water	
32	Weather	This week is optional

Week	Title	Standards Covered
1	Who Are Scientists and Engineers?	Nature of Science
2	Big Ideas of Science and Engineering	Crosscutting Concepts
3	Measurement and Data	Nature of Science
4	Engineering Design Process	Science and Engineering
Motion and Stability: Forces and Interactions (PS2)		
5	Forces	**3.PS2.1** Plan and conduct investigations on the effects of balanced and unbalanced forces on the motion of an object.
6	Patterns in Forces	**3.PS2.2** Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.
7	Engineering Design: Why do I move when the car stops?	
8	Magnetic Forces	**3.PS2.3** Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.
9	Electromagnets	**3.PS2.4** Define a simple design problem that can be solved by applying scientific ideas about magnets.
10	Electric Forces	
11	Engineering Design: Magnetic and Electric Forces	
Ecosystems: Interactions, Energy, and Dynamics (LS2)		
12	Surviving in a Group	**3.LS2.1** Construct an argument that some animals form groups that help members survive.
Biological Unity and Diversity (LS4)		
13	Fossils	**3.LS4.1** Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.
14	Clues from the Past	
15	Organisms in their Habitats	**3.LS4.3** 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.
16	Engineering Design: The Big Mix up	
17	Changing Ecosystems	**3.LS4.4** 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.
18	People and the Ocean	
19	Engineering Design: Water Collection	

Week	Title	Standards Covered
From Molecules to Organisms: Structure and Function (LS1)		
20	Life Cycles	**3.LS1.1** Develop and use models to describe that organisms have unique and diverse life cycles but all have a common pattern of birth, growth, reproduction, and death.
Heredity: Inheritance and Variation of Traits (LS3)		
21	Inheriting Traits	**3.LS3.1** 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.
22	Families	
23	Adaptations	**3.LS3.2** Use evidence to support the explanation that traits can be influenced by the environment.
24	Are an Organism's Traits Influenced by the Environment?	
Biological Unity and Diversity (LS4)		
25	Variation Helps Organisms Survive	**3.LS4.2** Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving and reproducing.
Earth's Systems (ESS2)		
26	What Will the Weather Be Today?	**3.ESS2.1** Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
27	Weather vs Climate	**3.ESS2.2** Obtain and combine information to describe climates in different regions of the world.
Earth and Human Activity (ESS3)		
28	Weather Hazards	**3.ESS3.1** Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.
29	Engineering Design: Can We Control the Weather?	
30	Matter	These weeks are optional
31	What is Energy?	
32	Engineering Design: Heat Transfer	

Week	Title	Standards Covered
1	Measurement	Nature of Science
2	Data and Graphing	
3	Engineering Design Process	Science and Engineering
4	Crosscutting Concepts	Crosscutting Concepts
5	Mindsets	Nature of Science
Energy (PS3)		
6	Sound Energy	**4.PS3.1** Use evidence to construct an explanation relating the speed of an object to the energy of that object.
7	Let's Play Ball!	
8	Law of Conservation of Energy	**4.PS3.2** Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.
9	Electricity	
10	The Energy of Collision	**4.PS3.3** Ask questions and predict outcomes about the changes in energy that occur when objects collide.
11	Types of Energy	**4.PS3.4** Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.
12	Engineering Design: Rube Goldberg Machine	
Earth and Human Activity (ESS3)		
13	Nonrenewable Energy	**4.ESS3.1.** Obtain and combine information to describe that energy and fuels are derived from renewable and non-renewable resources and how their uses affect the environment.
14	Renewable Energy	
Waves and Their Applications in Technologies for Information Transfer (PS4)		
15	What Causes Changes in the Wavelength of a Wave?	**4.PS4.1** Develop and use a model of waves to describe patterns in terms of amplitude and wavelength, and to show that waves can cause objects to move.
16	How Much Energy is in a Wave?	
17	Transferring Data	**4.PS4.3** Generate and compare multiple solutions that use patterns to transfer information.
18	The Science of Eyesight	**4.PS4.2** Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.
19	Phases of the Moon	

Week	Title	Standards Covered
From Molecules to Organisms: Structure and Processes (LS1)		
20	What Is So Special About Leaves?	**4.LS1.1** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
21	Biodiversity	
22	Engineering Design: Hermit Crabs	
23	Animal Senses	**4.LS1.2** 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.
24	The Five Senses	
25	Adaptation	
Earth's Place in the Universe (ESS1)		
26	What is a Fossil?	**4.ESS1.1** Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.
27	The Rock Cycle	
Earth's Systems (ESS2)		
28	Weathering and Erosion	**4.ESS2.1** Plan and conduct investigations on the effects of water, ice, wind, and vegetation on the relative rate of weathering and erosion.
29	Maps are Models	**4.ESS2.2** Analyze and interpret data from maps to describe patterns of Earth's features.
30	Volcanoes	
Earth and Human Activity (ESS3)		
31	Engineering Design: Natural Disasters	**4.ESS3.2** Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.
32	Stopping the Impact!	

Week	Title	Standards Covered
1	Metric System and Measurement	Nature of Science
2	Crosscutting Concepts	Crosscutting Concepts
3	Engineering Design Process	Science and Engineering
	Matter and Its Interactions (PS1)	
4	What is Matter?	**5.PS1.1** Develop a model to describe that matter is made of particles too small to be seen.
5	States of Matter	**5.PS1.2** 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.
6	Law of Conservation of Mass	
7	Properties of Matter - Part 1	**5.PS1.3** Make observations and measurements to identify materials based on their properties.
8	Properties of Matter - Part 2	
9	Engineering Design: Fixing Potholes	**5.PS1.4** Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
	Energy (PS3)	
10	Matter Flow in Ecosystems	**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.
	From Molecules to Organisms: Structure and Processes (LS1)	
11	Photosynthesis	**5.LS1.1** Support an argument that plants get the materials they need for growth chiefly from air and water.
12	Plants	
	Ecosystems: Interactions, Energy, and Dynamics (LS2)	
13	Invasive Species	**5.LS2.1** Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. **5.LS2.2** Use models to explain factors that upset the stability to local ecosystems.
14	The Carbon Connection	
	Earth's Systems (ESS2)	
15	Hydrosphere	**5.ESS2.1** Develop a model to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
16	Geosphere	
17	Atmosphere	
18	Biosphere	

Week	Title	Standards Covered
19	Engineering Design: Building Dams	
20	Types of Water	**5.ESS2.2** Describe and graph amounts of saltwater and freshwater in various reservoirs to provide evidence about the distribution of water on Earth.
21	The Role of Water	
Earth and Human Activity (ESS3)		
22	Engineering Design: Oil Spill	**5.ESS3.1** Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environments.
23	Protecting the Earth	
24	Engineering Design: Landfills	
Motion and Stability: Forces and Interactions (PS2)		
25	What is Gravity?	**5.PS2.1** Support an argument, with evidence, that Earth's gravitational force pulls objects downward toward the center of the earth.
26	Gravity in Space	
27	Engineering Design: Mission to Mars	
Earth's Place in the Universe (ESS1)		
28	What is a Star?	**5.ESS1.1** Support an argument with evidence that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.
29	Shadows	**5.ESS1.2** Represent data in graphical displays to reveal patterns of daily changes in the length and direction of shadows, in addition to different positions of the sun, moon, and stars at different times of the day, month, and year.
30	The Earth	
31	The Moon	
32	The Seasons	