

Standards		Weekly Issues
<p>These weeks lay the foundation for scientific investigation and engineering design.</p>		<p>1 - Science and Engineering 2 - Scientists and Engineers Use the Five Senses 3 - You Can be a Scientist or Engineer 4 - The Engineering Design Process 5 - Structure and Function</p>
K. Forces and Interactions: Pushes and Pulls		
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.	6 - Motion 7 - What is a Push? 8 - What is a 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 a pull.	9 - Engineering: Push and Pull 10 - Measurement and Data (Nature of Science)
K. Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment		
K-LS1-1	Use observations to describe patterns of what plants and animals (including humans) need to survive.	11 - Living and Nonliving Things (Nature of Science) 12 - Plants Have Needs 13 - Animals Have Needs 14 - Humans Have Needs 15 - Engineering: Needs
K-ESS2-2	Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.	16 - Cause and Effect (Crosscutting Concepts) 17 - Plants Change the Environment 18 - Animals Change the Environment 19 - Humans Change the Environment 20 - Engineering: Change
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.	21 - Models (Nature of Science) 22 - Food chains 23 - Habitats
K-ESS3-3*	Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.	24 - Engineering: Protect a Habitat
K. Weather and Climate		
K-PS3-1	Make observations to determine the effect of sunlight on Earth's surface.	25 - Patterns 26 - The Sun 27 - Sun Protection 28 - Engineering: Sun Protection

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K-PS3-2	Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.	28 - Engineering: Sun Protection
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.	29 - What is Weather? 30 - Weather Has Patterns 32 - Engineering: Weather
K-ESS3-2*	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.	31 - Severe Weather 32 - Engineering: Weather

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K-2.Engineering Design		
K-2-ETS1-1	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.	4 - The Engineering Design Process 9 - Engineering: Push and Pull 15 - Engineering: Needs 20 - Engineering: Change 24 - Engineering: Protect a Habitat 28 - Engineering: Sun Protection 32 - Engineering: Weather
K-2-ETS1-2	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.	4 - The Engineering Design Process 9 - Engineering: Push and Pull 15 - Engineering: Needs 20 - Engineering: Change 21 - Models 24 - Engineering: Protect a Habitat 28 - Engineering: Sun Protection 32 - Engineering: Weather
K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	4 - The Engineering Design Process 9 - Engineering: Push and Pull 15 - Engineering: Needs 20 - Engineering: Change 24 - Engineering: Protect a Habitat 28 - Engineering: Sun Protection 32 - Engineering: Weather

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<p>These weeks lay the foundation for scientific investigation and engineering design.</p>		<p>1 - Science and Engineering 2 - You Can Be a Scientist or Engineer! 3 - Teamwork 4 - Patterns 5 - The Engineering Design Process 6 - Cause and Effect</p>
1. Waves: Light and Sound		
1-PS4-1	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.	7 - What is Sound? 8 - Features of Sound
1-PS4-2	Make observations to construct an evidence-based account that objects can be seen only when illuminated.	9 - What is Light? 10 - Sources of Light
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.	11 - Light On Materials
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.	12 - Sound and Light 13 - Engineering: Sound and Light
1. Structure, Function, and Information Processing		
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.	14 - Structure and Function (Crosscutting Concepts) 15 - Animals Have Parts That Help Them 16 - Animals Survive 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) 25 - Engineering: Learning from Offspring
1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.	21 - Animal Offspring 22 - Plant Offspring 25 - Engineering: Learning from 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.	23 - Animals and their Offspring 24 - Plants and their Offspring 25 - Engineering: Learning from Offspring

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1. Space Systems: Patterns and Cycles		
1-ESS1-1	Use observations of the sun, moon, and stars to describe patterns that can be predicted.	26 - Measurement and Data (Nature of Science) 27 - Objects in Space 28 - Daytime Sky 29 - Nighttime Sky 30 - Phases of the Moon
1-ESS1-2	Make observations at different times of year to relate the amount of daylight to the time of year.	31 - Seasons 32 - Engineering Design: Sundial

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K-2.Engineering Design		
K-2-ETS1-1	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.	5 - The Engineering Design Process 13 - Engineering: Sound and Light 19 - Engineering: Animals & Plants 25 - Engineering: Learning from Offspring 32 - Engineering Design: Sundial
K-2-ETS1-2	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.	5 - The Engineering Design Process 13 - Engineering: Sound and Light 14 - Structure and Function 19 - Engineering: Animals & Plants 25 - Engineering: Learning from Offspring 32 - Engineering Design: Sundial
K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	5 - The Engineering Design Process 13 - Engineering: Sound and Light 19 - Engineering: Animals & Plants 25 - Engineering: Learning from Offspring 32 - Engineering Design: Sundial

Standards		Weekly Issues
<p>These weeks lay the foundation for scientific investigation and engineering design.</p>		<p>1 - What is Science? What is Engineering? 2 - How Scientists and Engineers Think and Act 3 - Working Together 4 - The Engineering Design Process 5 - Crosscutting Concepts 6 - Measurement and Data</p>
2. Structure and Properties of Matter		
2-PS1-1	Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.	<p>7 - States of Matter 8 - Properties of Matter 9 - Investigating Matter: Part 1 10 - Investigating Matter: Part 2</p>
2-PS1-2*	Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.	11 - Engineering Design: Catapults
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.	12 - Assembly and Disassembly
2-PS1-4	Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.	13 - Changes in States of Matter
2. Interdependent Relationships in Ecosystems		
2-LS2-1	Plan and conduct an investigation to determine if plants need sunlight and water to grow.	<p>14 - Germination and Plant Growth 15 - Plant Parts and Functions</p>
2-LS2-2*	Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.	<p>15 - Plant Parts and Functions 16 - Pollination 17 - Seed Dispersal 18 - Engineering Design: Seed Dispersal or Pollination</p>
2-LS4-1	Make observations of plants and animals to compare the diversity of life in different habitats.	<p>19 - Rainforest and Temperate Forest Habitats 20 - Tundra, Grassland, and Desert Habitats 21 - Saltwater and Freshwater Habitats</p>
2. Earth's Systems: Processes that Shape the Earth		
2-ESS1-1	Use information from several sources to provide evidence that Earth events can occur quickly or slowly.	<p>23 - Earth's Surface Changes Quickly 24 - Earth's Surface Changes Slowly</p>

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2-ESS2-1*	Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.	25 - Natural Disaster Safeguards 26 - Engineering Design: Protection Against Flooding 27 - Engineering Design: Protection Against High Winds
2-ESS2-2	Develop a model to represent the shapes and kinds of land and bodies of water in an area.	28 - Landforms 29 - Bodies of Water 31 - Engineering Design: My Community's Landforms and Bodies of Water
2-ESS2-3	Obtain information to identify where water is found on Earth and that it can be solid or liquid.	29 - Engineering Design: Can We Control the Weather? 30 - Water Cycle
These weeks are optional.		22 - Human Impacts on Habitats 32 - Weather

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K-2.Engineering Design		
K-2-ETS1-1	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.	4 - The Engineering Design Process 11 - Engineering Design: Catapults 18 - Engineering Design: Seed Dispersal or Pollination 26 - Engineering Design: Protection Against Flooding 27 - Engineering Design: Protection Against High Winds 31 - Engineering Design: My Community's Landforms and Bodies of Water
K-2-ETS1-2	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.	4 - The Engineering Design Process 11 - Engineering Design: Catapults 18 - Engineering Design: Seed Dispersal or Pollination 26 - Engineering Design: Protection Against Flooding 27 - Engineering Design: Protection Against High Winds 31 - Engineering Design: My Community's Landforms and Bodies of Water

Standards		Weekly Issues
K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	4 - The Engineering Design Process 11 - Engineering Design: Catapults 18 - Engineering Design: Seed Dispersal or Pollination 26 - Engineering Design: Protection Against Flooding 27 - Engineering Design: Protection Against High Winds 31 - Engineering Design: My Community's Landforms and Bodies of Water

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These weeks lay the foundation for scientific investigation and engineering design.		1 - Who Are Scientists and Engineers? 2 - Big Ideas of Science and Engineering 3 - Measurement and Data 4 - The Engineering Design Process
3. Forces and Interactions		
3-PS2-1	Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.	5 - Forces 7 - Engineering Design: Why do I move when the car stops?
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.	6 - Patterns in Forces 7 - Engineering Design: Why do I move when the car stops?
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.	8 - Magnetic Forces 9 - Electromagnets 10 - Electric Forces
3-PS2-4*	Define a simple design problem that can be solved by applying scientific ideas about magnets.	11 - Engineering Design: Magnetic and Electric Forces
3. Interdependent Relationships in Ecosystems		
3-LS2-1	Construct an argument that some animals form groups that help members survive.	12 - Surviving in a Group
3-LS4-1	Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.	13 - Fossils 14 - Clues from the Past
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.	15 - Organisms in their Habitats 16 - Engineering Design: The Big Mix up
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.	17 - Changing Ecosystems 18 - People and the Ocean 19 - Engineering Design: Water Collection
3. Inheritance and Variation of Traits: Life Cycles and Traits		
3-LS1-1	Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.	20 - Life Cycles
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.	21 - Inheriting Traits 22 - Families
3-LS3-2	Use evidence to support the explanation that traits can be influenced by the environment.	23 - Adaptations 24 - Are an Organism's Traits Influenced by the Environment?

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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, finding mates, and reproducing.	23 - Adaptations 25 - Variation Helps Organisms Survive
3. Weather and Climate		
3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.	26 - What Will the Weather Be Today?
3-ESS2-2	Obtain and combine information to describe climates in different regions of the world.	27 - Weather vs Climate
3-ESS3-1*	Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.	28 - Weather Hazards 29 - Engineering Design: Can We Control the Weather?
These weeks are optional.		30 - Matter 31 - What is Energy? 32 - Engineering Design: Heat Transfer

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3-5.Engineering Design		
3-5-ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.	4 - The Engineering Design Process 11 - Engineering Design: Magnetic and Electric Forces 16 - Engineering Design: The Big Mix up 19 - Engineering Design: Water Collection 28 - Weather Hazards 29 - Engineering Design: Can We Control the Weather?
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.	4 - The Engineering Design Process 7 - Engineering Design: Why do I move when the car stops? 11 - Engineering Design: Magnetic and Electric Forces 16 - Engineering Design: The Big Mix up 19 - Engineering Design: Water Collection 29 - Engineering Design: Can We Control the Weather?

Standards		Weekly Issues
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.	4 - The Engineering Design Process 11 - Engineering Design: Magnetic and Electric Forces 16 - Engineering Design: The Big Mix up 19 - Engineering Design: Water Collection 29 - Engineering Design: Can We Control the Weather?

Standards		Weekly Issues
These weeks lay the foundation for scientific investigation and engineering design.		1 - Measurement 2 - Data and Graphing 3 - The Engineering Design Process 4 - Crosscutting Concepts 5 - Mindsets
4. Energy		
4-PS3-1	Use evidence to construct an explanation relating the speed of an object to the energy of that object.	6 - Sound Energy 7 - Let's Play Ball!
4-PS3-2	Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.	8 - Law of Conservation of Energy 9 - Electricity
4-PS3-3	Ask questions and predict outcomes about the changes in energy that occur when objects collide.	10 - The Energy of Collision
4-PS3-4*	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.	11 - Types of Energy 12 - Engineering Design: Rube Goldberg Machine
4-ESS3-1	Obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment.	13 - Nonrenewable Energy 14 - Renewable Energy
4. Waves: Waves and Information		
4-PS4-1	Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.	15 - What Causes Changes in the Wavelength of a Wave? 16 - How Much Energy is in a Wave?
4-PS4-3*	Generate and compare multiple solutions that use patterns to transfer information.	17 - Transferring Data
4. Structure, Function, and Information Processing		
4-PS4-2	Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.	18 - The Science of Eyesight 19 - Phases of the Moon
4-LS1-1	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	20 - What Is So Special About Leaves? 21 - Biodiversity 22 - Engineering Design: Hermit Crabs
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.	23 - Animal Senses 24 - The Five Senses 25 - Adaptation
4. Earth's Systems: Processes that Shape the Earth		
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.	26 - What is a Fossil? 27 - The Rock Cycle

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4-ESS2-1	Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.	28 - Weathering and Erosion
4-ESS2-2	Analyze and interpret data from maps to describe patterns of Earth's features.	29 - Maps are Models 30 - Volcanoes
4-ESS3-2*	Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.	31 - Engineering Design: Natural Disasters 32 - Stopping the Impact!

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3-5.Engineering Design		
3-5-ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.	3 - The Engineering Design Process 10 - The Energy of Collision 12 - Engineering Design: Rube Goldberg Machine 22 - Engineering Design: Hermit Crabs
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.	3 - The Engineering Design Process 12 - Engineering Design: Rube Goldberg Machine 22 - Engineering Design: Hermit Crabs 31 - Engineering Design: Natural Disasters
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.	3 - The Engineering Design Process 9 - Electricity 12 - Engineering Design: Rube Goldberg Machine 22 - Engineering Design: Hermit Crabs 27 - The Rock Cycle

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These weeks lay the foundation for scientific investigation and engineering design.		1 - Metric System and Measurement 2 - Crosscutting Concepts 3 - The Engineering Design Process
5. Structure and Properties of Matter		
5-PS1-1	Develop a model to describe that matter is made of particles too small to be seen.	4 - What is 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.	5 - States of Matter 6 - Law of Conservation of Mass
5-PS1-3	Make observations and measurements to identify materials based on their properties.	7 - Properties of Matter - Part 1 8 - Properties of Matter - Part 2
5-PS1-4	Conduct an investigation to determine whether the mixing of two or more substances results in new substances.	9 - Engineering Design: Fixing Potholes
5. Matter and Energy in Organisms and 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.	10 - Matter Flow in Ecosystems
5-LS1-1	Support an argument that plants get the materials they need for growth chiefly from air and water.	11 - Photosynthesis 12 - Plants
5-LS2-1	Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.	10 - Matter Flow in Ecosystems 13 - Invasive Species 14 - The Carbon Connection
5. Earth's Systems		
5-ESS2-1	Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.	15 - Hydrosphere 16 - Geosphere 17 - Atmosphere 18 - Biosphere 19 - Engineering Design: Building Dams
5-ESS2-2	Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.	20 - Types of Water 21 - The Role of Water
5-ESS3-1	Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.	20 - Types of Water 22 - Engineering Design: Oil Spill 23 - Protecting the Earth 24 - Engineering Design: Landfills

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5. Space Systems: Stars and the Solar System		
5-PS2-1	Support an argument that the gravitational force exerted by Earth on objects is directed down.	25 - What is Gravity? 26 - Gravity in Space 27 - Engineering Design: Mission to Mars
5-ESS1-1	Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.	28 - What is a Star?
5-ESS1-2	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.	29 - Shadows 30 - The Earth 31 - The Moon 32 - The Seasons
3-5.Engineering Design		
3-5-ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.	3 - The Engineering Design Process 9 - Engineering Design: Fixing Potholes 19 - Engineering Design: Building Dams 22 - Engineering Design: Oil Spill 24 - Engineering Design: Landfills 27 - Engineering Design: Mission to Mars
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.	3 - The Engineering Design Process 9 - Engineering Design: Fixing Potholes 19 - Engineering Design: Building Dams 22 - Engineering Design: Oil Spill 24 - Engineering Design: Landfills 27 - Engineering Design: Mission to Mars
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.	3 - The Engineering Design Process 9 - Engineering Design: Fixing Potholes 19 - Engineering Design: Building Dams 22 - Engineering Design: Oil Spill 24 - Engineering Design: Landfills 27 - Engineering Design: Mission to Mars