

Benchmark Advance NGSS Alignment

Grade K			
Grade	Unit	Topic	Standard
K	3	Plants and Animals Have Needs	<p>K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.</p> <p>K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.</p> <p>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.</p>
K	5	Technology at Home and School	<p>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.</p>
K	8	Weather and Seasons	<p>K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.</p> <p>K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.</p>
K	10	Forces & Motion	<p>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.</p> <p>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.</p>

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Grade 1			
Grade	Unit	Topic	Standard
1	3	Plants and Animals Grow and Change	1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
1	5	Technology at Work	1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated. 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.
1	8	Observing the Sky	1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted.
1	10	Exploring Sound and Light	1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. 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. 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. 1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year.

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Grade 2			
Grade	Unit	Topic	Standard
2	3	Plants and Animals in Their Habitats	<p>2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.</p> <p>2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.</p>
2	5	Solving Problems Through Technology	<p>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.</p>
2	8	Wind and Water Change Earth	<p>2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly.</p> <p>2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.</p>
2	10	States of Matter	<p>2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.</p> <p>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.</p> <p>2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.</p>

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Grade 3			
Grade	Unit	Topic	Standard
3	3	Animal Adaptations	<p>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.</p> <p>3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.</p>
3	5	Advancements in Technology	<p>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.</p>
3	8	Weather and Climate	<p>3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.</p> <p>3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.</p> <p>3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.</p>
3	10	Forces and Interactions	<p>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.</p> <p>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</p> <p>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</p> <p>3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets.</p>

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Grade 4			
Grade	Unit	Topic	Standard
4	3	Observing Nature	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.
4	5	Technology for a Green Future	<p>4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.</p> <p>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.</p> <p>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.</p>
4	8	Earth Changes	<p>4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features.</p> <p>4-ESS3-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.</p>
4	10	The Power of Electricity	4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

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Grade 5			
Grade	Unit	Topic	Standard
5	3	Cultivating Natural Resources	<p>5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment.</p> <p>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.</p> <p>5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.</p> <p>5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.</p>
5	5	Technology’s Impact on Society	<p>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.</p> <p>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.</p>
5	8	Water: Fact and Fiction	<p>5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.</p> <p>5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment.</p>

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Grade 5			
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5	10	Transforming Matter	<p>5-PS1-1. Develop a model to describe that matter is made of particles too small to be seen.</p> <p>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.</p> <p>5-PS1-3. Make observations and measurements to identify materials based on their properties.</p> <p>5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.</p>

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Grade 6			
Grade	Unit	Topic	Standard
6	3	Relationships in Nature	MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
6	5	Technology in the 21st Century	<p>MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p> <p>MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.</p> <p>MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.</p> <p>MS-ESS2-4. Develop a model to describe the cycling of water through Earth’s systems driven by energy from the sun and the force of gravity.</p> <p>MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.</p> <p>MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.</p> <p>MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.</p>

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Grade 6			
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6	8	Exploring Earth's Structures	MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.
6	10	Understanding Our Energy Resources	MS-ESS2-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. MS-PS3-1. Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.