

# Three-Dimensional Learning Design in 30-Minute Lessons



**Building Blocks**  
OF SCIENCE™ | **3D**

## NGSS OVERVIEW CORRELATION

Grades K-5



# Learning Framework

Phenomenon-based investigations with digital support in 30-minute lessons!



**Building Blocks**  
OF SCIENCE™ | 3D

<b>Kindergarten</b>	<b>Push, Pull, Go</b> <i>K-PS2-1; K-PS2-2;                      K-2-ETS1-1; K-2-ETS1-2</i>	<b>Living Things and Their Needs</b> <i>K-LS1-1; K-ESS2-2;                      K-ESS3-1; K-ESS3-3;                      K-2-ETS1-2</i>	<b>Weather and Sky</b> <i>K-PS3-1; K-PS3-2;                      K-ESS2-1; K-ESS3-2;                      K-2-ETS1-1; K-2-ETS1-2</i>
<b>1st Grade</b>	<b>Light and Sound Waves</b> <i>1-PS4-1; 1-PS4-2;                      1-PS4-3; 1-PS4-4;                      K-2-ETS1-1; K-2-ETS1-2</i>	<b>Exploring Organisms</b> <i>1-LS1-1; 1-LS1-2; 1-LS3-1;                      K-2-ETS1-2</i>	<b>Sky Watchers</b> <i>1-ESS1-1; 1-ESS1-2</i>
<b>2nd Grade</b>	<b>Matter</b> <i>2-PS1-1; 2-PS1-2; 2-PS1-3;                      2-PS1-4; K-2-ETS1-1;                      K-2-ETS1-2</i>	<b>Ecosystem Diversity</b> <i>2-LS2-1; 2-LS2-2; 2-LS4-1;                      K-2-ETS1-2; K-2-ETS1-3</i>	<b>Earth Materials</b> <i>2-PS1-1; 2-ESS1-1;                      2-ESS2-1; 2-ESS2-2;                      2-ESS2-3; K-2-ETS1-1;                      K-2-ETS1-2</i>
<b>3rd Grade</b>	<b>Forces and Interactions</b> <i>3-PS2-1; 3-PS2-2;                      3-PS2-3; 3-PS2-4;                      3-5-ETS1-1; 3-5-ETS1-2</i>	<b>Life in Ecosystems</b> <i>3-LS1-1; 3-LS2-1; 3-LS3-1;                      3-LS3-2; 3-LS4-1; 3-LS4-2;                      3-LS4-3; 3-LS4-4;                      3-5-ETS1-2</i>	<b>Weather and Climate Patterns</b> <i>3-ESS2-1; 3-ESS2-2;                      3-ESS3-1; 3-5-ETS1-2</i>
<b>4th Grade</b>	<b>Energy Works</b> <i>4-PS3-1; 4-PS3-2; 4-PS3-3;                      4-PS3-4; 4-PS4-1; 4-PS4-3;                      4-ESS3-1; 3-5-ETS1-2;                      3-5-ETS1-3</i>	<b>Plant and Animal Structures</b> <i>4-LS1-1; 4-LS1-2; 4-PS4-2;                      3-5-ETS1-2</i>	<b>Changing Earth</b> <i>4-ESS1-1; 4-ESS2-1;                      4-ESS2-2; 4-ESS3-2;                      3-5-ETS1-2</i>
<b>5th Grade</b>	<b>Structure and Properties of Matter</b> <i>5-PS1-1; 5-PS1-2;                      5-PS1-3; 5-PS1-4;                      3-5-ETS1-2</i>	<b>Matter and Energy in Ecosystems</b> <i>5-PS3-1; 5-LS1-1; 5-LS2-1;                      5-ESS2-1; 5-ESS3-1;                      3-5-ETS1-3</i>	<b>Earth and Space Systems</b> <i>5-PS2-1; 5-ESS1-1;                      5-ESS1-2; 5-ESS2-1;                      5-ESS2-2; 5-ESS3-1;                      3-5-ETS1-2</i>

## NGSS\* Overview Correlation

### KINDERGARTEN

#### K. Forces and Interactions: Pushes and Pulls

Performance Expectation	Correlation to Building Blocks of Science 3D
<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.	<p><b><u>Push, Pull, Go</u></b>  <b>TG:</b> L1 pgs. 32-46, SIS 1D.1, SIS 1D.2, AOS; L2 pgs. 50-56, LA 2A, SIS 2A, THS Activity A, AOS; L3 pgs. 64-71, LA 3A, SIS 3B, AOS; L4 pgs. 76-83, LA 4A, SIS 4B, THS Activity B, AOS; L5 pgs. 90-100, SIS 5A, SIS 5D, SA  <b>SR:</b> pgs. 2-6, 8-14  <b>Digital Resources:</b> IWB: Our Ideas About Force and Motion; IWB: What We Know About Spinning and Twirling; IWB: Our Problems and How We Fixed Them; IWB: What We Know About Force and Motion; SIM: Count, Sort, Build; SIM: Rolling Ball; SIM: Swing Set, SIM: Dominoes, SIM: Spinning; SIM: Motion Series</p>
<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.	<p><b><u>Push, Pull, Go</u></b>  <b>TG:</b> L5 pgs. 90-100, SIS 5A, SIS 5D, SA  <b>Digital Resources:</b> IWB: Our Ideas About Force and Motion; IWB: What We Know About Force and Motion; IWB: Our Problems and How We Fixed Them; SIM: Motion Series</p>

#### K. Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

Performance Expectation	Correlation to Building Blocks of Science 3D
<b>K-LS1-1.</b> Use observations to describe patterns of what plants and animals (including humans) need to survive.	<p><b><u>Living Things and Their Needs</u></b>  <b>TG:</b> L1 pgs. 30-42, Plant Journal Sheet, THS, SIS 1D, AOS; L2 pgs. 50-60, Plant Journal Sheet, Plant Data Sheet, LA 2B, SIS 2B, AOS  <b>SR:</b> pgs. 2-5  <b>Digital Resources:</b> IWB: Living vs. Nonliving; IWB: What Do All Living Things Do? IWB: What Do Plants Need to Grow Well? SIM: Factors of Plant Growth, Part 1</p>
<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.	<p><b><u>Living Things and Their Needs</u></b>  <b>TG:</b> L3 pgs. 68-77, Plant Data Sheet, SIS 3B, LA 3B, AOS  <b>SR:</b> pgs. 6-12</p>
<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.	<p><b><u>Living Things and Their Needs</u></b>  <b>TG:</b> L3 pgs. 68-77, Plant Data Sheet, SIS 3B, LA 3B, AOS  <b>SR:</b> pgs. 6-12</p>
<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.	<p><b><u>Living Things and Their Needs</u></b>  <b>TG:</b> L4 pgs. 84-95, Plant Data Sheet, SA  <b>SR:</b> pgs. 13-14  <b>Digital Resources:</b> IWB: Bessbug and Pumpkin Plant Environments; IWB: How Do We Change the Environment? IWB: What Do All Living Things Do? (from Lesson 1); SIM: Pollution</p>

**TG**—Teacher’s Guide; **AOS**—Assessment Observation Sheet; **SIS**—Student Investigation Sheet; **TS**—Teacher Sheet; **SR**—Student Reader **SIM**—Simulation; **IWB**—Interactive Whiteboard; **LA**—Literacy Article; **L&S**—Literacy and Science **THS**—Take-Home Science Activity; **SA**—Summative Assessment

\*Next Generation Science Standards® is a registered trademark of Achieve. Neither Achieve nor the lead states and partners that developed the Next Generation Science Standards were involved in the production of, and do not endorse, these products.

## K. Weather and Climate

### Performance Expectation

### Correlation to Building Blocks of Science 3D

**K-ESS2-1.** Use and share observations of local weather conditions to describe patterns over time.

***Weather and Sky***

**TG:** L1 pgs. 32-43, SIS 1B, SIS 1D, THS, AOS; L2 pgs. 52-69, SIS 2A, LA 2B, SIS 2B, SIS 2C, SIS 2D, SIS 2E, AOS, TS 2A

**SR:** pgs. 2-10

**Digital Resources:** IWB: Our Ideas About Weather; IWB: Daytime Sky; IWB: Nighttime Sky; IWB: Comparing Daytime and Nighttime Skies; IWB: How Can I Describe the Weather? IWB: Daily Weather Observations; IWB: Weekly Weather Graph; SIM: Daytime/ Nighttime; SIM: Precipitation; SIM: Cloud Cover; SIM: Wind Conditions

**K-ESS3-2.** Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.

***Weather and Sky***

**TG:** L3 pgs. 86-98, LA 3C, SIS 3C, THS Activity B, AOS

**SR:** pgs. 10, 15

**Digital Resources:** IWB: Dangerous Weather, IWB: Weather Safety; SIM: Rain Conditions

**K-PS3-1.** Make observations to determine the effect of sunlight on Earth's surface.

***Weather and Sky***

**TG:** L4 pgs. 106-115, SIS 4B, LA 4C, SIS 4C, AOS

**Digital Resources:** IWB: Temperature; SIM: Thermometer; SIM: The Sun's Warming Effect

**K-PS3-2.** Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.

***Weather and Sky***

**TG:** L5 pgs. 124-133, SIS 5A, SIS 5B, SIS 5C, SA

**SR:** pg. 8

**Digital Resources:** IWB: Our Ideas About Weather (from Lesson 1); IWB: Our Problems and How We Fixed Them; IWB: The Sun's Effects on Objects; IWB: What We Know About Weather; SIM: Shadows; SIM: The Sun's Warming Effect

## K-2 Engineering, Technology, and Applications of Science

### Performance Expectation

### Correlation to Building Blocks of Science 3D

**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.

***Push, Pull, Go***

**TG:** L1 pgs. 32-46, SIS 1D.1, SIS1D.2, AOS

**SR:** pgs. 2-3, 8-10, 12-14

**Digital Resources:** IWB: Our Ideas About Force and Motion; SIM: Count, Sort, Build; SIM: Rolling Ball

***Weather and Sky***

**TG::** L5 pgs. 124-133, SIS 5A, SIS 5B, SIS 5C, SA

**SR:** pg. 8

**Digital Resources:** IWB: Our Ideas About Weather (from Lesson 1); IWB: Our Problems and How We Fixed Them; IWB: The Sun's Effects on Objects; IWB: What We Know About Weather; SIM: Shadows; SIM: The Sun's Warming Effect

**TG**—Teacher's Guide; **AOS**—Assessment Observation Sheet; **SIS**—Student Investigation Sheet; **TS**—Teacher Sheet; **SR**—Student Reader **SIM**—Simulation; **IWB**—Interactive Whiteboard; **LA**—Literacy Article; **L&S**—Literacy and Science **THS**—Take-Home Science Activity; **SA**—Summative Assessment

## K–2 Engineering, Technology, and Applications of Science

### Performance Expectation

**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.

### Correlation to Building Blocks of Science 3D

#### ***Push, Pull, Go***

**TG:** L2 pgs. 50-56, LA 2A, SIS 2A, THS Activity A, AOS; L3 pgs. 64-71, LA 3A, SIS 3B, AOS; L4 pgs. 76-83, LA 4A, SIS 4B, THS Activity B, AOS; L5 pgs. 90-100, SIS 5A, SIS 5D, SA  
**SR:** pgs. 4-6, 10-14

**Digital Resources:** IWB: What We Know About Spinning and Twirling; IWB: Our Ideas About Force and Motion; IWB: Our Problems and How We Fixed Them; IWB: What We Know About Force and Motion; SIM: Swing Set, SIM: Dominoes, SIM: Spinning; SIM: Motion Series

#### ***Living Things and Their Needs***

**TG:** L3 pgs. 68-77, Plant Data Sheet, SIS 3B, LA 3B, AOS; L4 pgs. 84-95, Plant Data Sheet, SA  
**SR:** pgs. 13-14

**Digital Resources:** IWB: Bessbug and Pumpkin Plant Environments; IWB: How Do We Change the Environment? IWB: What Do All Living Things Do? (from Lesson 1); SIM: Pollution

#### ***Weather and Sky***

**TG:** L5 pgs. 124-133, SIS 5A, SIS 5B, SIS 5C, SA  
**SR:** pg. 8

**Digital Resources:** IWB: Our Ideas About Weather (from Lesson 1); IWB: Our Problems and How We Fixed Them; IWB: The Sun's Effects on Objects; IWB: What We Know About Weather; SIM: Shadows; SIM: The Sun's Warming Effect

## GRADE 1

## 1. Waves: Light and Sound

Performance Expectation	Correlation to Building Blocks of Science 3D
<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.	<b><u>Light and Sound Waves</u></b> <b>TG:</b> L2 pgs. 48-59, SIS 2A, LA 2B, SIS 2C, AOS; L3 pgs. 72-80, SIS 3A, LA 3B, AOS; L6 pgs. 124-133, SIS 6B, SA <b>SR:</b> pgs. 10-14 <b>Digital Resources:</b> IWB: Vibrations of the Drum; IWB: How Do We Communicate with Sound and Light?
<b>1-PS4-2.</b> Make observations to construct an evidence-based account that objects can be seen only when illuminated.	<b><u>Light and Sound Waves</u></b> <b>TG:</b> L1 pgs. 34-45, AOS; L4 pgs. 86-94, LA 4A, SIS 4A, AOS; L6 pgs. 124-133, SIS 6B, SA <b>SR:</b> pgs. 2-3, 10-12, 15 <b>Digital Resources:</b> IWB: Our Ideas About Light and Sound; IWB: Our Plan to Study Vibrations; IWB: How Do We Communicate with Sound and Light? SIM: Vibrations; SIM: Illuminate Objects
<b>1-PS4-3.</b> Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.	<b><u>Light and Sound Waves</u></b> <b>TG:</b> L5 pgs. 100-111, SIS 5A.1, SIS 5A.2, LA 5B, SIS 5B, THS, AOS; L6 pgs. 124-133, SIS 6B, SA <b>SR:</b> pgs. 2-9 <b>Digital Resources:</b> IWB: Does Light Pass Through? IWB: Reflection of Light; IWB: How Do We Communicate with Sound and Light? SIM: Translucent, Transparent, Opaque; SIM: Law of Reflection
<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.	<b><u>Light and Sound Waves</u></b> <b>TG:</b> L6 pgs. 124-133, SIS 6B, SA <b>Digital Resources:</b> IWB: How Do We Communicate with Sound and Light?

## 1. Structure, Function, and Information Processing

Performance Expectation	Correlation to Building Blocks of Science 3D
<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><u>Exploring Organisms</u></b> <b>TG:</b> L1 pgs. 32-46, SIS 1B, SIS 1D, AOS; L2 pgs. 52-66, SIS 2A, LA 2C, SIS 2C, AOS; L5 pgs. 114-125, SIS 5A, SIS 5B, SA <b>SR:</b> pgs. 2, 6, 11-13 <b>Digital Resources:</b> IWB: Animal and Plant Needs; IWB: Living vs. Nonliving
<b>1-LS1-2.</b> Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.	<b><u>Exploring Organisms</u></b> <b>TG:</b> L3 pgs. 74-80, LA 3A, SIS 3A, AOS <b>SR:</b> pgs. 3-5, 7 <b>Digital Resources:</b> IWB: Ways Parents Care for Babies
<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><u>Exploring Organisms</u></b> <b>TG:</b> L4 pgs. 92-104, SIS 4A, SIS 4B, THS, LA 4C, AOS <b>SR:</b> pgs. 8-10 <b>Digital Resources:</b> SIM: Factors of Plant Growth, Part 1; SIM: Organism Growth

**TG**—Teacher’s Guide; **AOS**—Assessment Observation Sheet; **SIS**—Student Investigation Sheet; **TS**—Teacher Sheet; **SR**—Student Reader **SIM**—Simulation; **IWB**—Interactive Whiteboard; **LA**—Literacy Article; **L&S**—Literacy and Science **THS**—Take-Home Science Activity; **SA**—Summative Assessment

1. Space Systems: Patterns and Cycles	
Performance Expectation	Correlation to Building Blocks of Science 3D
<b>1-ESS1-1.</b> Use observations of the sun, moon, and stars to describe patterns that can be predicted.	<p><b><u>Sky Watchers</u></b>  <b>TG:</b> L1 pgs. 32-45, SIS 1B, SIS 1C, THS, AOS; L2 pgs. 60-70, LA 2A, SIS 2B, AOS, TS 2A; L4 pgs. 100-111, LA 4A, SIS 4A, SIS 4B, AOS, TS 4A, TS 4B; L5 pgs. 124-131, SIS 5A, SA  <b>SR:</b> pgs. 2-14  <b>Digital Resources:</b> IWB: Our Ideas About Objects in the Sky; IWB: Where Can the Sun Be Seen? IWB: Comparing Daytime and Nighttime Sky Patterns; IWB: Why We Have Day and Night; IWB: Phases of the Moon; IWB: What We Know About Objects in the Sky; SIM: Daytime/Nighttime; SIM: Shadows; SIM: Earth's Rotation; SIM: Phases of the Moon; SIM: Sun, Earth, Moon</p>
<b>1-ESS1-2.</b> Make observations at different times of year to relate the amount of daylight to the time of year.	<p><b><u>Sky Watchers</u></b>  <b>TG:</b> L3 pgs. 80-90, SIS 3A, LA 3B, SIS 3B, AOS; L5 pgs. 124-131, SIS 5A, SA  <b>SR:</b> pgs. 2-14  <b>Digital Resources:</b> IWB: Our Ideas About Objects in the Sky; IWB: Where Can the Sun Be Seen? IWB: Comparing Daytime and Nighttime Sky Patterns; IWB: Seasons; IWB: Our Plan to Investigate Daylight Patterns; IWB: Sunrise and Sunset Data; IWB: What We Know About Objects in the Sky; SIM: Earth's Revolution</p>
K–2 Engineering, Technology, and Applications of Science	
Performance Expectation	Correlation to Building Blocks of Science 3D
<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><b><u>Light and Sound Waves</u></b>  <b>TG:</b> L6 pgs. 124-133, SIS 6B, SA  <b>Digital Resources:</b> IWB: How Do We Communicate with Sound and Light?</p>
<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.	<p><b><u>Light and Sound Waves</u></b>  <b>TG:</b> L6 pgs. 124-133, SIS 6B, SA  <b>Digital Resources:</b> IWB: How Do We Communicate with Sound and Light?</p> <p><b><u>Exploring Organisms</u></b>  <b>TG:</b> L5 pgs. 114-125, SIS 5A, SIS 5B, SA  <b>SR:</b> pgs. 11-13</p>

## GRADE 2

## 2. Structure and Properties of Matter

Performance Expectation	Correlation to Building Blocks of Science 3D
<b>2-PS1-1.</b> Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.	<p><b><u>Matter</u></b>  <b>TG:</b> L2 pgs. 50-67, SIS 2A, LA 2C, AOS; L3 pgs. 72-82, LA 3C, SIS 3C, AOS  <b>SR:</b> pgs. 2-6, 8-11, 13  <b>Digital Resources:</b> IWB: Water’s Three States of Matter; IWB: Describing Properties; SIM: Water Conservation; SIM: Matter Particles, SIM: Create a Mixture</p> <p><b><u>Earth Materials</u></b>  <b>TG:</b> L2 pgs. 64-77, LA 2A, SIS 2A, SIS 2B, THS, AOS  <b>SR:</b> pgs. 6-7, 10-14  <b>Digital Resources:</b> IWB: What We Can Observe About Rocks? IWB: What We Can Observe About Landforms; SIM: Formation of Rock Types</p>
<b>2-PS1-2.</b> Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.	<p><b><u>Matter</u></b>  <b>TG:</b> L4 pgs. 90-100, SIS 4A, LA 4B, SIS 4B, AOS; L5 pgs. 116-130, SIS 5A, SIS 5B, SIS 5C, THS, SA  <b>SR:</b> pgs. 6, 12  <b>Digital Resources:</b> IWB: Materials and How We Use Them; SIM: Sink or Float? SIM: Identity Change; SIM: Physical Change</p>
<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 object.	<p><b><u>Matter</u></b>  <b>TG:</b> L1 pgs. 32-41, SIS 1A, SIS 1B, AOS  <b>SR:</b> pg. 7  <b>Digital Resources:</b> IWB: Specifications to Build a Pyramid; SIM: Parts Make a Whole</p>
<b>2-PS1-4.</b> Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.	<p><b><u>Matter</u></b>  <b>TG:</b> L2 pgs. 50-67, SIS 2A, LA 2C, AOS; L5 pgs. 116-130, SIS 5A, SIS 5B, SIS 5C, THS, SA  <b>SR:</b> pgs. 2-6, 8-12  <b>Digital Resources:</b> IWB: Water’s Three States of Matter; SIM: Water Conservation; SIM: Matter Particles; SIM: Identity Change; SIM: Physical Change</p>

**TG**–Teacher’s Guide; **AOS**–Assessment Observation Sheet; **SIS**–Student Investigation Sheet; **TS**–Teacher Sheet; **SR**–Student Reader **SIM**–Simulation; **IWB**–Interactive Whiteboard; **LA**–Literacy Article; **L&S**–Literacy and Science **THS**–Take-Home Science Activity; **SA**–Summative Assessment

## 2. Interdependent Relationships in Ecosystems

Performance Expectation	Correlation to Building Blocks of Science 3D
<p><b>2-LS2-1.</b> Plan and conduct an investigation to determine if plants need sunlight and water to grow.</p>	<p><b><i>Ecosystem Diversity</i></b>  <b>TG:</b> L1 pgs. 32-45, L&amp;S 1B, SIS 1C, AOS, TS 1B  <b>SR:</b> pgs. 2-13  <b>Digital Resources:</b> IWB: Living Things Matrix; IWB: Basic Needs of Living Things Map</p>
<p><b>2-LS2-2.</b> Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.</p>	<p><b><i>Ecosystem Diversity</i></b>  <b>TG:</b> L3 pgs. 74-82, L&amp;S 3A, LA 3B, AOS  <b>Digital Resources:</b> SIM: Bee Pollination</p>
<p><b>2-LS4-1.</b> Make observations of plants and animals to compare the diversity of life in different habitats.</p>	<p><b><i>Ecosystem Diversity</i></b>  <b>TG:</b> L1 pgs. 32-45, L&amp;S 1B, SIS 1C, AOS, TS 1B; L2 pgs. 54-62, LA 2B, SIS 2B.1, SIS 2B.2, AOS, TS 2A; L4 pgs. 88-101, LA 4A, SIS 4A, THS, AOS; L5 pgs. 112-119, L&amp;S 5A, SIS 5A, SA  <b>SR:</b> pgs. 2-13  <b>Digital Resources:</b> IWB: Living Things Matrix; IWB: Basic Needs of Living Things Map; IWB: Pill Bug Preferences; SIM: Factors of Plant Growth; Part 1; SIM: Plant Life Cycle; SIM: Pollution</p>

## 2. Earth's Systems: Processes that Shape the Earth

Performance Expectation	Correlation to Building Blocks of Science 3D
<p><b>2-ESS1-1.</b> Use information from several sources to provide evidence that Earth events can occur quickly or slowly.</p>	<p><b>Earth Materials</b>  <b>TG:</b> L2 pgs. 64-77, LA 2A, SIS 2A, SIS 2B, THS, AOS; L3 pgs. 96-112, L&amp;S 3A, LA 3B, SIS 3C.1, SIS 3C.2, AOS; L4 pgs. 132-144, LA 4A, SIS 4B, L&amp;S 4C, AOS, TS 4A; L5 pgs. 158-175, SIS 5A, LA 5B, SIS 5B, AOS; L6 pgs. 192-201, SIS 6A, SIS 6B, SA  <b>SR:</b> pgs. 2-15  <b>Digital Resources:</b> IWB: What We Can Observe About Rocks? IWB: What We Can Observe About Landforms; IWB: Our Ideas About Sand; IWB: Properties of Dry and Wet Sand; IWB: Our Ideas About Soil; IWB: Comparing Sand and Soil; IWB: Changes to the Land; IWB: Landforms and Bodies of Water; IWB: Our Ideas About Earth Materials; IWB: What We Know About Earth's Materials; SIM: Formation of Rock Types; SIM: Erosion; SIM: Weathering; SIM: Soil Erosion; SIM: Canyon Formation; SIM: Glacier Formation</p>
<p><b>2-ESS2-1.</b> Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.</p>	<p><b>Earth Materials</b>  <b>TG:</b> L3 pgs. 96-112, L&amp;S 3A, LA 3B, SIS 3C.1, SIS 3C.2, AOS; L4 pgs. 132-144, LA 4A, SIS 4B, L&amp;S 4C, AOS, TS 4A; L5 pgs. 158-175, SIS 5A, LA 5B, SIS 5B, AOS; L6 pgs. 192-201, SIS 6A, SIS 6B, SA  <b>SR:</b> pgs. 2-5, 7-15  <b>Digital Resources:</b> IWB: Our Ideas About Sand; IWB: Properties of Dry and Wet Sand; IWB: Our Ideas About Soil; IWB: Comparing Sand and Soil; IWB: Changes to the Land; IWB: Landforms and Bodies of Water; IWB: Our Ideas About Earth's Materials; IWB: What We Know About Earth's Materials; SIM: Erosion; SIM: Weathering; SIM: Soil Erosion; SIM: Canyon Formation; SIM: Glacier Formation</p>
<p><b>2-ESS2-2.</b> Develop a model to represent the shapes and kinds of land and bodies of water in an area.</p>	<p><b>Earth Materials</b>  <b>TG:</b> L1 pgs. 34-50, SIS 1B, SIS 1C.1, SIS 1C.2, SIS 1D.2, AOS; L6 pgs. 192-201, SIS 6A, SIS 6B, SA  <b>SR:</b> pgs. 2-5, 8-9, 13, 15  <b>Digital Resources:</b> IWB: Our Ideas About Earth's Materials; IWB: What We Know About Water; IWB: What We Know About Earth's Materials; SIM: Water Cycle</p>
<p><b>2-ESS2-3.</b> Obtain information to identify where water is found on Earth and that it can be solid or liquid.</p>	<p><b>Earth Materials</b>  <b>TG:</b> L1 pgs. 34-50, SIS 1B, SIS 1C.1, SIS 1C.2, SIS 1D.2, AOS; L5 pgs. 158-175, SIS 5A, LA 5B, SIS 5B, AOS; L6 pgs. 192-201, SIS 6A, SIS 6B, SA  <b>SR:</b> pgs. 2-5, 8-13, 15  <b>Digital Resources:</b> IWB: Our Ideas About Earth's Materials; IWB: What We Know About Water; IWB: Changes to the Land; IWB: Landforms and Bodies of Water; IWB: What We Know About Earth's Materials; SIM: Water Cycle; SIM: Canyon Formation; SIM: Glacier Formation</p>

**TG**—Teacher's Guide; **AOS**—Assessment Observation Sheet; **SIS**—Student Investigation Sheet; **TS**—Teacher Sheet; **SR**—Student Reader **SIM**—Simulation; **IWB**—Interactive Whiteboard; **LA**—Literacy Article; **L&S**—Literacy and Science **THS**—Take-Home Science Activity; **SA**—Summative Assessment

## K–2 Engineering, Technology, and Applications of Science

### Performance Expectation

### Correlation to Building Blocks of Science 3D

**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.

**Earth Materials**  
**TG:** L3 pgs. 96-112, L&S 3A, LA 3B, SIS 3C.1, SIS 3C.2, AOS; L4 pgs. 132-144, LA 4A, SIS 4B, L&S 4C, AOS, TS 4A  
**SR:** pgs. 7, 12-13  
**Digital Resources:** IWB: Our Ideas About Sand; IWB: Properties of Dry and Wet Sand; IWB: Our Ideas About Soil; IWB: Comparing Sand and Soil; SIM: Erosion; SIM: Weathering; SIM: Soil Erosion

**Matter**  
**TG:** L5 pgs. 116-130, SIS 5A, SIS 5B, SIS 5C, THS, SA  
**SR:** pg. 12  
**Digital Resources:** SIM: Identity Change; SIM: Physical Change

**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.

**Earth Materials**  
**TG:** L3 pgs. 96-112, L&S 3A, LA 3B, SIS 3C.1, SIS 3C.2, AOS; L4 pgs. 132-144, LA 4A, SIS 4B, L&S 4C, AOS, TS 4A  
**SR:** pgs. 7, 12-13  
**Digital Resources:** IWB: Our Ideas About Sand; IWB: Properties of Dry and Wet Sand; IWB: Our Ideas About Soil; IWB: Comparing Sand and Soil; SIM: Erosion; SIM: Weathering; SIM: Soil Erosion

**Matter**  
**TG:** L1 pgs. 32-41, SIS 1A, SIS 1B, AOS  
**SR:** pg. 7  
**Digital Resources:** IWB: Specifications to Build a Pyramid; SIM: Parts Make a Whole

**Ecosystem Diversity**  
**TG:** L3 pgs. 74-82, L&S 3A, LA 3B, AOS; L5 pgs. 112-119, L&S 5A, SIS 5A, SA  
**Digital Resources:** SIM: Bee Pollination; SIM: Pollution

**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.

**Ecosystem Diversity**  
**TG:** L4 pgs. 88-101, LA 4A, SIS 4A, THS, AOS  
**Digital Resources:** IWB: Pill Bug Preferences

## GRADE 3

## 3. Forces and Interactions

Performance Expectation	Correlation to Building Blocks of Science 3D
<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.	<b><u>Forces and Interactions</u></b> <b>TG:</b> L1 pgs. 32-48, SIS 1A, SIS 1C; L2 pgs. 54-70, SIS 2A, SIS 2B, LA 2C, SIS 2C <b>SR:</b> pgs. 4-5, 7-8 <b>Digital Resources:</b> SIM: Balance; SIM: Balance an Unknown; SIM: Tug-of-War; SIM: Friction; SIM: Rolling Car; SIM: Spring Scale
<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.	<b><u>Forces and Interactions</u></b> <b>TG:</b> L2 pgs. 54-70, SIS 2A, SIS 2B, LA 2C, SIS 2C; L3 pgs. 86-98, SIS 3A, LA 3B, SIS 3B, SIS 3C <b>SR:</b> pgs. 2-3, 5-7, 10-11 <b>Digital Resources:</b> SIM: Friction; SIM: Rolling Car; SIM: Spring Scale; SIM: Force, Motion, Speed
<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.	<b><u>Forces and Interactions</u></b> <b>TG:</b> L4 pgs. 112-129, SIS 4B, LA 4C, SIS 4C.1, SIS 4C.2, SIS 4D.1, SIS 4D.2, THS <b>SR:</b> pg. 9 <b>Digital Resources:</b> IWB: Which Objects Are Magnetic? SIM: Magnetic Attraction and Repulsion; SIM: Iron Fillings
<b>3-PS2-4.</b> Define a simple design problem that can be solved by applying scientific ideas and magnets.	<b><u>Forces and Interactions</u></b> <b>TG:</b> L5 pgs. 152-159, SIS 5B, SA <b>Digital Resources:</b> SIM: Newton's First Law; SIM: Newton's Third Law

## 3. Interdependent Relationships in Ecosystems

Performance Expectation	Correlation to Building Blocks of Science 3D
<b>3-LS2-1.</b> Construct an argument that some animals form groups that help members survive.	<b><u>Life in Ecosystems</u></b> <b>TG:</b> L1 pgs. 32-51, SIS 1A, SIS 1B.1, SIS 1B.2, SIS 1B.3, SIS 1C <b>SR:</b> pgs. 2-3, 15 <b>Digital Resources:</b> IWB: Our School as a Model of an Ecosystem; IWB: How Do We Categorize an Ecosystem? IWB: Predictions About Our Plants and Butterflies; IWB: Life Cycles of Plant and Butterfly
<b>3-LS4-1.</b> Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.	<b><u>Life in Ecosystems</u></b> <b>TG:</b> L4 pgs. 130-145, LA 4A, SIS 4A, SIS 4B.1, SIS 4B.2, SIS 4B.3 <b>SR:</b> pgs. 12-13, 15 <b>Digital Resources:</b> IWB: Environmental Factors and Plant Growth (from Lesson 3); IWB: Organisms' Needs; SIM: Phototropism; SIM: Fossil Formation
<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.	<b><u>Life in Ecosystems</u></b> <b>TG:</b> L4 pgs. 130-145, LA 4A, SIS 4A, SIS 4B.1, SIS 4B.2, SIS 4B.3; L5 pgs. 168-178, SIS 5B, SA, TS 5B.1, TS 5B.2 <b>SR:</b> pgs. 2-5, 12-13, 15 <b>Digital Resources:</b> IWB: Environmental Factors and Plant Growth (from Lesson 3); IWB: Organisms' Needs; IWB: Ecosystem Chart (from Lesson 1); IWB: Ecosystem Interactions; SIM: Phototropism; SIM: Fossil Formation; SIM: Coral Reef
<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><u>Life in Ecosystems</u></b> <b>TG:</b> L5 pgs. 168-178, SIS 5B, SA, TS 5B.1, TS 5B.2 <b>SR:</b> pgs. 2-5, 15 <b>Digital Resources:</b> IWB: Ecosystem Chart (from Lesson 1); IWB: Ecosystem Interactions; SIM: Coral Reef

### 3. Inheritance and Variation of Traits: Life Cycles and Traits

Performance Expectation	Correlation to Building Blocks of Science 3D
<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.	<b><i>Life in Ecosystems</i></b> <b>TG:</b> L1 pgs. 32-51, SIS 1A, SIS 1B.1, SIS 1B.2, SIS 1B.3, SIS 1C <b>SR:</b> pgs. 2-3, 15 <b>Digital Resources:</b> IWB: Our School as a Model of an Ecosystem; IWB: How Do We Categorize an Ecosystem? IWB: Predictions About Our Plants and Butterflies; IWB: Life Cycles of Plant and Butterfly
<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.	<b><i>Life in Ecosystems</i></b> <b>TG:</b> L2 pgs. 68-80, LA 2A, SIS 2A, SIS 2B <b>SR:</b> pgs. 10-11 <b>Digital Resources:</b> IWB: Class Inherited Traits; SIM: Trait Variation
<b>3-LS3-2.</b> Use evidence to support the explanation that traits can be influenced by the environment.	<b><i>Life in Ecosystems</i></b> <b>TG:</b> L4 pgs. 130-145, LA 4A, SIS 4A, SIS 4B.1, SIS 4B.2, SIS 4B.3 <b>SR:</b> pgs. 12-13, 15 <b>Digital Resources:</b> IWB: Environmental Factors and Plant Growth (from Lesson 3); IWB: Organisms' Needs; SIM: Phototropism; SIM: Fossil Formation
<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><i>Life in Ecosystems</i></b> <b>TG:</b> L3 pgs. 90-108, SIS 3A, SIS 3B, THS, LA 3C, SIS 3C, TS 3B.1, TS 3B.2; L5 pgs. 168-178, SIS 5B, SA, TS 5B.1, TS 5B.2 <b>SR:</b> pgs. 2-15 <b>Digital Resources:</b> IWB: Adaptations; IWB: Environmental Factors and Plant Growth; IWB: Predator-Prey; IWB: Ecosystem Chart (from Lesson 1); IWB: Ecosystem Interactions; SIM: Beak Simulation; SIM: Coral Reef

**TG**—Teacher’s Guide; **AOS**—Assessment Observation Sheet; **SIS**—Student Investigation Sheet; **TS**—Teacher Sheet; **SR**—Student Reader **SIM**—Simulation; **IWB**—Interactive Whiteboard; **LA**—Literacy Article; **L&S**—Literacy and Science **THS**—Take-Home Science Activity; **SA**—Summative Assessment

3. Weather and Climate	
Performance Expectation	Correlation to Building Blocks of Science 3D
<b>3-ESS2-1.</b> Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.	<p><b><u>Weather and Climate Patterns</u></b>  <b>TG:</b> L1 pgs. 32-46, SIS 1A, SIS 1B, SIS 1C, THS; L2 pgs. 66-76, L&amp;S 2A, SIS 2A, LA 2B, SIS 2B  <b>SR:</b> pgs. 2-9, 14-15  <b>Digital Resources:</b> IWB: Our Ideas About Weather; IWB: Seasons; SIM: Air Pressure; SIM: Earth’s Revolution; SIM: Earth’s Rotation; SIM: Rain Gauge; SIM: Precipitation; SIM: Water Vapor</p>
<b>3-ESS2-2.</b> Obtain and combine information to describe climates in different regions of the world.	<p><b><u>Weather and Climate Patterns</u></b>  <b>TG:</b> L3 pgs. 102-116, LA 3A, SIS 3A, SIS 3B, SIS 3C; L4 pgs. 144-154, LA 4A, SIS 4A, SIS 4B.1, SIS 4B.2, TS 4A  <b>SR:</b> pgs. 10-13  <b>Digital Resources:</b> IWB: Our Ideas About Climate; IWB: Weather Hazards; SIM: Earth’s Rotation; SIM: Earth’s Revolution; SIM: Land Breezes and Sea Breezes; SIM: Air Circulation; SIM: Air Pressure; SIM: Coriolis Effect</p>
<b>3-ESS3-1.</b> Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.	<p><b><u>Weather and Climate Patterns</u></b>  <b>TG:</b> L5 pgs. 172-183, SIS 5A, TS 5A, SIS 5B.1, SIS 5B.2, SA, TS 5B.1, TS 5B.2  <b>Digital Resources:</b> IWB: Impacts of Weather Hazards, IWB: Our Ideas About Weather (from Lesson 1), IWB: Our Ideas About Climate (from Lesson 3), IWB: What We Know About Weather and Climate</p>
3–5 Engineering, Technology, and Applications of Science	
<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><b><u>Forces and Interactions</u></b>  <b>TG:</b> L5 pgs. 152-159, SIS 5B, SA  <b>Digital Resources:</b> SIM: Newton’s First Law; SIM: Newton’s Third Law</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><u>Forces and Interactions</u></b>  <b>TG:</b> L4 pgs. 112-129, SIS 4B, LA 4C, SIS 4C.1, SIS 4C.2, SIS 4D.1, SIS 4D.2, THS  <b>SR:</b> pg. 9  <b>Digital Resources:</b> IWB: Which Objects Are Magnetic? SIM: Magnetic Attraction and Repulsion; SIM: Iron Fillings</p> <p><b><u>Life In Ecosystems</u></b>  <b>TG:</b> L5 pgs. 168-178, SIS 5B, SA  <b>SR:</b> pgs. 2-5, 15  <b>Digital Resources:</b> IWB: Ecosystem Chart (from Lesson 1); IWB: Ecosystems Interactions; SIM: Coral Reef</p> <p><b><u>Weather and Climate Patterns</u></b>  <b>TG:</b> L5 pgs. 172-183, SIS 5A, TS 5A, SIS 5B.1, SIS 5B.2, SA  <b>Digital Resources:</b> IWB: Impacts of Weather Hazards; IWB: Our Ideas About Weather (from Lesson 1); IWB: Our Ideas About Climate (from Lesson 3); IWB: What We Know About Weather and Climate</p>

## GRADE 4

4. Energy	
Performance Expectation	Correlation to Building Blocks of Science 3D
<b>4-PS3-1.</b> Use evidence to construct an explanation relating the speed of an object to the energy of that object.	<p><b><u>Energy Works</u></b>  <b>TG:</b> L2 pgs. 48-63, LA 2A, SIS 2A, SIS 2B, SIS 2C  <b>SR:</b> pgs. 6-9  <b>Digital Resources:</b> IWB: Exploring Stored and Motion Energy; SIM: Stored and Motion Energy; SIM: Ping-Pong Ball Energy; SIM: Energy Transfer</p>
<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.	<p><b><u>Energy Works</u></b>  <b>TG:</b> L1 pgs. 34-44, SIS 1B; L3 pgs. 88-102, LA 3A, SIS 3A, SIS 3C.1, SIS 3C.2, SIS 3C.3; L5 pgs. 168-182, LA 5A, SIS 5B, SIS 5C, THS; L6 pgs. 208-216, SIS 6A, SA  <b>SR:</b> pgs. 2-5, 8-14  <b>Digital Resources:</b> IWB: Where Do You Get Your Energy? IWB: Energy Transfers and Transformations; IWB: Bulbs and Batteries, Mystery Box, and Solar Cells; IWB: Alternative Energy; IWB: My Energy Experiment; SIM: Building a Circuit; SIM: Solar Cells; SIM: Wind Turbine; SIM: Waterwheel</p>
<b>4-PS3-3.</b> Ask questions and predict outcomes about the changes in energy that occur when objects collide.	<p><b><u>Energy Works</u></b>  <b>TG:</b> L2 pgs. 48-63, LA 2A, SIS 2A, SIS 2B, SIS 2C; L4 pgs. 128-142, SIS 4A, SIS 4B.1, SIS 4B.2, LA 4C, SIS 4C, SIS 4D  <b>SR:</b> pgs. 6-9  <b>Digital Resources:</b> IWB: Exploring Stored and Motion Energy; IWB: Let's Find Out About Water Waves; SIM: Stored and Motion Energy; SIM: Ping-Pong Ball Energy; SIM: Energy Transfer; SIM: Wind Waves; SIM: Marble Waves; SIM: Morse Code Demo</p>
<b>4-PS3-4.</b> Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.	<p><b><u>Energy Works</u></b>  <b>TG:</b> L6 pgs. 208-216, SIS 6A, SA  <b>Digital Resources:</b> IWB: My Energy Experiment</p>
4. Waves: Waves and Information Transfer	
Performance Expectation	Correlation to Building Blocks of Science 3D
<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.	<p><b><u>Energy Works</u></b>  <b>TG:</b> L4 pgs. 128-142, SIS 4A, SIS 4B.1, SIS 4B.2, LA 4C, SIS 4C, SIS 4D  <b>Digital Resources:</b> IWB: Let's Find Out About Water Waves; SIM: Wind Waves; SIM: Marble Waves; SIM: Morse Code Demo</p>
<b>4-PS4-3.</b> Generate and compare multiple solutions that use patterns to transfer information.	<p><b><u>Energy Works</u></b>  <b>TG:</b> L4 pgs. 128-142, SIS 4A, SIS 4B.1, SIS 4B.2, LA 4C, SIS 4C, SIS 4D  <b>Digital Resources:</b> IWB: Let's Find Out About Water Waves; SIM: Wind Waves; SIM: Marble Waves; SIM: Morse Code Demo</p>

**TG**—Teacher’s Guide; **AOS**—Assessment Observation Sheet; **SIS**—Student Investigation Sheet; **TS**—Teacher Sheet; **SR**—Student Reader **SIM**—Simulation; **IWB**—Interactive Whiteboard; **LA**—Literacy Article; **L&S**—Literacy and Science **THS**—Take-Home Science Activity; **SA**—Summative Assessment

#### 4. Structure, Function, and Information Processing

##### Performance Expectation

##### Correlation to Building Blocks of Science 3D

**4-PS4-2.** Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.

##### Plant and Animal Structures

**TG:** L6 pgs. 176-182, SIS 6A.1, SIS 6A.2, SA

**4-LS1-1.** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

##### Plant and Animal Structures

**TG:** L1 pgs. 34-43, SIS 1A, SIS 1B; L2 pgs. 48-64, L&S 2A, SIS 2A, LA 2B, SIS 2B.1, SIS 2B.2, TS 2A; L3 pgs. 84-100, SIS 3A, LA 3B, SIS 3C, SIS 3D, THS; L4 pgs. 118-131, SIS 4A.1, SIS 4A.2, LA 4B, SIS 4B, SIS 4C; L5 pgs. 152-168, LA 5A, SIS 5A, TS 5C; L6 pgs. 176-182, SIS 6A.1, SIS 6A.2, SA  
**SR:** 2-13

**Digital Resources:** IWB: Plant and Animal Structures; IWB: Thinking About Internal Animal Structures; IWB: Vertebrates and Invertebrates; IWB: Information Processing; IWB: What Eye Know; SIM: Factors of Plant Growth, Part 2; SIM: Plant Life Cycle; SIM: Bee Pollination; SIM: Information Processing; SIM: Reaction Time Test; SIM: Pupil Size

**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.

##### Plant and Animal Structures

**TG:** L4 pgs. 118-131, SIS 4A.1, SIS 4A.2, LA 4B, SIS 4B, SIS 4C; L5 pgs. 152-168, LA 5A, SIS 5A, TS 5C; L6 pgs. 176-182, SIS 6A.1, SIS 6A.2, SA  
**SR:** 6-7

**Digital Resources:** IWB: Information Processing; IWB: What Eye Know; SIM: Information Processing; SIM: Reaction Time Test; SIM: Pupil Size

#### 4. Earth's Systems: Processes That Shape the Earth

##### Performance Expectation

##### Correlation to Building Blocks of Science 3D

**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.

##### Changing Earth

**TG:** L2 pgs. 48-59, LA 2A, SIS 2A, SIS 2B, SIS 2C; L5 pgs. 98-108, LA 5A  
**SR:** pgs. 16-21

**Digital Resources:** IWB: Fossils and Their Formation; SIM: Formation of Rock Types; SIM: Rock Cycle; SIM: Rock Strata; SIM: Fossil Formation

**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.

##### Changing Earth

**TG:** L3 pgs. 66-75, LA 3A, SIS 3A, THS; L6 pgs. 112-121, SIS 6A, SIS 6B, SA, TS 6C

**SR:** pgs. 12-15

**Digital Resources:** IWB: Weathering and Erosion; IWB: Our Earth; SIM: Canyon Formation; SIM: Soil Erosion

**4-ESS2-2.** Analyze and interpret data from maps to describe patterns of Earth's features.

##### Changing Earth

**TG:** L1 pgs. 34-44, SIS 1B, TS 1C; L2 pgs. 48-59, LA 2A, SIS 2A, SIS 2B, SIS 2C; L3 pgs. 66-75, LA 3A, SIS 3A, THS; L4 pgs. 86-93, LA 4A, SIS 4A, SIS 4B  
**SR:** pgs. 2-21

**Digital Resources:** IWB: Our Earth; IWB: Weathering and Erosion; SIM: Earth's Layers; SIM: Magma Convection; SIM: Formation of Rock Types; SIM: Rock Cycle; SIM: Canyon Formation

**4-ESS3-1.** Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

##### Energy Works

**TG:** L5 pgs. 168-182, LA 5A, SIS 5B, SIS 5C, THS

**SR:** pgs. 10-14

**Digital Resources:** IWB: Alternative Energy; SIM: Wind Turbine; SIM: Waterwheel

**4-ESS3-2.** Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

##### Changing Earth

**TG:** L6 pgs. 112-121, SIS 6A, SIS 6B, SA, TS 6C

**Digital Resources:** IWB: Our Earth; SIM: Soil Erosion

3–5 Engineering, Technology, and Applications of Science	
Performance Expectation	Correlation to Building Blocks of Science 3D
<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><u>Energy Works</u></b>  <b>TG:</b> L6 pgs. 208-216, SIS 6A, SA  <b>Digital Resources:</b> IWB: My Energy Experiment</p> <p><b><u>Plant and Animal Structures</u></b>  <b>TG:</b> L6 pgs. 176-182, SIS 6A.1, SIS 6A.2, SA</p> <p><b><u>Changing Earth</u></b>  <b>TG:</b> L6 pgs. 112-121, SIS 6A, SIS 6B, SA, TS 6C  <b>Digital Resources:</b> IWB: Our Earth; SIM: Soil Erosion</p>
	<p><b>3-5-EST1-3.</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>

**TG**—Teacher’s Guide; **AOS**—Assessment Observation Sheet; **SIS**—Student Investigation Sheet; **TS**—Teacher Sheet; **SR**—Student Reader **SIM**—Simulation; **IWB**—Interactive Whiteboard; **LA**—Literacy Article; **L&S**—Literacy and Science **THS**—Take-Home Science Activity; **SA**—Summative Assessment

## GRADE 5

## 5. Structure and Properties of Matter

Performance Expectation	Correlation to Building Blocks of Science 3D
<b>5-PS1-1.</b> Develop a model to describe that matter is made of particles too small to be seen.	<b><u>Structure and Properties of Matter</u></b> <b>TG:</b> L2 pgs. 62-76, SIS 2A, LA 2B, SIS 2B, SIS 2C; L6 pgs. 170-179, SIS 6A, SA <b>SR:</b> pgs. 6-7, 21 <b>Digital Resources:</b> SIM: Particle Attraction; SIM: States of Water
<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.	<b><u>Structure and Properties of Matter</u></b> <b>TG:</b> L2 pgs. 62-76, SIS 2A, LA 2B, SIS 2B, SIS 2C; L6 pgs. 170-179, SIS 6A, SA <b>SR:</b> pgs. 6-7, 21 <b>Digital Resources:</b> SIM: Particle Attraction; SIM: States of Water
<b>5-PS1-3.</b> Make observations and measurements to identify materials based on their properties.	<b><u>Structure and Properties of Matter</u></b> <b>TG:</b> L1 pgs. 34-48, SIS 1B, SIS 1C, THS; L2 pgs. 62-76, SIS 2A, LA 2B, SIS 2B, SIS 2C; L3 pgs. 92-101, LA 3A, SIS 3A, SIS 3B.1, SIS 3B.2; L6 pgs. 170-179, SIS 6A, SA <b>SR:</b> pgs. 2-13, 21 <b>Digital Resources:</b> IWB: Our Ideas and Questions About Matter; SIM: Balloon Properties; SIM: Displacement; SIM: Volume and Mass; SIM: Particle Attraction; SIM: States of Water; SIM: Hardness, Buoyancy, Magnetism; SIM: Layering by Density; SIM: Viscosity Racetrack
<b>5-PS1-4.</b> Conduct an investigation to determine whether the mixing of two or more substances results in new substances.	<b><u>Structure and Properties of Matter</u></b> <b>TG:</b> L4 pgs. 116-128, SIS 4A, LA 4B, SIS 4B, SIS 4C; L5 pgs. 148-159, SIS 5A, LA 5B, SIS 5B; L6 pgs. 170-179, SIS 6A, SA <b>SR:</b> pgs. 14-21 <b>Digital Resources:</b> IWB: Physical and Chemical Changes; SIM: Create a Mixture; SIM: Chemical Reactions

## 5. Matter and Energy in Organisms and Ecosystems

Performance Expectation	Correlation to Building Blocks of Science 3D
<b>5-PS3-1.</b> 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.	<b><u>Matter and Energy in Ecosystems</u></b> <b>TG:</b> L2 pgs. 58-69, SIS 2A, LA 2B, SIS 2B; L3 pgs. 78-88, SIS 3A, LA 3B, SIS 3B, THS, TS 3A <b>SR:</b> pgs. 12-17 <b>Digital Resources:</b> IWB: Food Chain; SIM: Competition; SIM: Energy Cycles
<b>5-LS1-1.</b> Support an argument that plants get the materials they need for growth chiefly from air and water.	<b><u>Matter and Energy in Ecosystems</u></b> <b>TG:</b> L1 pgs. 34-46, SIS 1B, SIS 1C <b>SR:</b> pgs. 6-9 <b>Digital Resources:</b> IWB: Biotic and Abiotic Factors; SIM: Photosynthesis; SIM: Factors of Plant Growth, Part 2
<b>5-LS2-1.</b> Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.	<b><u>Matter and Energy in Ecosystems</u></b> <b>TG:</b> L1 pgs. 34-46, SIS 1B, SIS 1C; L2 pgs. 58-69, SIS 2A, LA 2B, SIS 2B; L3 pgs. 78-88, SIS 3A, LA 3B, SIS 3B, THS, TS 3A; L4 pgs. 104-117, LA 4A, SIS 4A, SIS 4C, TS 4B; L5 pgs. 132-145, L&S 5A, LA 5A, SIS 5A, SIS 5B, SIS 5C, TS 5B; L6 pgs. 168-175, SIS 6A, SA <b>SR:</b> pgs. 2-9, 12-21 <b>Digital Resources:</b> IWB: Biotic and Abiotic Factors; IWB: Food Chain; IWB: The Four Spheres of Earth; IWB: Pollution; SIM: Photosynthesis; SIM: Factors of Plant Growth, Part 2; SIM: Competition; SIM: Energy Cycles; SIM: Water Cycle

## 5. Earth's Systems

Performance Expectation	Correlation to Building Blocks of Science 3D
<b>5-ESS2-1.</b> Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.	<p><b><u>Matter and Energy in Ecosystems</u></b>  <b>TG:</b> L4 pgs. 104-117, LA 4A, SIS 4A, SIS 4C, TS 4B; L5 pgs. 132-145, L&amp;S 5A, LA 5A, SIS 5A, SIS 5B, SIS 5C, TS 5B; L6 pgs. 168-175, SIS 6A, SA  <b>SR:</b> pgs. 2-5, 18-21  <b>Digital Resources:</b> IWB: The Four Spheres of Earth; IWB: Pollution; SIM: Water Cycle</p> <p><b><u>Earth and Space Systems</u></b>  <b>TG:</b> L4 pgs. 140-151, SIS 4A, LA 4B, SIS 4B, TS 4A, TS 4B  <b>SR:</b> pgs. 10-21, 23  <b>Digital Resources:</b> IWB: Water Cycle; SIM: Water Cycle</p>
<b>5-ESS2-2.</b> Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.	<p><b><u>Earth and Space Systems</u></b>  <b>TG:</b> L4 pgs. 140-151, SIS 4A, LA 4B, SIS 4B, TS 4A, TS 4B  <b>SR:</b> pgs. 10-21, 23  <b>Digital Resources:</b> IWB: Water Cycle; SIM: Water Cycle</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><b><u>Earth and Space Systems</u></b>  <b>TG:</b> L5 pgs. 176-186, SIS 5A, SA, TS 5A, TS 5B  <b>Digital Resources:</b> IWB: Human Impacts on Earth's Systems; IWB: Knowledge and Questions About Earth and Space Systems (from Lesson 1); IWB: What We Learned About Earth and Space Systems</p> <p><b><u>Matter and Energy in Ecosystems</u></b>  <b>TG:</b> L5 pgs. 132-145, L&amp;S 5A, LA 5A, SIS 5A, SIS 5B, SIS 5C, TS 5B; L6 pgs. 168-175, SIS 6A, SA  <b>SR:</b> pgs. 18-21  <b>Digital Resources:</b> IWB: Pollution</p>

## 5. Space Systems: Stars and the Solar System

Performance Expectation	Correlation to Building Blocks of Scienc 3D
<b>5-PS2-1.</b> Support an argument that the gravitational force exerted by Earth on objects is directed down.	<p><b><u>Earth and Space Systems</u></b>  <b>TG:</b> L1 pgs. 32-45, SIS 1B.1, SIS 1B.2, SIS 1C, TS 1B, TS 1C  <b>SR:</b> pgs. 2-3, 8-9  <b>Digital Resources:</b> IWB: Knowledge and Questions About Earth and Space Systems; SIM: Sun, Earth, Moon</p>
<b>5-ESS1-1.</b> Support an argument that the apparent brightness of the sun and stars is due to their relative distances from Earth.	<p><b><u>Earth and Space Systems</u></b>  <b>TG:</b> L2 pgs. 58-70, LA 2A, SIS 2A, SIS 2B, SIS 2C  <b>SR:</b> pgs. 4-5  <b>Digital Resources:</b> SIM: Earth's Rotation; SIM: Shadows</p>
<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.	<p><b><u>Earth and Space Systems</u></b>  <b>TG:</b> L2 pgs. 58-70, LA 2A, SIS 2A, SIS 2B, SIS 2C; L3 pgs. 90-104, LA 3A, SIS 3A.1, SIS 3A.2, SIS 3B, THS, TS 3A, TS 3C  <b>SR:</b> pgs. 4-9  <b>Digital Resources:</b> SIM: Earth's Rotation; SIM: Shadows; SIM: Earth's Revolution; SIM: Earth and Moon; SIM: Phases of the Moon</p>

**TG**—Teacher's Guide; **AOS**—Assessment Observation Sheet; **SIS**—Student Investigation Sheet; **TS**—Teacher Sheet; **SR**—Student Reader **SIM**—Simulation; **IWB**—Interactive Whiteboard; **LA**—Literacy Article; **L&S**—Literacy and Science **THS**—Take-Home Science Activity; **SA**—Summative Assessment

### 3–5 Engineering, Technology, and Applications of Science

#### Performance Expectation

**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.

**3-5-EST1-3.** 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.

#### Correlation to Building Blocks of Science 3D

##### **Structure and Properties of Matter**

**TG:** L2 pgs. 62-76, SIS 2A, LA 2B, SIS 2B, SIS 2C; L6 pgs. 170-179, SIS 6A, SA

**SR:** pgs. 6-7, 21

**Digital Resources:** SIM: Particle Attraction; SIM: States of Water

##### **Earth and Space Systems**

**TG:** L4 pgs. 140-151, SIS 4A, LA 4B, SIS 4B, TS 4A, TS 4B; L5 pgs. 176-186, SIS 5A, SA, TS 5A, TS 5B

**SR:** pgs. 10-21, 23

**Digital Resources:** IWB: Water Cycle, IWB: Human Impacts on Earth's Systems; IWB: Knowledge and Questions About Earth and Space Systems (from Lesson 1); IWB: What We Learned About Earth and Space Systems; SIM: Water Cycle

##### **Weather and Climate Patterns**

**TG:** L5 pgs. 172-183, SIS 5A, TS 5A, SIS 5B.1, SIS 5B.2, SA

**Digital Resources:** IWB: Impacts of Weather Hazards; IWB: Our Ideas About Weather (from Lesson 1); IWB: Our Ideas About Climate (from Lesson 3); IWB: What We Know About Weather and Climate

##### **Matter and Energy in Ecosystems**

**TG:** L6 pgs. 168-175, SIS 6A, SA

**TG**–Teacher’s Guide; **AOS**–Assessment Observation Sheet; **SIS**–Student Investigation Sheet; **TS**–Teacher Sheet; **SR**–Student Reader **SIM**–Simulation; **IWB**–Interactive Whiteboard; **LA**–Literacy Article; **L&S**–Literacy and Science **THS**–Take-Home Science Activity; **SA**–Summative Assessment







## Learning Framework

<b>Kindergarten</b>	<b>Push, Pull, Go</b> <i>K-PS2-1; K-PS2-2;            K-2-ETS1-1; K-2-ETS1-2</i>	<b>Living Things and Their Needs</b> <i>K-LS1-1; K-ESS2-2;            K-ESS3-1; K-ESS3-3;            K-2-ETS1-2</i>	<b>Weather and Sky</b> <i>K-PS3-1; K-PS3-2;            K-ESS2-1; K-ESS3-2;            K-2-ETS1-1; K-2-ETS1-2</i>
<b>1st Grade</b>	<b>Light and Sound Waves</b> <i>1-PS4-1; 1-PS4-2;            1-PS4-3; 1-PS4-4;            K-2-ETS1-1; K-2-ETS1-2</i>	<b>Exploring Organisms</b> <i>1-LS1-1; 1-LS1-2; 1-LS3-1;            K-2-ETS1-2</i>	<b>Sky Watchers</b> <i>1-ESS1-1; 1-ESS1-2</i>
<b>2nd Grade</b>	<b>Matter</b> <i>2-PS1-1; 2-PS1-2; 2-PS1-3;            2-PS1-4; K-2-ETS1-1;            K-2-ETS1-2</i>	<b>Ecosystem Diversity</b> <i>2-LS2-1; 2-LS2-2; 2-LS4-1;            K-2-ETS1-2; K-2-ETS1-3</i>	<b>Earth Materials</b> <i>2-PS1-1; 2-ESS1-1;            2-ESS2-1; 2-ESS2-2;            2-ESS2-3; K-2-ETS1-1;            K-2-ETS1-2</i>
<b>3rd Grade</b>	<b>Forces and Interactions</b> <i>3-PS2-1; 3-PS2-2;            3-PS2-3; 3-PS2-4;            3-5-ETS1-1; 3-5-ETS1-2</i>	<b>Life in Ecosystems</b> <i>3-LS1-1; 3-LS2-1; 3-LS3-1;            3-LS3-2; 3-LS4-1; 3-LS4-2;            3-LS4-3; 3-LS4-4;            3-5-ETS1-2</i>	<b>Weather and Climate Patterns</b> <i>3-ESS2-1; 3-ESS2-2;            3-ESS3-1; 3-5-ETS1-2</i>
<b>4th Grade</b>	<b>Energy Works</b> <i>4-PS3-1; 4-PS3-2; 4-PS3-3;            4-PS3-4; 4-PS4-1; 4-PS4-3;            4-ESS3-1; 3-5-ETS1-2;            3-5-ETS1-3</i>	<b>Plant and Animal Structures</b> <i>4-LS1-1; 4-LS1-2; 4-PS4-2;            3-5-ETS1-2</i>	<b>Changing Earth</b> <i>4-ESS1-1; 4-ESS2-1;            4-ESS2-2; 4-ESS3-2;            3-5-ETS1-2</i>
<b>5th Grade</b>	<b>Structure and Properties of Matter</b> <i>5-PS1-1; 5-PS1-2;            5-PS1-3; 5-PS1-4;            3-5-ETS1-2</i>	<b>Matter and Energy in Ecosystems</b> <i>5-PS3-1; 5-LS1-1; 5-LS2-1;            5-ESS2-1; 5-ESS3-1;            3-5-ETS1-3</i>	<b>Earth and Space Systems</b> <i>5-PS2-1; 5-ESS1-1;            5-ESS1-2; 5-ESS2-1;            5-ESS2-2; 5-ESS3-1;            3-5-ETS1-2</i>

Phenomenon-based investigations with digital support in 30-minute lessons!

For more information, visit [www.carolina.com/bbs](http://www.carolina.com/bbs)