

A Correlation of



©2016

To the

**Next Generation
Science Standards
November 2013**

Grades K-5

SAVVAS

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Grades K-5**

Introduction

This document demonstrates how **ReadyGEN, ©2016** meets the *Next Generation Science Standards*. Correlation references are to ReadyGEN reading selections that match the Topic Arrangements of the Next Generation Science Standards and are cited by grade level and unit. Reading selections are located in the ReadyGEN Trade Book Libraries, Text Collections, and in Sleuth.

ReadyGEN is a comprehensive, K-5 literacy curriculum of topically-related text sets and routines-based instruction. ReadyGEN is being created with the goal of equipping all teachers and students with the tools and practices necessary to meet the new expectations of the Common Core Standards and the Publisher's Criteria. Lessons are designed on the principles of the gradual release of responsibility framework with the goal of building independent readers and writers. At the heart of ReadyGEN is a reciprocity between reading and writing to promote student thinking and understanding through citation of text-based evidence. Students are taught to carefully analyze and synthesize sources, write to sources, and defend claims.

Program Organization

ReadyGEN is organized around unit modules (six units in grades K-2; four units in grades 3-5) with a focus on science and social studies standards-based topics. Text sets, comprised of full length and shorter authentic pieces of literary and informational trade books and texts, are used to build knowledge around these topics for sustained periods of time. All texts are aligned to the complexity requirements outlined in the Common Core Standards, ensuring that all students interact with appropriate grade-level texts. Teachers will have access to a variety of scaffolded strategies to help support all learners.

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Next Generation Science Standards (NGSS)	Savvas ReadyGEN, ©2016 Kindergarten
Kindergarten	
<p>Forces and Interactions: Pushes and Pulls</p> <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>	<p>Unit 5 <i>Swirl by Swirl: Spirals in Nature</i> Sleuth Read-Aloud: Simple Machines</p>
<p>Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment</p> <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> <p>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.*</p>	<p>Unit 1 <i>Where is Home, Little Pip?</i> <i>A House for Hermit Crab</i> <i>Life in a Pond</i> <i>A Bed for Winter</i></p> <p>Unit 2 <i>The Little House</i> <i>Four Seasons Make a Year</i></p> <p>Unit 3 Come On, Rain! Sleuth Read-Aloud: "Bear and Fox"</p> <p>Unit 5 <i>The Tiny Seed</i> <i>Jack's Garden</i> <i>Swirl by Swirl: Spirals in Nature</i> <i>Plant Patterns</i></p> <p>Unit 6 <i>On the Town: A Community Adventure</i></p>

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Next Generation Science Standards (NGSS)	Savvas ReadyGEN, ©2016 Kindergarten
<p>Weather and Climate</p> <p>K-PS3-1. Make observations to determine the effect of sunlight on Earth’s surface.</p> <p>K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.*</p> <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>	<p>Unit 1 <i>A Bed for the Winter</i></p> <p>Unit 2 <i>Four Seasons Make a Year</i></p> <p>Unit 3 <i>Come on, Rain!</i> <i>The Snowy Day</i> <i>What Will the Weather Be?</i> <i>Weather Words and What they Mean</i> <i>Sleuth Read-Aloud: “Our Snowy Discovery”</i></p> <p>Unit 5 <i>Jack’s Garden</i></p>

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Next Generation Science Standards (NGSS)	Savvas ReadyGEN, ©2016 Grade 1
GRADE 1	
<p>1. Waves: Light and Sound</p> <p>1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.</p> <p>1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated.</p> <p>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.</p> <p>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.*</p>	<p>Unit 5 <i>The Sun</i> <i>Sleuth: "Finding a Voice"</i></p>
<p>1. Structure, Function, and Information Processing</p> <p>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.*</p> <p>1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.</p> <p>1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.</p>	<p>Unit 1 <i>Stellaluna</i> <i>Dragons and Giants</i> <i>What Do You Do with a Tail Like This?</i> <i>Sleuth: "How Polar Bears Hunt"; "A New Family"</i></p> <p>Unit 4 <i>Arbor Day Square</i> <i>The Family Tree</i> <i>The Life Cycle of an Apple Tree</i> <i>How a Seed Grows</i></p> <p>Unit 5 <i>Sleuth: "Look out for Wildlife"; "Is Your Polar Bear Happy?"</i></p>
<p>1. Space Systems: Patterns and Cycles</p> <p>1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted.</p> <p>1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year.</p>	<p>Unit 5 <i>King Kafu and the Moon</i> <i>Let's Visit the Moon</i> <i>Our World in Space: Planets</i> <i>The Sun</i></p>

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Next Generation Science Standards (NGSS)	Savvas ReadyGEN, ©2016 Grade 2
GRADE 2	
<p>2. Structure and Properties of Matter</p> <p>2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.</p> <p>2-PS1-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.*</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>	<p>Unit 6 <i>ALFRED NOBEL: The Man Behind the Peace Prize</i></p>
<p>2. Interdependent Relationships in Ecosystems</p> <p>2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.</p> <p>2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.*</p> <p>2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.</p>	<p>Unit 1 <i>Snowshoe Hare's Winter Home</i> <i>The House on Maple Street</i> <i>Friend Around the World</i></p> <p>Unit 2 <i>I Wanna Iguana</i></p> <p>Unit 3 <i>City Green</i> <i>Sleuth: "Gregor Mendel"</i></p> <p>Unit 4 <i>Seek the Sun</i></p> <p>Unit 5 <i>John Chapman: Planter and Pioneer</i> <i>Johnny Appleseed</i> <i>Planting a Tree</i> <i>Sleuth: "From Seed to Flower to Fruit"</i></p> <p>Unit 6 <i>68 Ways to Save the Planet Before Bedtime</i> <i>On Meadowview Street</i></p>

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Next Generation Science Standards (NGSS)	Savvas ReadyGEN, ©2016 Grade 2
<p>2. Earth’s Systems: Processes that Shape the Earth</p> <p>2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly. 2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.* 2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area. 2-ESS2-3. Obtain information to identify where water is found on Earth and that it can be solid or liquid.</p>	<p>Unit 4 <i>The Earth Dragon Awakes</i> <i>Seek the Sun</i> <i>Danger! Earthquakes</i> <i>Disaster Alert!</i> <i>Who Could Somersault the San Andreas Fault?</i></p>
<p>K-2. Engineering Design</p> <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. 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. 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.</p>	<p>Kindergarten Unit 5: <i>Sleuth: “Simple Machines”</i></p> <p>Grade 1 Unit 5: <i>Sleuth: “Finding a Voice”</i></p> <p>Grade 2 Unit 6: <i>ALFRED NOBEL The Man Behind the Peace Prize</i></p>

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Next Generation Science Standards (NGSS)	Savvas ReadyGEN, ©2016 Grade 3
GRADE 3	
<p>3. Forces and Interaction</p> <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>	<p>Unit 1 <i>The Moon Seems to Change</i></p>
<p>3. Interdependent Relationships in Ecosystems</p> <p>3-LS2-1. Construct an argument that some animals form groups that help members survive.</p> <p>3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.</p> <p>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.</p> <p>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.*</p>	<p>Unit 1 <i>The Case of the Gasping Garbage Location, Location, Location About Earth</i> <i>Sleuth: “A Whale of a Rescue”; “Backyard Safari”</i></p> <p>Unit 2 <i>The Athabascans: Old Ways and New Ways; The Frog Princess: A Tlingit Legend from Alaska</i></p>

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<p style="text-align: center;">Next Generation Science Standards (NGSS)</p>	<p style="text-align: center;">Savvas ReadyGEN, ©2016 Grade 3</p>
<p>3. Inheritance and Variation of Traits: Life Cycles and Traits</p> <p>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.</p> <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> <p>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.</p>	<p>Unit 1 <i>The Case of the Gasping Garbage Location, Location, Location</i></p> <p>Unit 3 <i>Knots on a Counting Rope</i></p>
<p>3. Weather and Climate</p> <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>	<p>Unit 1 <i>Thunder Cake</i></p> <p>Unit 2 <i>City Homes</i></p> <p>Unit 3 <i>Storm in the Night</i> <i>Knots on a Counting Rope</i> <i>Paul Bunyan: Growing Up</i> <i>Sleuth: "We Need New Tornado Warnings!"; "Taking Shelter"</i> <i>On the Same Day in March</i> <i>Living Through a Natural Disaster</i> <i>On the Same Day in March, A Tour of the World's Weather</i> <i>Sleuth: "Weather Work"; "Be-Prepared"</i></p>

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GRADE 4	
<p>4. Energy</p> <p>4-PS3-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object.</p> <p>4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.</p> <p>4-PS3-3. Ask questions and predict outcomes about the changes in energy that occur when objects collide.</p> <p>4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.*</p> <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>Unit 4: <i>The Boy Who Invented TV</i></p>
<p>4. Waves</p> <p>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.</p> <p>4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information.*</p>	<p>Unit 4: <i>The Boy Who Invented TV</i></p>
<p>4. Structure, Function, and Information Processing</p> <p>4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.</p> <p>4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.</p> <p>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.</p>	<p>Unit 1: <i>Science Squad: Porpoises in Peril</i> <i>"Fragile Frogs" from The Frog Scientist</i> <i>Skeletons Inside and Out</i> <i>King of the Parking Lot</i> <i>Movers and Shapers</i> <i>Sleuth: "Nosing Around";</i> <i>"A 'Coat' of Many Colors";</i> <i>"What Did You Say?";</i> <i>"Adapting to Survive"</i></p>

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<p>4. Earth’s Systems: Processes that Shape the Earth</p> <p>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.</p> <p>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.</p> <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>	<p>Unit 3: <i>Earthquakes</i> <i>Quake!</i> <i>Earthshaker’s Bad Day</i> <i>The Monster Beneath the Sea</i> <i>Anatomy of a Volcanic Eruption</i> <i>Escape from Pompeii</i> <i>Sleuth: “Crater Lake”;</i> <i>“The Layering Effect”;</i> <i>“Rocking It”</i></p>

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GRADE 5	
<p>5. Structure and Properties of Matter</p> <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>	<p>Unit 3 <i>George's Secret to the Universe</i> <i>A Black Hole Is NOT a Hole</i></p>
<p>5. Matter and Energy in Organisms and Ecosystems</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>	<p>Unit 1 <i>Night of the Spadefoot Toads</i> <i>Hatchet</i> <i>Rain Forest Food Chains</i> <i>Pale Male</i> <i>Sleuth: "Fishy Business!";</i> <i>"Welcome to the Neighborhood?"</i></p>
<p>5. Earth's Systems</p> <p>5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.</p> <p>5-ESS2-2. 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> <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>Unit 1 <i>Night of the Spadefoot Toads</i> <i>Sleuth: "Fishy Business!";</i> <i>"Welcome to the Neighborhood?"</i></p> <p>Unit 3 <i>George's Secret to the Universe</i> <i>Sleuth: "Technology and Treasure"</i></p>

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<p>5. Space Systems: Stars and the Solar System</p> <p>5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.</p> <p>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.</p> <p>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.</p>	<p>Unit 3 <i>George's Secret Key to the Universe</i> <i>The Man Who Went to the Far Side of the Moon</i> <i>Mayday on Moon of Jupiter</i> <i>Jess and Layla's Astronomical Assignment</i> <i>Our Mysterious Universe</i> <i>A Black Hole is NOT a Hole</i> <i>Sleuth: "Careers in the Space Industry";</i> <i>"Charlotte's Space Travel";</i> <i>"Moving to Mars"</i></p>
<p>3-5 Engineering Design</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> <p>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.</p>	<p>Grade 3 Unit 1 <i>The Case of the Gasping Garbage.</i></p> <p>Grade 4 Unit 1 <i>Science Squad: Porpoises in Peril</i> <i>Mary Anning: The Girl Who Cracked Open the World</i></p> <p>Unit 4 <i>The Boy Who Invented TV</i></p> <p>Grade 5 Unit 1 <i>Hatchet</i></p> <p>Unit 3 <i>A Black Hole Is NOT a Hole</i> <i>Sleuth: "Technology and Treasure"</i></p>