



## Mystery Science Alignment with the Virginia Science Standards of Learning (2018)

### Mystery Science - Virginia Alignment

Mystery Science aligns to the new Virginia Science Standards of Learning (2018). The core lesson (exploration & activity) is designed to take one hour per week. To view each lesson's alignment to 3 dimensional learning (disciplinary core ideas, science and engineering practices, and crosscutting concepts) view our [NGSS Alignment](#) document. Mini-lessons are 5-minute videos that answer K-5 student questions and can be used as a jumping off point to engage learners for a full lesson planned by the teacher.

**Lesson Extensions.** Extensions are available for each lesson and offer an opportunity for students to continue their science content learning. They include assessments and a curated collection of additional activity suggestions, online resources, project ideas, and readings to help extend the learning.

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# Kindergarten

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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Life Science	Living Systems & Processes	<b>K.5</b> Senses allow humans to seek, find, take in, and react or respond to different information. Key ideas include: (a) the five basic senses correspond to specific human body structures; and (b) senses are used in our daily lives.			<i>Virginia Specific Standard</i>
		<b>K.6</b> There are differences between living organisms and non-living objects. Key ideas include: (a) all things can be classified as living or non-living; and (b) living organisms have certain characteristics that distinguish them from nonliving objects.			<i>Virginia Specific Standard</i>
		<b>K.7</b> Plants and animals have basic needs and life processes. Key ideas include: (a) living things need adequate food, water, shelter, air, and space to survive; (b) plants and animals have life cycles; and (c) offspring of plants and animals are similar but not identical to their parents or to one another.	<a href="#">Plant &amp; Animal Secrets</a>	Grade K	<b>Lesson 1:</b> Why do woodpeckers peck wood? <b>Lesson 2, Read Along:</b> Where do animals live? <b>Lesson 3:</b> How can you find animals in the woods? <b>Lesson 4, Read Along:</b> How do animals make their homes in the forest? <b>Lesson 5:</b> How do plants and trees grow? <b>Lesson 6, Read Along:</b> Why would you want an old log in your backyard?
			<a href="#">Plant &amp; Animal Superpowers</a>	Grade 1	<b>Lesson 4:</b> Why do family members look alike?



## Kindergarten, continued

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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Earth & Space Science	Earth & Space Systems	<b>K.8</b> Light influences temperature on Earth's surfaces and can cause shadows. Key ideas include: (a) the sun provides light and warms Earth's surfaces; (b) shadows can be produced when sunlight or artificial light is blocked by an object; and (c) objects in shadows and objects in sunlight have different temperatures.	<a href="#">Weather Watching</a>	Grade K	<b>Lesson 5:</b> How could you warm up a frozen playground? <b>Lesson 6, Read Along:</b> How could you walk barefoot across hot pavement without burning your feet?
		<b>K.9</b> There are patterns in nature. Key patterns include: (a) daily weather; (b) seasonal changes; and (c) day and night.	<a href="#">Weather Watching</a>	Grade K	<b>Lesson 1:</b> Have you ever watched a storm? <b>Lesson 2, Read Along:</b> How can you get ready for a big storm? <b>Lesson 3:</b> What will the weather be like on your birthday? <b>Lesson 4:</b> How do you know what to wear for the weather?
		<b>K.10</b> Change occurs over time. Key ideas include: (a) natural and human-made things change over time; (b) living and non-living things change over time; (c) changes can be observed and measured; and (d) changes may be fast or slow.			
	Earth's Resources	<b>K.11</b> Humans use resources. Key ideas include: (a) some materials and objects can be used over and over again; (b) materials can be recycled; and (c) choices we make impact the air, water, land, and living things.			



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Physical Science	Force, Motion, & Energy	<b>K.2</b> Pushes and pulls affect the motion of objects. Key ideas include: (a) pushes and pulls cause an object to move; (b) pushes and pulls can change the direction of an object; and (c) changes in motion are related to the strength of the push or pull.	<a href="#">Force Olympics</a>	Grade K	<b>Lesson 1:</b> What's the biggest excavator? <b>Lesson 2, Read Along:</b> Why do builders need so many big machines? <b>Lesson 3:</b> How can you knock down a wall made of concrete? <b>Lesson 4, Read Along:</b> How can you knock down the most bowling pins? <b>Lesson 5:</b> How can we protect a mountain town from falling rocks? <b>Lesson 6, Read Along:</b> How could you invent a trap?
	Matter	<b>K.3</b> Physical properties of an object can be described. Properties include (a) colors; (b) shapes and forms; (c) textures and feels; and (d) relative sizes and weights of objects.			<i>Virginia specific standard</i>
		<b>K.4</b> Water is important in our daily lives and has properties. Key ideas include: (a) water has many uses; (b) water can be found in many places; (c) water occurs in different phases; and (d) water flows downhill.			<i>Virginia specific standard</i>



# Grade 1

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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Life Science	Living Systems & Processes	1.4 Plants have basic life needs and functional parts that allow them to survive. Key ideas include: (a) plants need nutrients, air, water, light, and a place to grow; (b) structures of plants perform basic functions; and (c) plants can be classified based on a variety of characteristics.	<a href="#">Plant &amp; Animal Superpowers</a>  <a href="#">Plant Adventures</a>	Grade 1  Grade 2	<b>Lesson 5:</b> Why don't trees blow down in the wind? <b>Lesson 6, Read Along:</b> What do sunflowers do when you're not looking?  <b>Lesson 1:</b> How did a tree travel halfway around the world? <b>Lesson 2:</b> Could a plant survive without light? <b>Lesson 3:</b> Why do trees grow so tall? <b>Lesson 4:</b> Should you water a cactus? <b>Lesson 5:</b> Where do plants grow best?
		1.5 Animals, including humans, have basic life needs that allow them to survive. Key ideas include: (a) animals need air, food, water, shelter, and space (habitat); (b) animals have different physical characteristics that perform specific functions; and (c) animals can be classified based on a variety of characteristics.	<a href="#">Plant &amp; Animal Superpowers</a>  <a href="#">Animal Adventures</a>	Grade 1  Grade 2	<b>Lesson 1:</b> Why do birds have beaks? <b>Lesson 2, Read Along:</b> Why do baby ducks follow their mother? <b>Lesson 3:</b> Why are polar bears white?  <b>Lesson 1:</b> How many different kinds of animals are there?
Earth & Space Science	Earth & Space Systems	1.6 There is a relationship between the Sun and Earth. Key ideas include: (a) the Sun is the source of energy and light that warms the Earth's land, air, and water; and (b) the sun's relative position changes in the Earth's sky throughout the day.	<a href="#">Spinning Sky</a>	Grade 1	<b>Lesson 1:</b> Could a statue's shadow move? <b>Lesson 2, Read Along:</b> What does your shadow do when you're not looking? <b>Lesson 3:</b> How can the sun help you if you're lost?





## Grade 1, continued

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Earth & Space Science  (Cont.)	Earth & Space Systems	<b>1.7</b> There are weather and seasonal changes. Key ideas include: (a) changes in temperature, light, and precipitation occur over time; (b) there are relationships between daily weather and the season; and (c) changes in temperature, light, and precipitation affect plants and animals, including humans.	<a href="#">Spinning Sky</a>	Grade 1	<b>Lesson 4, Read Along:</b> Why do you have to go to bed early in the summer? <b>Lesson 5:</b> Why do the stars come out at night? <b>Lesson 6, Read Along:</b> How can the stars help you if you get lost?
	Earth's Resources	<b>1.8</b> Natural resources can be used responsibly. Key ideas include: (a) most natural resources are limited; (b) human actions can affect the availability of natural resources; and (c) reducing, reusing, and recycling are ways to conserve natural resources.	<a href="#">Mini-lessons</a>		<b>Mini-lessons:</b> How is plastic made?
Physical Science	Force, Motion, & Energy	<b>1.2</b> Objects can move in different ways. Key ideas include: (a) objects may have straight, circular, spinning, and back-and-forth motions; and (b) objects may vibrate and produce sound.	<a href="#">Lights &amp; Sounds</a>	Grade 1	<b>Lesson 1:</b> How do they make silly sounds in cartoons? <b>Lesson 2, Read Along:</b> Where do sounds come from?
	Matter	<b>1.3</b> Objects are made from materials that can be described by their physical properties. Key ideas include: (a) objects are made of one or more materials with different physical properties and can be used for a variety of purposes; (b) when a material is changed in size most physical properties remain the same; and (c) the type and amount of material determine how much light can pass through an object.	<a href="#">Lights &amp; Sounds</a>	Grade 1	<b>Lesson 3:</b> What if there were no windows? <b>Lesson 4, Read Along:</b> Can you see in the dark? <b>Lesson 5:</b> How could you send a secret message to someone far away? <b>Lesson 6, Read Along:</b> How do boats find their way in the fog?



## Grade 2

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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit	Mystery Science Lessons
Life Science	Living Systems & Processes	2.5 Living things are a part of a system. Key ideas include (a) plants and animals are interdependent with their living and nonliving surroundings; (b) an animal's habitat provides all of its basic needs; and (c) habitat change over time due to many influences.	<a href="#">Animal Adventures</a>  <a href="#">Mini-lessons</a>	<b>Lesson 2:</b> Why do frogs say "ribbit"? <b>Lesson 3:</b> How could you get more birds to visit a bird feeder?  <b>Mini-lesson:</b> Why do animals come back after going to warm places in the winter? <b>Mini-lesson:</b> Why can't fish breathe on land? <b>Mini-lesson:</b> Where do bugs go in winter?
		2.4 Plants and animals undergo a series of orderly changes as they grow and develop. Key ideas include: (a) animals have life cycles; and (b) plants have life cycles.	<a href="#">Power of Flowers*</a>  <a href="#">Mini-lessons</a>	<b>Lesson 1:</b> Why do plants grow flowers? <b>Lesson 2:</b> Why do plants give us fruit? <b>Lesson 3:</b> Why are some apples red and some green? <b>Lesson 4:</b> How could you make the biggest fruit in the world?  <b>Mini-lesson:</b> How do flowers bloom in the spring?** <b>Mini-lesson:</b> Why do leaves change color in the fall?** <b>Mini-lesson:</b> Why do birds lay eggs in the spring?
Earth & Space Science	Earth & Space Systems	2.6 There are different types of weather on Earth. Key ideas include: (a) different types of weather have specific characteristics; (b) measuring, recording, and interpreting weather data allows for identification of weather patterns; and (c) tracking weather allows us to prepare for the weather and storms.	<a href="#">Stormy Skies</a>	<b>Lesson 1:</b> Where do clouds come from? <b>Lesson 2:</b> How can we predict when it's going to storm? <b>Lesson 4:</b> How can you keep a house from blowing away in a windstorm?
		2.7 Weather patterns and seasonal changes affect plants, animals, and their surroundings. Key ideas include: (a) weather and seasonal changes affect the growth and behavior of living things; (b) wind and weather can change the land; and (c) changes can happen quickly or slowly over time.	<a href="#">Work of Water</a>	<b>Lesson 1:</b> If you floated down a river, where would you end up? <b>Lesson 2:</b> Why is there sand at the beach? <b>Lesson 3:</b> What's strong enough to make a canyon? <b>Lesson 4:</b> How can you stop a landslide?

\* Power of Flowers picks up where Plant Adventures (Virginia Grade 1) leaves off. If your students haven't learned about what plants need for survival, or need a refresher, we suggest you teach [Plant Adventures](#) first.

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Earth & Space Science (Cont.)	Earth Resources	<b>2.8</b> Plants are important natural resources. Key ideas include: (a) the availability of plant products affects the development of a geographical area; (b) plants provide oxygen, homes, and food for many animals; and (c) plants can help reduce the impact of wind and water.		Virginia specific standard
Physical Science	Force, Motion, & Energy	<b>2.2</b> Different types of forces may cause an object's motion to change. Key ideas include: (a) forces from direct contact can cause an object to move; (b) some forces, including gravity can cause an object to move; and (c) forces have applications in our lives.	<a href="#">Mini-lessons</a>	<b>Mini-lesson:</b> Why can't airplanes fly to space?**
	Matter	<b>2.3</b> Matter can exist in different phases. Key ideas include: (a) matter has mass and takes up space; (b) solids, liquids, and gases have different characteristics; and (c) heating and cooling can change the phases of matter.	<a href="#">Material Magic</a>  <a href="#">Stormy Skies</a>  <a href="#">Mini-lessons</a>	<b>Lesson 1:</b> Why do we wear clothes? <b>Lesson 2:</b> Can you really fry an egg on a hot sidewalk? <b>Lesson 3:</b> Why are so many toys made out of plastic? <b>Lesson 4:</b> What materials might be invented in the future? <b>Lesson 5:</b> Could you build a house out of paper?  <b>Lesson 1:</b> Where do clouds come from?  <b>Mini-lesson:</b> How is glass made? <b>Mini-lesson:</b> How are diamonds made?

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# Grade 3

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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit		Mystery Science Lessons
Life Science	Living Systems & Processes	<b>3.4</b> Adaptations allow organisms to satisfy life needs and respond to the environment. Key ideas include: (a) populations may adapt over time; (b) adaptations may be behavioral or physical; and (c) fossils provide evidence about the types of organisms that lived long ago as well as the nature of their environments.	<a href="#">Animals Through Time</a>  <a href="#">Mini-lessons</a>	Grade 3	<b>Lesson 1:</b> Where can you find whales in a desert? <b>Lesson 2:</b> How do we know what dinosaurs looked like? <b>Lesson 3:</b> Can you outrun a dinosaur? <b>Lesson 4:</b> What kinds of animals might there be in the future? <b>Lesson 5:</b> Can selection happen without people? <b>Lesson 6:</b> Why do dogs wag their tails? <b>Lesson 7:</b> What's the best way to get rid of mosquitoes? <b>Lesson 8:</b> How long can people (and animals) live in outer space?  <b>Mini-lesson:</b> What is the biggest spider in the world?*** <b>Mini-lesson:</b> Why are butterflies so colorful?*** <b>Mini-lesson:</b> Why do zebras have stripes? <b>Mini-lesson:</b> Where do bugs go in winter? <b>Mini-lesson:</b> Why do we have eyebrows?
		<b>3.5</b> Aquatic and terrestrial ecosystems support a diversity of organisms. Key ideas include: (a) ecosystems are made up of living and nonliving components of the environment; and (b) relationships exist among organisms in an ecosystem.			
Earth & Space Science	Earth & Space Systems	<b>3.6</b> Soil is important in ecosystems. Key ideas include: (a) soil, with its different components, is important to organisms; and (b) soil provides support and nutrients necessary for plant growth.			Virginia specific standard
		<b>3.7</b> There is a water cycle and water is important to life on Earth. Key ideas include: (a) there are many reservoirs of water on Earth; (b) the energy from the sun drives the water cycle; and (c) the water cycle involves specific processes.	<a href="#">Watery Planet*</a>	Grade 5	<b>Lesson 1:</b> How much water is in the world? <b>Lesson 2:</b> When you turn on the faucet, where does the water come from? <b>Lesson 3:</b> Can we make it rain?

\* [Watery Planet](#) was designed for Grade 5 NGSS, but can be taught in Grade 3 with modifications. Expect aspects of this unit to be challenging for Grade 3.

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<https://mysteryscience.com/docs/virginia>



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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Earth & Space Science (Cont.)	Earth Resources	<b>3.8</b> Natural events and humans influence ecosystems. Key ideas include: (a) human activity affects the quality of air, water, and habitats; (b) water is limited and needs to be conserved; (c) fire, flood, disease, and erosion affect ecosystems; and (d) soil is a natural resource and should be conserved.	<a href="#">Watery Planet*</a>  <a href="#">Mini-lessons</a>	Grade 5	<b>Lesson 4:</b> How can you save a town from a hurricane?  <b>Mini-lesson:</b> Why is it so hard for firefighters to put out wildfires?
Physical Science	Force, Motion, & Energy	<b>3.2</b> The direction and size of force affects the motion of an object. Key ideas include: (a) multiple forces many act on an object; (b) the net force of an object determines how an object moves; (c) simple machines increase or change the direction of a force; and (d) simple and compound machines have many applications.	<a href="#">Invisible Forces</a>	Grade 3	<b>Lesson 1:</b> How could you win a tug-of-war against a bunch of adults? <b>Lesson 2:</b> What makes bridges so strong? <b>Lesson 3:</b> How can you go faster down a slide? <b>Lesson 4:</b> What can magnets do? <b>Lesson 5:</b> How can you unlock a door using a magnet?
	Matter	<b>3.3</b> Materials interact with water. Key ideas include: (a) solids and liquids mix with water in different ways; and (b) many solids dissolve more easily in hot water than in cold water.			<i>Virginia specific standard</i>

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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Life Science	Living Systems & Processes	<b>4.2</b> Plants and animals have structures that distinguish them from one another and play vital roles in their ability to survive. Key ideas include: (a) the survival of plants and animals depends on photosynthesis; (b) plants and animals have different structures and processes for obtaining energy; and (c) plants and animals have different structures and processes for creating offspring.	<a href="#">Human Machine</a>  <a href="#">Mini-lessons</a>	Grade 4	<b>Lesson 1:</b> Why do your biceps bulge? <b>Lesson 2:</b> What do people who are blind see? <b>Lesson 3:</b> How can some animals see in the dark? <b>Lesson 4:</b> How does your brain control your body?  <b>Mini-lesson:</b> How does your heart pump blood?** <b>Mini-lesson:</b> Why do our skeletons have so many bones?**
		<b>4.3</b> Organisms, including humans, interact with one another and with the nonliving components in the ecosystem. Key ideas include: (a) interrelationships exist in populations, communities, and ecosystems; (b) food webs show the flow of energy within an ecosystem; (c) changes in an organism's niche and habitat may occur at various stages in its life cycle; and (d) classification can be used to identify organisms.	<a href="#">Web of Life</a>	Grade 5	<b>Lesson 1:</b> Why would a hawk move to New York City? <b>Lesson 2:</b> What do plants eat? <b>Lesson 3:</b> Where do fallen leaves go? <b>Lesson 4:</b> Do worms really eat dirt? <b>Lesson 5:</b> Why do you have to clean a fish tank but not a pond? <b>Lesson 6:</b> Why did the dinosaurs go extinct?

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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Earth & Space Science	Earth & Space Systems	<b>4.4</b> Weather conditions and phenomena affect ecosystems and can be predicted. Key ideas include: (a) weather measurements create a record that can be used to make weather predictions; (b) common and extreme weather events affect ecosystems; and (c) long term seasonal weather trends determine the climate of the region.	<a href="#">Stormy Skies</a>  <a href="#">Mini-lessons</a>	Grade 3	<b>Lesson 3:</b> Why are some places always hot?  <b>Mini-lesson:</b> What's worse: a hurricane or a tornado? <b>Mini-lesson:</b> What makes hurricanes so dangerous? <b>Mini-lesson:</b> Why are tornadoes so hard to predict?
		<b>4.5</b> The planets have characteristics and a specific place in the solar system. Key ideas include: (a) planets rotate on their axes and revolve around the sun; (b) planets have characteristics and a specific order in the solar system; and (c) the sizes of the sun and planets can be compared to one another.	<a href="#">Spaceship Earth</a>	Grade 5	<b>Lesson 1:</b> How fast does the Earth spin? <b>Lesson 2:</b> Who set the first clock? <b>Lesson 3:</b> How can the Sun tell you the season? <b>Lesson 4:</b> Why do the stars change with the seasons? <b>Lesson 5:</b> Why does the Moon change shape? <b>Lesson 6:</b> What are the wandering stars? <b>Lesson 7:</b> Why is gravity different on other planets? <b>Lesson 8:</b> Could there be life on other planets?  <b>Mini-lesson:</b> How often do eclipses happen? <b>Mini-lesson:</b> Why are people making such a big deal about the solar eclipse? <b>Mini-lesson:</b> Why does the moon turn blood red during a lunar eclipse?
		<b>4.6</b> There are relationships among Earth, the moon, and the sun. Key relationships include: (a) the motions of Earth, the moon, and the sun; (b) the causes for Earth's seasons; (c) the causes for the four major phases of the moon and the relationship to the tide cycles; and (d) the relative size, position, age, and makeup of Earth, the moon, and the sun.	<a href="#">Mini-lessons</a>		





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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Earth & Space Science (Cont.)	Earth & Space Systems (Cont.)	<b>4.7</b> The ocean environment has characteristics. Key characteristics include: (a) geology of the ocean floor; (b) physical properties and movement of ocean water; and (c) interaction of organisms in the ocean.	<a href="#">Mini-lessons</a>		<b>Mini-Lesson:</b> How deep does the ocean go? <b>Mini-lesson:</b> Why is the ocean salty?
	Earth Resources	<b>4.8</b> Virginia has important natural resources. Key resources include: (a) watersheds and water; (b) plants and animals; (c) minerals, rocks, and ores; and (d) forests, soil, and land.			<i>Virginia specific standard</i>



## Grade 5

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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Earth & Space Science	Earth & Space Systems	<b>5.8</b> Earth constantly changes. Key ideas include: (a) Earth's internal energy causes movement of material within the Earth; (b) plate tectonics describe movement of the crust; (c) the rock cycle models the transformation of rocks; (d) processes such as weathering, erosion, and deposition change the surface of the Earth; and (e) fossils and geologic patterns provide evidence of Earth's change.	<a href="#">The Birth of Rocks</a>  <a href="#">Mini-lessons</a>	Grade 4	<b>Lesson 1:</b> Could a volcano pop up where you live? <b>Lesson 2:</b> Why do some volcanoes explode? <b>Lesson 3:</b> Will a mountain last forever? <b>Lesson 4:</b> How could you survive a landslide?  <b>Mini-lesson:</b> How do earthquakes happen? <b>Mini-lesson:</b> Can you make lava?
	Earth Resources	<b>5.9</b> The conversion of energy resources is important. Key ideas include: (a) some sources of energy are considered renewable and others are not; (b) individuals and communities have means of conserving both energy and matter; and (c) advances in technology improve the ability to transfer and transform energy.	<a href="#">Energizing Everything</a>	Grade 4	<b>Lesson 8:</b> Where does energy come from?



## Grade 5, continued

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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Physical Science	Force, Motion, & Energy	<b>5.2</b> Energy can take many forms. Key ideas include: (a) energy is the ability to do work or to cause change; (b) there are many different forms of energy; (c) energy can be transformed; and (d) energy is conserved.	<a href="#">Energizing Everything</a>	Grade 4	<b>Lesson 1:</b> How is your body similar to a car? <b>Lesson 2:</b> What makes roller coasters go so fast? <b>Lesson 3:</b> Why is the first hill of a roller coaster always the highest? <b>Lesson 4:</b> Could you knock down a building using only dominoes? <b>Lesson 5:</b> Can you build a chain reaction machine? <b>Lesson 6:</b> What if there were no electricity? <b>Lesson 7:</b> How long did it take to travel across the country before cars and planes? <b>Lesson 8:</b> Where does energy come from?
		<b>5.3</b> There is a relationship between force and energy of moving objects. Key ideas include: (a) moving objects have kinetic energy; (b) motion is described by an object's direction and speed; (c) changes in motion are related to net force and mass; (d) when objects collide, the contact forces transfer energy and can change; and (e) friction is a force that opposes motion.			
		<b>5.4</b> Electricity is transmitted and used in daily life. Key ideas include: (a) electricity flows easily through conductors but not insulators; (b) electricity flows through closed circuits; (c) static electricity can be generated by rubbing certain materials together; (d) electrical energy can be transformed into radiant, mechanical, and thermal energy; and (e) a current flowing through a wire creates a magnetic field.			



## Grade 5, continued

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Strand	Topic	Virginia Standard <i>Students will investigate and understand that...</i>	Mystery Science Unit	Mystery Science Grade	Mystery Science Lessons
Physical Science  (Cont.)	Force, Motion, & Energy  (Continued)	<b>5.5</b> Sound can be produced and transmitted. Key ideas include: (a) sound is produced when an object or substance vibrates; (b) sound is the transfer of energy; (c) different media transmit sound differently; (d) sound waves have many uses and applications.	<a href="#">Waves of Sound</a>	Grade 4	<b>Lesson 1:</b> How far can a whisper travel? <b>Lesson 2:</b> What would happen if you screamed in outer space? <b>Lesson 3:</b> Why are some sounds high and some sounds low?
		<b>5.6</b> Visible light has certain characteristics and behaves in predictable ways. Key ideas include: (a) visible light is radiant energy that moves in transverse waves; (b) the visible spectrum includes light with different wavelengths; (c) matter influences the path of light; and (d) radiant energy can be transformed into thermal, mechanical, and electrical energy.	<a href="#">Mini-lessons</a>		<b>Mini-lesson:</b> How is a rainbow made?*** <b>Mini-lesson:</b> Why is the sky blue?
	Matter	<b>5.7</b> Matter has properties and interactions. Key ideas include: (a) matter is composed of atoms; substances can be mixed together without changes to their physical properties; and (c) energy has an effect on the phases of matter.	<a href="#">Chemical Magic</a>	Grade 5	<b>Lesson 1:</b> Are magic potions real? <b>Lesson 2:</b> Could you transform something worthless into gold? <b>Lesson 3:</b> What would happen if you drank a glass of acid? <b>Lesson 4:</b> What do fireworks, rubber, and silly putty have in common? <b>Lesson 5:</b> Why do some things explode?

\*\* Indicates a mini-lesson with an included hands-on STEAM activity from Mystery Science.