



ADW GRADE 2 SCIENCE STANDARDS & INSTRUCTION GUIDE

PHYSICAL SCIENCE (PS)	Standards	Core Concepts	Scientific Terms and Scientists	EdTech Resources
SC.2.PS.1	Describe and classify different kinds of materials by their physical properties.	<ul style="list-style-type: none"> • Different kinds of matter exist and many of them can be in solid, liquid, or gas phase depending on temperature. Temperature is measured with a thermometer. • Matter can be described and classified by its observable/physical properties. • Length is measured using a ruler, weight is measured using a scale. • Physical properties include color, texture, hardness, and flexibility. • Changes made to materials, such as freezing, heating, mixing, cutting, and wetting, are physical changes and change some of the properties. Not all materials respond in the same way. • A balance is used to measure mass; a graduated cylinder is used to measure liquid volume 	<ul style="list-style-type: none"> • matter • solid • liquid • gas • temperature • physical properties • physical changes 	<ul style="list-style-type: none"> • https://betterlesson.com/lesson/638666/defining-properties-of-solids-liquids-and-gases?from=cc_lesson • http://www.washtwpsd.org/wp-content/uploads/2011/12/Grade-2_Unit-2.pdf
SC.2.PS.2E	Analyze data obtained from testing different materials to determine which	<ul style="list-style-type: none"> • Different properties of matter make the material suited to different purposes. 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • https://betterlesson.com/lesson/614615/tool



ADW GRADE 2 SCIENCE STANDARDS & INSTRUCTION GUIDE

	materials have the properties that are best suited for an intended purpose. Compare these uses with other students' ideas.	<ul style="list-style-type: none">• Materials can be chosen based on properties such as strength, flexibility, hardness, texture, and absorbency.• Objects may be disassembled into smaller pieces and be put together into larger pieces, or change shapes.		s-not-toys?from=cc_lesson
SC.2.PS.3	Construct an argument with evidence that some changes caused by heating and cooling can be reversed and some cannot.	<ul style="list-style-type: none">• Heating or cooling a substance may cause changes that can be observed.• Sometimes these changes are reversible, and sometimes they are not.	<ul style="list-style-type: none">• heating• cooling• reversible• irreversible	<ul style="list-style-type: none">• https://betterlesson.com/lesson/639235/matter-and-heat-reversible-changes?from=cc_lesson• https://thewonderofscience.com/2ps14/#video



ADW GRADE 2 SCIENCE STANDARDS & INSTRUCTION GUIDE

LIFE SCIENCE (LS)	Standards	Core Concepts	Scientific Terms and Scientists	EdTech Resources
SC.2.LS.1	Plan and conduct a structured investigation to determine what plants need to live, grow, and reproduce.	<ul style="list-style-type: none"> Plants depend on water, sunlight and air to grow and be healthy. Plants that lack water, light, or air will not grow, develop, or reproduce. In an investigation, only one variable should be tested at a time. Other factors are held constant. (Example: vary only the amount of water, while keeping the plant, pot, soil, and sunlight the same.) Growth can be measured by the height of the plant, the thickness of the stem, the number of leaves, etc. Some plants grow from seeds and develop into mature plants. A metric ruler/meter stick is used to make measurement observations for length or distance. 	<ul style="list-style-type: none"> variable constant seed growth reproduction 	<ul style="list-style-type: none"> http://sciencenetlinks.com/lessons/look-at-those-seeds-grow/ http://www.bbc.co.uk/schools/scienceclips/ages/7_8/plants_grow_f.shtml https://www.nextgenscience.org/resources/grade-2-why-our-corn-changing-v10
SC.2.LS.2	Obtain, evaluate, and communicate information on what humans need for a healthy lifestyle.	<ul style="list-style-type: none"> Humans need water, food, and air just as other animals do. Humans have body systems that work together to provide air and energy and remove waste from their bodies (eg. digestive system, circulatory, and excretory systems). Eating a variety of healthful foods and getting enough exercise is important for good health. School age children need between 9-11 hours of 	<ul style="list-style-type: none"> body systems exercise bacteria virus 	<ul style="list-style-type: none"> http://www.scholastic.com/browse/lessonplan.jsp?id=258



ADW GRADE 2 SCIENCE STANDARDS & INSTRUCTION GUIDE

		<p>sleep every night in order to stay healthy.</p> <ul style="list-style-type: none">• Some diseases are caused by organisms that are too small to see and may be spread to other people.• Washing hands with soap and water reduces the number of germs that can get into the body or that can be passed on to other people.		
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ADW GRADE 2 SCIENCE STANDARDS & INSTRUCTION GUIDE

LIFE SCIENCE (LS)	Standards	Core Concepts	Scientific Terms and Scientists	EdTech Resources
SC.2.LS.3	Develop representations to describe the diverse life cycles of living organisms.	<ul style="list-style-type: none"> Changes that organisms go through during their life form a pattern called a life cycle. Living organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. Details of body plans and structures may vary within the life cycles of plants and animals. Animals such as birds, amphibians, mammals, insects, etc. grow and develop in different ways. 	<ul style="list-style-type: none"> life cycle development mammals amphibians insects birds 	<ul style="list-style-type: none"> https://thewonderofscience.com/3ls11/ https://betterlesson.com/lesson/628613/life-cycle-of-a-butterfly-caring-for-our-caterpillars?from=cc_lesson
SC.2.LS.4E	Develop a model that mimics the function of an animal in dispersing seeds or pollinating plants.	<ul style="list-style-type: none"> Reproduction is essential to the continued existence of every kind of organism. Flowering plants reproduce through seeds. These plants require pollination for seeds to develop. Animals can move around, but plants cannot, and they often depend on animals for pollination or to move their seeds around. Some animals have specific natural structures that help them to pollinate plants (e.g., bees have fuzzy bodies to which pollen sticks; hummingbirds have bills that transport pollen). Some animals have specific natural structures that help them to disperse seeds (e.g., hair that snares seeds, squirrel cheek pouches that transport seeds). 	<ul style="list-style-type: none"> pollination pollinator seed seed dispersal 	<ul style="list-style-type: none"> https://betterlesson.com/browse/common_core/standard/2092/ngss-2-ls2-2-develop-a-simple-model-that-mimics-the-function-of-an-animal-in-dispersing-seeds-or-pollinating-plants



ADW GRADE 2 SCIENCE STANDARDS & INSTRUCTION GUIDE

EARTH AND SPACE SCIENCE (ESS)	Standards	Core Concepts	Scientific Terms and Scientists	EdTech Resources
SC.2.ESS.1	Obtain and communicate information to compare the properties and uses of Earth's materials.	<ul style="list-style-type: none"> • Earth is made of different materials, including rocks, sand, soil, and water. • A natural resource is material that people use that comes from Earth. • Examples of natural resources are soil, water, air, and trees. • Examples of uses for natural resources include soil and water to grow plants; rocks to make roads, walls, or buildings, or sand to make glass. • Natural resources can be conserved (for example reducing, reusing, or recycling trash, decreasing our use of water, or replanting trees). 	<ul style="list-style-type: none"> • natural resources • conservation • recycling 	<ul style="list-style-type: none"> • https://www.youtube.com/watch?v=Qw6uXh9yM54
SC.2.ESS.2	Observe a variety of soil samples and describe in words and pictures the soil properties in terms of color, particle size and shape, texture, and recognizable living and nonliving items.	<ul style="list-style-type: none"> • Soil is an important natural resource on Earth. • Soil with sufficient water, air, and nutrients allows plants to grow. • The properties of soil include color, particle size and shape, texture, and recognizable living and nonliving items. • The solid part of soil that was once part of an 	<ul style="list-style-type: none"> • natural resource • soil • color • particle size • shape • texture • living 	<ul style="list-style-type: none"> • https://serc.carleton.edu/sp/mnstep/activities/26928.html



ADW GRADE 2 SCIENCE STANDARDS & INSTRUCTION GUIDE

		<p>organism is organic matter. (This includes roots, leaves, twigs, bacteria, etc.)</p> <ul style="list-style-type: none"> The inorganic component of soil includes weathered rock. Soil maps can show the different types of soil in different areas of the Earth. 	<ul style="list-style-type: none"> nonliving rock weathering 	
SC.2.ESS.3	Obtain information from maps and images to identify where water, whether solid or liquid, is found on Earth.	<ul style="list-style-type: none"> Water is an important natural resource for humans and all other organisms on Earth. Water is found in the ocean, rivers, lakes, and ponds. Most of Earth's surface is covered in water. Maps and images (such as those from satellites) show the shapes and kinds of land and water in any area. Water exists as solid ice and in liquid form. Most of Earth's water is salt water. Most of Earth's freshwater is frozen. 	<ul style="list-style-type: none"> oceans coast freshwater salt water streams rivers lakes glaciers 	<ul style="list-style-type: none"> https://betterlesson.com/browse/common_core/standard/2101/ngss-2-ess2-3-obtain-information-to-identify-where-water-is-found-on-earth-and-that-it-can-be-solid-or-liquid
SC.2.ESS.4E	Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.	<ul style="list-style-type: none"> Wind and water can change the shape of the land. Water, ice, wind, living organisms, and gravity break rocks, soils, and sediments into smaller particles and move them around. Humans build structures and use various materials to change the effects of water and wind on the land. 	<ul style="list-style-type: none"> weathering erosion gravity wind break 	<ul style="list-style-type: none"> https://www.explorngnature.org/db/view/Grade-2-2-ESS2-Earthrsquos-Systems



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		<ul style="list-style-type: none">• Because there is always more than one possible solution to a problem, it is useful to compare and test designs.• Developing and using technology has impacts on the natural world		
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Grades K-2 Engineering Standards (E)

SC.K-2.E.1 Pose questions, make observations, and obtain information about a situation people want to change. Use this data to define a simple problem that can be solved through the construction of a new or improved object or tool.

SC.K-2.E.2 Develop a simple sketch, drawing, or physical model to illustrate and investigate how the shape of an object helps it function as needed to solve an identified problem.

SC.K-2.E.3 Analyze data from the investigation of two objects constructed to solve the same problem to compare the strengths and weaknesses of how each performs.