PRAIRIE-HILLS ELEMENTARY SCHOOL DISTRICT 144

CURRICULUM MAP 1ST GRADE - SCIENCE

PHYSICAL

GRADE 1 SCIENCE — REVISED 2016

Next Generation Science Standard Performance Expectations	Performance Outcomes	Instructional Resources	Assessments
1-PS4 Waves and their Applications in Technologies for Information Transfer **1-PS4-1.Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate**. [Clarification Statement: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.] **1-PS4-2.Make observations to construct an evidence-based account that objects can be seen only when illuminated.** [Clarification Statement: Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.] **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.** [Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).] [Assessment Boundary:	**Science and Engineering Practices** **Planning and Carrying Out Investigations** Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. With guidance, plan and conduct an investigation in collaboration with peers. (K-PS2-1) **Analyzing and Interpreting Data** Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. Analyze data from tests of an object or tool to determine if it works as intended. (K-PS2-2) **Connections to Nature of Science** Scientific Investigations Use a Variety of Methods Scientists use different ways to study the world. (K-PS2-1) **Disciplinary Core Ideas** **PS2.A: Forces and Motion** Pushes and pulls can have different strengths and directions. (K-PS2-1),(K-PS2-2) Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (K-PS2-1),(K-PS2-2) **PS2.B: Types of Interactions** When objects touch or collide, they push on one another and can change motion. (K-PS2-1) **PS3.C: Relationship Between Energy and Forces** A bigger push or pull makes things speed up or slow down more quickly. (secondary to K-PS2-1) **ETS1.A: Defining Engineering Problems** A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. (secondary to K-PS2-2) **Crosscutting Concepts** **Cause and Effect** Simple tests can be designed to gather evidence to support or refute student ideas about causes. (K-PS2-1),(K-PS2-2)	**http://www.adayinfirstgrade.com/2014/03/fun-with-force-and-motion.html** 1-PS4 www.projectssharedtexas.org www.thehappyscientist.com www.pbslearningmedia.org www.noodle.com **www.weebly.com** www.illinois.edu (science2schools) www.sciencedaily.com www.gamequarium.com www.internet4classrooms.com https://www.teacherspayteachers.com/Product/Sound-and-Light-Science-Investigations-Experiments-For-Next-Generation-Science-1399958 Pinterest-twww.-Interactivesites.weebly.com/science.html, www.sciencekids.co.nz/gamesactivities.html www.ZOOM.activities.scienceIPBS 1-PSF-1Harcourt Science Unit F Chapter 11 Lesson 3 pg. 452-461 Project Based Learning Activity 454-455 Assessment pg. 461 1PS4-2, 1PS4-3 Harcourt Science Unit F Chapter 11 Lesson 2 pg. 444	Rubrics Performance assessment Project Based Learning Assessments Informal/Formal Assessments Teacher Observation pg. 451

Assessment does not include the speed of light.] **1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.*** [Clarification Statement: Examples of devices could include a light source to send signals, paper cup and string "telephones," and a pattern of drum beats.] [Assessment Boundary: Assessment does not include technological details for how communication devices work.]		Learning Activity pg. 446-447 Assessment quiz pg. 451 www.scholastic.com/teachers/activity/energy-light-and-sound-10 https://www.teacherspayteachers.com/Product/NGSS-Grade-1-Sound-Vibrations-Investigation-Performance-Assessment-1153933 http://mrstsfirstgradeclass-jill.blogspot.com/2011/12/states-of-matter.html http://www.harcourtschool.com/activity/states_of_matter/ District Resources: • Teacher Manual • hspscience.com • scholastic.com • discoveryeducation.com • science AtoZ • media cast • gaggle • Library • pinterest • Capstone Library • IPads	

GRADE 1 SCIENCE — REVISED 2016

Next Generation Science Standard Performance Expectations	Performance Outcomes	Instructional Resources	Assessments
1-LS1 From Molecules to Organisms: Structures and Processes **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.*** [Clarification Statement: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.] **1-LS1-2.Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive**. [Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).]	**Science and Engineering Practices** **Constructing Explanations and Designing Solutions** Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. Use materials to design a device that solves a specific problem or a solution to a specific problem. (1-LS1-1) **Obtaining, Evaluating, and Communicating Information** Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information. Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. (1-LS1-2) **Connections to Nature of Science** **Scientific Knowledge is Based on Empirical Evidence** Scientists look for patterns and order when making observations about the world. (1-LS1-2) **Disciplinary Core Ideas** **LS1.A: Structure and Function** All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1) **LS1.B: Growth and Development of Organisms** Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2) **LS1.D: Information Processing** Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1) **Crosscutting Concepts** **Patterns** Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-LS1-2) Structure and Function The shape and stability of structures of natural and designed objects are related to their function(s). (1-LS1-1) **Connections to Engineering, Technology, and Applications of Science** **Influence of Engineering, Technology, and Science on Society and the Natural World** Every human-made product is designed by applying some knowledge of the natural world and is built by using natural materials. (1-LS1-1)	**1-LS1** **www.weebly.com** **www.sciencekids.co.nz** **www.schoolofdragons.com** www.pbskids.com **www.seaworld.org** **www.plantsandanimals.ca** **www.sciencekids.com** www.sciencedaily.com www.gamequarium.com www.internet4classrooms.com **www.bbc.co.uk/schools/scienceclips/ages/6_7/plants_animals_env.shtml** http://theinspiredclassroom.blogspot.com/search?updated-max=2011-08-02T11:10:00-07:00&max-results=7 1LS1-1, 1-LS1-2 Harcourt Science Unit A Chapter 1 Lesson 4 pg. 76 Investigate Activity pg. 78-79 Assessment pg.85 152-155 Adaptations Assessment pg. 155 www.bing.com/videos videos of virtual videos science parent and offspring www.mrshopefirstgrade.blogspot.com/2011/12/character-traits.html	Rubrics Performance assessment Project Based Learning Assessments Informal/Formal Assessments Teacher Observation LS1-1 pg. 85 pg. 155 Harcourt Science pg. 65

1-LS3 Heredity: Inheritance and Variation of Traits. **1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents**. [Clarification Statement: Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.] [Assessment Boundary: Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.]ion of Traits	**Science and Engineering Practices** **Constructing Explanations and Designing Solutions** Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (1-LS3-1) **Disciplinary Core Ideas** **LS3.A: Inheritance of Traits** Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents. (1-LS3-1) **LS3.B: Variation of Traits** Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3-1) **Crosscutting Concepts** **Patterns** **Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-LS3-1)**	www.education.com/worksheets/plants-animals-the-earth 1-LS-1, 1LS-2 Harcourt Science Unit A Chapter 1 lesson 2 pg.58 Investigate Activity pg. 60-61 Assessment pg. 65 District Resources: • Teacher Manual • hspscience.com • scholastic.com • discoveryeducation.com • science AtoZ • media cast • gaggle • Library • pinterest • Capstone Library	

PRAIRIE-HILLS ELEMENTARY SCHOOL DISTRICT 144

CURRICULUM MAP 1ST GRADE - SCIENCE

EARTH

GRADE 1 SCIENCE — REVISED 2016

Next Generation Science Standard Performance Expectations	Performance Outcomes	Instructional Resources	Assessments
1-ESS1 Earth's Place in the Universe **1-ESS1-1.Use observations of the sun, moon, and stars to describe patterns that can be predicted.** [Clarification Statement: Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.] [Assessment Boundary: Assessment of star patterns is limited to stars being seen at night and not during the day.] **1-ESS1-2.Make observations at different times of year to relate the amount of daylight to the time of year.** [Clarification Statement: Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.] [Assessment Boundary: Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.]	**Science and Engineering Practices** **Planning and Carrying Out Investigations** Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. Make observations (firsthand or from media) to collect data that can be used to make comparisons. (1-ESS1-2) **Analyzing and Interpreting Data** Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (1-ESS1-1) **Disciplinary Core Ideas** **ESS1.A: The Universe and its Stars** Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. (1-ESS1-1) **ESS1.B: Earth and the Solar System** Seasonal patterns of sunrise and sunset can be observed, described, and predicted. (1-ESS1-2) **Crosscutting Concepts** **Patterns** Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-ESS1-1),(1-ESS1-2) **Connections to Nature of Science** Scientific Knowledge Assumes an Order and Consistency in Natural Systems Science assumes natural events happen today as they happened in the past. (1-ESS1-1) Many events are repeated. (1-ESS1-1)	1-ESS1 Harcourt Science Unit D Chapter 9 pg. 348 Lessons 1,2,3 Investigate Activity pg. 352 Instalab p. 355 Investigate Activity pg. 360 Instalab pg. 364 Instalab pg. 371 1-ESS1 www.nineplanets.org www.planetsforkids.org www.pbskids.com www.weebly.com www.sciencedaily.com www.gamequarium.com www.internet4classrooms.com http://firstgradewow.blogspot.com/search/label/math?updated-max=2013-03-25T18:00:00-07:00&max-results=20&start=10&by-date=false 1-ESS1-2Harcourt Science Unit D Chapter 8 Seasons District Resources: • Teacher Manual • hspscience.com • scholastic.com • discoveryeducation.com • science AtoZ	Rubrics Performance Assessment Project Based Learning Assessments Informal/Formal Assessments Teacher Observation 1ESS-1 pg. 357quiz pg. 365 quiz pg. 373 quiz Test 376-377

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