

## Grade 1 Science Standards

### Earth & Space Science

#### 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.]

### Engineering, Technology, and the Application of Science

#### 1.ETS1 *Engineering Design*

- 1.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.** [Clarification Statement: Identifying a problem or need is necessary before designing a solution. For example, students can describe desired features or tools to solve a simple problem.][Assessment Boundary: Assessment does not include information regarding constraints (restraints or limitations).]
- 1.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.** [Clarification Statement: Solutions or designs can be addressed in stages before describing the overall plan or design.][Assessment Boundary: Assessment is limited to the development of a single, simple solution illustrated by a sketch, drawing, or physical model.]
- 1.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.** [Clarification Statement: Observations and measurements are collected and information is displayed to compare the performance of two objects. Students test solutions and collect data to identify the strengths and weaknesses of each object. Objects could feature shape, thickness, strength, speed, etc.][Assessment Boundary: Assessment is limited to sharing observations about the strengths and weaknesses of the analyzed data. Students will not be asked to propose an improved design based on the analyzed data.]

### Life Science

#### 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.][Assessment Boundary: Assessment is limited to external structures and their function.]

- 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).][Assessment Boundary: Assessment is limited to behavior of parent and offspring and does not include group behaviors to find food or defend themselves.]

*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.]

## Physical Science

*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.][Assessment Boundary: Assessment does not include wave structures such as amplitude and wavelength.]
- 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.][Assessment Boundary: Assessment does not include speed of light or the interaction of waves for the purpose of magnification.]
- 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.**<sup>^</sup> [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: Assessment does not include speed of light or the interaction of waves for the purpose of magnification.]
- 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.**<sup>\*</sup> [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.]

<sup>\*</sup>This performance expectation integrates traditional science content with engineering through a practice or disciplinary core idea.

<sup>^</sup>This performance expectation references [a proximal connection to climate change](#) and the disciplinary core ideas: Earth’s Systems and Earth and Human Activity.