Utah Science with Engineering Education (SEEd)

Grade 1

Seasons and Space Patterns S1.1	**1** Obtain, evaluate, and communicate information about the movement of the Sun, Moon, and stars to describe predictable patterns. Examples of patterns could include how the Sun and Moon appear to rise in one part of the sky, move across the sky, and set; or how stars, other than the Sun, are visible at night but not during the day. (ESS1.A) S1.1.1
	2 Obtain, evaluate, and communicate information about the patterns observed at different times of the year to relate the amount of daylight to the time of year. Emphasize the variation in daylight patterns at different times of the day and different times of the year. Examples could include varying locations and regions throughout the state, country, and world. (ESS1.B) S1.1.2
	3 Design a device that measures the varying patterns of daylight. Define the problem by asking questions and gathering information, convey designs through sketches, drawings, or physical models, and compare and test designs. Examples could include sundials for telling the time or tracking the movement of shadows throughout the day. (ESS1.B, ETS1.A, ETS1.B, ETS1.C) S1.1.3
The Needs of Living Things and Their Offspring S1.2	**1** Plan and carry out an investigation to determine the effect of sunlight and water on plant growth. Emphasize investigations that test one variable at a time. (LS1.C, LS2.A) S1.2.1
	2 Construct an explanation by observing patterns of external features of living things that survive in different locations. Emphasize how plants and nonhuman animals, found in specific surroundings, share similar physical characteristics. Examples could include that plants living in dry areas are more likely to have thick outer coatings that hold in water, animals living in cold locations have longer and thicker fur, or most desert animals are awake at night. (LS1.A, LS1.D) S1.2.2
	3 Obtain, evaluate, and communicate information about the patterns of plants and nonhuman animals that are alike, but not exactly like, their parents. An example could include that most carrots are orange and shaped like a cone but may be different sizes or have differing tastes. (LS3.A, LS3.B) S1.2.3
	4 Construct an explanation of the patterns in the behaviors of parents and offspring which help offspring to survive. Examples of behavioral patterns could include the signals that offspring make such as crying, chirping, and other vocalizations or the responses of the parents such as feeding, comforting, and protecting the offspring. (LS1.B) S1.2.4

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Light and Sound S1.3

1. **Plan and carry out an investigation to show the cause and effect relationship between sound and vibrating matter. Emphasize that vibrating matter can make sound and that sound can make matter vibrate. (PS4.A)** S1.3.1

2. **Use a model to show the effect of light on objects. Emphasize that objects can be seen when light is available to illuminate them or if they give off their own light. (PS4.B)** S1.3.2

3. **Plan and carry out an investigation to determine the effect of materials in the path of a beam of light. Emphasize that light can travel through some materials, can be reflected off some materials, and some materials block light causing shadows. Examples of materials could include clear plastic, wax paper, cardboard, or a mirror. (PS4.B)** S1.3.3

4. **Design a device in which the structure of the device uses light or sound to solve the problem of communicating over a distance. Define the problem by asking questions and gathering information, convey designs through sketches, drawings, or physical models, and compare and test designs. Examples of devices could include a light source to send signals, paper-cup-and-string telephones, or a pattern of drum beats. (PS4.C, ETS1.A, ETS1.B, ETS1.C)** S1.3.4