

# FOSS and SEEd Standards Alignment

## First Grade

### Strand 1.1: SEASONS AND SPACE PATTERNS

Seasonal patterns of motion of the Sun, Moon, and stars can be observed, described, and predicted. These patterns may vary depending on the region, location, or time of year.

STANDARDS	FOSS	MINIMUM
<p><b>1.1.1 Obtain, evaluate, and communicate information</b> about the movement of the Sun, Moon, and stars to describe predictable patterns.</p> <p>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)</p>	<p><b><i>Air and Weather</i></b></p> <p>Investigation 2: Observing the Sky</p> <p>Investigation 4: Looking for Change</p>	<p><b><i>Air and Weather</i></b></p> <p>Investigation 2: Observing the Sky</p> <p>Part 4 – 5 classes</p> <p>Investigation 4: Looking for Change</p> <p>Part 1- 2 classes</p>
<p><b>1.1.2 Obtain, evaluate, and communicate information</b> 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)</p>	<p><b><i>Air and Weather</i></b></p> <p>Investigation 2: Observing the Sky</p> <p>Investigation 4: Looking for Change</p>	<p><b><i>Air and Weather</i></b></p> <p>Investigation 4: Looking for Change</p> <p>Part 2- 2 classes</p>
<p><b>1.1.3 Design</b> 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.</p> <p>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)</p>	<p><b><i>Sound and Light</i></b></p> <p>Investigation 3, Part 2 “Sun and Shadows”</p> <p>Science Extension: “Make a Sundial” p. 203</p>	<p><b><i>Sound and Light</i></b></p> <p>Investigation 3, Part 2 “Sun and Shadows” – 2 classes</p> <p>Science Extension: “Make a Sundial” p. 203 – 2 classes</p>

## Strand 1.2: THE NEEDS OF LIVING THINGS AND THEIR OFFSPRING

Living things (plants and animals, including humans) depend on their surroundings to get what they need, including food, water, shelter, and a favorable temperature. Plants and animals have external features that allow them to survive in a variety of environments. Young plants and animals are similar but not exactly like their parents. In many kinds of animals, parents and offspring engage in behaviors that help the offspring to survive.

STANDARDS	FOSS	MINIMUM
<b>1.2.1 Plan and carry out an investigation</b> to determine the <u>effect</u> of sunlight and water on plant growth. Emphasize investigations that test one variable at a time. (LS1.C)	<b><i>Plants and Animals</i></b> Investigation 1: Grass and Grain Seeds Investigation 2: Stems Investigation 3: Terrariums	<b><i>Plants and Animals</i></b> Investigation 1: Grass and Grain Seeds Part 1: 3 classes Investigation 3: Terrariums Part 1- 2 classes
<b>1.2.2 Construct an explanation, by observing patterns</b> 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)	<b><i>Plants and Animals</i></b> Investigation 3: Terrariums	<b><i>Plants and Animals</i></b> Investigation 3: Terrariums Part 3- 3 classes
<b>1.2.3 Obtain, evaluate, and communicate information</b> about the <u>patterns</u> 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)	<b><i>Plants and Animals</i></b> Investigation 1: Grass and Grain Seeds Investigation 2: Stems Investigation 4: Growth and Change	<b><i>Plants and Animals</i></b> Investigation 2: Stems Part 2- 3 classes

<b>1.2.4 Construct an explanation of the patterns</b> 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)	<b>Plants and Animals</b> Investigation 4: Growth and Change	<b>Plants and Animals</b> Investigation 4: Growth and Change Part 3- 4 classes
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### Strand 1.3: LIGHT AND SOUND

Sound can make matter vibrate, and vibrating matter can make sound. Objects can only be seen when light is available to illuminate them. Some objects give off their own light. Some materials allow light to pass through them, others allow only some light to pass through them, and still others block light and create a dark shadow on the surface beyond them where the light cannot reach. Mirrors can be used to redirect light. People use a variety of devices that may include sound and light to communicate over long distances.

STANDARDS	FOSS	MINIMUM
<b>1.3.1 Plan and carry out an investigation to show the cause and effect relationship between sound and vibrating matter.</b> Emphasize that vibrating matter can make sound and that sound can make matter vibrate. (PS4.A)	<b>Sound and Light</b> Investigation 1: Sound and Vibration Investigation 2: Changing Sounds	<b>Sound and Light</b> Investigation 1: Sound and Vibration Part 1- 2 classes Part 2- 2 classes
<b>1.3.2 Use a model to show the effect of light on objects.</b> Emphasize that objects can be seen when light is available to illuminate them or if they give off their own light. (PS4.B)	<b>Sound and Light</b> Investigation 4: Light and Mirrors	<b>Sound and Light</b> Investigation 4: Light and Mirrors Part 1- 1 class Part 2 – 2 classes Part 3- 2 classes Part 4 – 4 classes
<b>1.3.3 Plan and carry out an investigation to determine the effect of materials in the path of a beam of light.</b> 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	<b>Sound and Light</b> Investigation 3: Light and Shadows Investigation 4: Light and Mirrors	<b>Sound and Light</b> Investigation 3: Light and Shadows Part 1 – 1 class Part 2 – 2 classes Part 3 – 2 classes

include clear plastic, wax paper, cardboard, or a mirror. (PS4.B)		
<b>1.3.4 Design</b> a device in which the <u>structure</u> of the device uses light or sound to solve the problem of communicating over a distance. <i>Define the problem by asking questions and gathering information, convey designs through sketches, drawings, or physical models, and compare and test designs.</i> 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)	<b><i>Sound and Light</i></b> Investigation 2: Changing Sounds Investigation 4: Light and Mirrors	<b><i>Sound and Light</i></b> Investigation 2: Changing Sounds Part 1 – 2 classes Part 2 – 2 classes Part 3 – 1 class Part 4 – 3 classes