SECOND GRADE: PLANTS AND ANIMALS

Standards Bundle

Standards are listed within the bundle. Bundles are created with potential instructional use in mind, based upon potential for related phenomena that can be used throughout a unit.

2-LS2-1 Plan and carry out an investigation to determine if plants need sunlight and water to grow. (SEP;3; DCI: LS2.A; CCC: Cause/Effect) *[Assessment Boundary: Assessment is limited to testing one variable at a time.]*

2-LS2-2 Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. (SEP:2; DCI: LS2.a, ETS1.B; CCC: Structure/Function)

2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats. (Systems) (SEP:3; DCI: LSD4.D; CCC: Systems) [Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.*] [Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.]*

Content Overview

This section provides a generic overview of the content or disciplinary core ideas as an entry point to the standards.

Plants and animals live in a variety of places. Plants will not survive and grow without sunlight and water. Animals live in habitats according to their needs (desert, arctic, grassland). Insects and animals help with pollination and seed dispersal. Seed dispersal and pollination are essential for more plants to grow.

Phenomena

Phenomena can be used at varying levels of instruction. One could be used to anchor an entire unit, while another might be more supplemental for anchoring just a unit. Please remember that phenomena should allow students to engage in the SEP and use the CCC/DCI to understand and explain the phenomenon.

- My yard is filled with dandelions.
- Deer crossing a busy road in town.
- I went for a walk, and I now have cockaburs on my jeans.
- Populations of polar bears are decreasing.
- The cars outside in the spring are covered with yellow dust.
- Some farmers in SD are planting wild flowers next to their crops.

Storyline

This section aims to decode not only the DCI connections, but also the SEP and CCC in a detailed account of how they possibly fit together in a progression for student learning, including both rationale and context for the bundle.

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Planning and Carrying Out Investigations ● Plan and conduct an investigation collaboratively to observations (firsthand or from media) to collect data which can be used to make comparisons. ● Produce data to serve as the basis for evidence to answer a question. **Developing and Using Models** ● Develop a simple model based on evidence to represent a proposed object or tool.	**LS2.A: Interdependent Relationships in Ecosystems** ● Plants depend on water and light to grow. ● Plants depend on animals for pollination or to move their seeds around. **ETS1.B: Developing Possible Solutions** ● Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. **LS4.D: Biodiversity and Humans** ● There are many different kinds of living things in any area, and they exist in different places on land and in water.	**Cause and Effect** ● Events have causes that generate observable patterns. **Structure and Function** ● The shape and stability of structures of natural and designed objects are related to their function(s).

Plants are living things, just like humans and animals, and they have specific needs that must be met to survive. Students can work in small groups to both plan and carry out investigations to determine the specific things plants must have to survive. Students can use data from their investigations as evidence that plants need sunlight and water to grow.

Plants depend on animals to help them scatter their seeds around, as well as for pollination. Students can explore different seed structures to consider how those seeds might be dispersed. Students can observe animals dispersing seeds through pictures, videos, or nature walks to determine possible patterns in seed dispersal and seed structure. Once students have had a chance to make observations, they can develop or use use models that mimic how animals assist plants in pollination and in the dispersion of seeds.

There are many kinds of plants and animals that exist in a variety of places on land and in water. In order to compare habitats, students can observe a variety of plants and animals in their habitats through media, on the playground, zoos, aquariums, etc. Students can compare and contrast the different kinds of living things and the habitats they live in. Include discussions about how many different kinds of life are in certain settings and how that diversity is healthy.

Formative Assessment

Formative assessment is crucial because all learners benefit from timely and focused feedback from others. It promotes self-reflection, self-explanation, and social learning. It can also make learning more relevant. Each of the questions below might be used throughout the formative assessment process. Specific prompts may focus on individual practices, core ideas, or crosscutting concepts, but, together, the components need to support inferences about students' three-dimensional science learning as described in a given bundle, standard or lesson-level performance expectation.

Resources to inform your formative assessment.

http://stemteachingtools.org/brief/30
http://stemteachingtools.org/brief/41
http://stemteachingtools.org/pd/sessionb

SEP Planning and Carrying Out Investigations

- How can you investigate what plants need to grow?
- Explain why there are so many different types of habitats.

SEP Developing and Using Models

- Create a model to show how seeds are dispersed.

CCC Cause and Effect

- How do you know bees help with pollination?
- Predict what would happen if there were no pollinators**.**

CCC Structure and Function

- What is the relationship between animals and their habitat.

Performance Outcomes

These are statements of how students use knowledge and are similar to the standards in how they blend DCI, SEP, and CCC, but at a smaller grain-size. These are potential outcomes for instruction as it plays out in lessons and activities in the classroom. It is important to also think of these as smaller outcomes that build toward the larger goal of mastering the standards.

- **Plan and conduct investigations** about the *effects* of sunlight and water on plants.
- **Develop and use models** to explain how the *function of animals* help plants survive.
- **Explain** the *cause and effect* relationship that plants depend on animals for pollination or to disperse their seeds.
- **Ask questions** about *the structure of habitats* and the relationships of plants and animals that are found in them.
- **Identify** *similarities and differences* between plants and animals in the *different habitats in which they live.*