

Unit 1: Growth, Development and Reproduction of Organisms

Content Area: **Science**
Course(s): **Science 6**
Time Period: **September**
Length: **25 Days**
Status: **Published**

Unit Summary

What influences the growth and development of an organism?

Students use data and conceptual models to understand how the environment and genetic factors determine the growth of an individual organism. They connect this idea to the role of animal behaviors in animal reproduction and to the dependence of some plants on animal behaviors for their reproduction. Students provide evidence to support their understanding of the structures and behaviors that increase the likelihood of successful reproduction by organisms. The crosscutting concepts of cause and effect and structure and function provide a framework for understanding the disciplinary core ideas. Students demonstrate grade-appropriate proficiency in analyzing and interpreting data, using models, conducting investigations, and communicating information. Students are also expected to use these practices to demonstrate their understanding of the core ideas.

This unit is based on MS-LS1-4 and MS-LS1-5.

Student Learning Objectives

SLO 1: Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. [Clarification Statement: Examples of behaviors that affect the probability of animal reproduction could include nest building to protect young from cold, herding of animals to protect young from predators, and vocalization of animals and colorful plumage to attract mates for breeding. Examples of animal behaviors that affect the probability of plant reproduction could include transferring, pollen or seeds, and creating conditions for seed germination and growth. Examples of plant structures could include bright flowers attracting butterflies that transfer pollen, flower nectar and odors that attract insects that transfer pollen, and hard shells on nuts that squirrels bury.](MS-LS1-4)

SLO 2: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. [Clarification Statement: Examples of local environmental conditions could include the availability of food, light, space, and water. Examples of genetic factors could include large breed cattle and species of grass affecting the growth of organisms. Examples of evidence could include drought decreasing plant growth, fertilizer increasing plant growth, different varieties of plant seeds growing

at different rates in different conditions, and fish growing larger in large ponds than they do in small ponds.] [Assessment Boundary: Assessment does not include genetic mechanisms, gene regulation, or biochemical processes.](MS-LS1-5)

Essential Questions/ Enduring Understandings

Essential Questions

1. What influences the growth (getting bigger) and development (change) of an organism?
2. Why are siblings similar and yet still different? Why do animals behave a certain way? Why do flowers look a certain way?
3. What can we do to enable the flowers, plants, and vegetables to grow as best as possible in the garden?

Enduring Understandings

Students will understand how plants and animals have structures and behaviors that help them survive and reproduce.

Students will understand how the growth of different organisms is impacted by both environmental and genetic factors.