

2.4 How Do Different Animals Grow and Change?

Story Extension for This Lesson:

In the story, Sam and Alex have been asked to help the animals in the forest. The day after their mysterious meeting with the wolf, coyote, and other creatures of the forest, Sam and Alex realized they had a lot to learn! "Do all animals grow the way we do?" asked Sam.

Overview: In this investigation, students will look at life cycles of different animals.

Grade: 2

Strand: Growth and Changes in Animals

Big Ideas:

- Animals have distinct characteristics. (Overall expectations 2 and 3)
- There are similarities and differences among different kinds of animals. (Overall expectations 2)

Overall Expectations:

2. investigate similarities and differences in the characteristics of various animals
3. demonstrate an understanding that animals grow and change and have distinct characteristics

Specific Expectations:

- 2.1** follow established safety procedures and humane practices specific to the care and handling of live animals, where appropriate, during science and technology investigations
- 2.3** investigate the life cycle of a variety of animals (e.g., butterflies, frogs, chickens), using a variety of methods and resources (e.g., observation of live animals in the classroom and in the schoolyard)
- 2.4** observe and compare changes in the appearance and activity of animals as they go through a complete life cycle (e.g., frog, butterfly)
- 2.7** use appropriate science and technology vocabulary, including life cycle, migration, adaptation, body coverings, and classify, in oral and written communication

Inquiry Skills

Observing, Predicting, Gathering Data, Reporting

Instructions:

Part 1:

As a class, discuss (in broad terms) how animals grow and change. Students are most familiar with mammals such as humans, dogs, and cats, so use one example to go over the life cycle of a mammal. Key ideas include that young mammals are usually very dependent on their mother (i.e., for milk), and don't change as dramatically as many other types of animals in nature. A small boy or girl or puppy looks a lot like an adolescent or adult.

Part 2:

In order to develop Observational skills, it is very beneficial to have live animals in the classroom to observe. For Life Cycles, butterfly larvae are an excellent way to observe a complete animal metamorphosis. Larvae can be purchased from the following link:

- https://www.boreal.com/store/content/externalContentPage.jsp?path=/www.boreal.com/en_CA/butterfly_information.jsp.

Another excellent and easy-to-care-for insect that undergoes complete metamorphosis is the mealworm. In fact, a mealworm is not a worm at all; it is the larvae of the adult darkling beetle. Tadpoles are a third option, but you must be sure to observe any local rules regarding the capture and/or release of live specimens.

NOTE: This may be an ongoing activity that could last a week or two as students observe live animals on a daily basis and look for changes.

Materials List:

- butterfly larvae, mealworms, tadpoles, or other animals that undergo metamorphosis
 - appropriate container for specimens
 - magnifiers to look for eggs or for detailed observations of a specimen
 - digital camera or tablets to document changes
- are many pictures online that you can access. Cut the individual stages out so they are on separate pieces of paper, and then each student can quickly conference with the teacher, arrange the pictures in an order of their choosing, and then defend and discuss their choice.

- Example: <http://displays.tpet.co.uk/ResourceImages/Previews/172/1.jpg>

Assessment Strategy:

A very quick and simple performance task to assess student understanding of life cycles is to give them labelled pictures of the stages of development of the organism you observed in class, and have them arrange the pictures into an appropriate chronological order of development. There

Handouts/Assessments on Following Pages:

- butterflymetamorphosis.jpeg
- mealwormmetamorphosis.gif
- humandevelopment.jpg





