

Animal Growth Patterns

Strand	Earth Patterns, Cycles, and Changes
Topic	Investigating patterns in animal growth
Primary SOL	K. 9 The student will investigate and understand that there are simple repeating patterns in his/her daily life. Key concepts include c) animal and plant growth.
Related SOL	K.1 The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which a) basic characteristics or properties of objects are identified by direct observation; c) a set of objects is sequenced according to size; k) objects are described both pictorially and verbally. K.7 The student will investigate and understand basic needs and life processes of plants and animals. Key concepts include c) plants and animals change as they grow, have varied life cycles, and eventually die; d) offspring of plants and animals are similar but not identical to their parents or to one another.

Background Information

The growth of animals and plants follows a pattern. Most plants grow from a seed, mature, and produce seeds. More plants will grow from the seeds that were produced and the cycle continues. Animals produce offspring that grow, mature, and produce more offspring. Most animals have a very simple life cycle which follows a pattern. The simple life cycle includes infant, youth, and adult. Some animals have a metamorphic life cycle which follows the pattern of egg, larva, pupa, and adult. Some examples of animals that have a metamorphic life cycle are butterflies and frogs.

Materials

- Books about animals
- Pictures of baby and adult animals
- Construction paper
- Crayons/markers

Vocabulary

animals, life cycle, pattern, adult, baby

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

Introduction

1. Read a book about animal babies. Discuss that many animal babies look similar to their parents. Show students a picture of a baby animal, and have them predict what kind of

animal it is. Include a picture of a caterpillar and a tadpole. After they have made predictions, show them the picture of the adult animal. When you get to the butterfly and frog, point out that the babies do not look like the parents. Talk about their life cycles and how their life cycles follow a pattern.

Procedure

1. Mix up the pictures, and give each student a picture. Have students sort themselves into two groups: Baby Animals and Adult Animals. Once they are sorted, talk about each student's picture and how they knew if it was a baby or adult.
2. Have students make a flipbook showing how an animal grows and changes. Talk about animals they could choose, such as a caterpillar turning into a butterfly, a chick hatching from an egg and becoming an adult chicken, a tadpole turning into a frog. The trick will be to make it look as if the animal is actually growing. (If you have any examples of similar "motion picture" flip books, share them with students.) Have students refer to animal books and/or Web sites to choose an animal and get ideas for illustrations.
3. Give each student one or two sheets of construction paper, and have them cut each piece into four pages for their books. Most students will be able to use one piece of paper to make a four-page book. Some pictures of growth may require more pages.
4. When students are ready to start drawing, remind them that they need to start by drawing the animal at the beginning of its life. Explain that each succeeding picture should show the animal growing slightly, thus making the picture a little larger. Making small changes in each picture that is drawn will create a greater effect. It is important to tell students to draw the pictures in the same spot on each page. When students have finished drawing the pictures, have them make a book cover.
5. Have students flip through the pages a few times to make sure the pictures are in order and to see if they need to add any more pictures to their books. Staple the books together. Encourage students to share their books with one another. Keep the books in the classroom library for a while so that everyone gets a chance to view each book.

Assessment

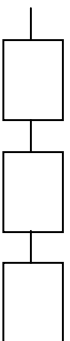
- Observe students making their flipbooks. Check to see if they are able to show the animal changing or getting bigger as it grows.
- Ask students to draw a picture of a given animal when it is a baby and when it is an adult (e.g., a puppy and a dog, a kitten and a cat). Check to see if the pictures show an understanding of how the animal changes as it grows.

Extensions and Connections (for all students)

- Have students go on walks with their families and identify animals in various stages of development in their neighborhood. Have students share what they observed.

Strategies for Differentiation

- For students who are developing fine motor skills, have them draw pictures showing an animal throughout its lifecycle. Use a different sheet of paper for each picture. Connect the papers together by attaching them with a piece of string, as shown to the right. Hang them from the ceiling.



- Using a three column graphic organizer, classify pictures of animals at various stages of their life cycle.
- Use pictures of animals from magazines to create the flipbook.
- Change the number of pages for the flipbook.