

First Grade: Life Science

PLANT AND ANIMAL TRAITS: Young and Old

Background Information

Living organisms reproduce offspring and go through life cycles. Some offspring may look similar to their parents, while others look very dissimilar to theirs. Immature organisms that look similar to their parents will share some, but not all traits with their parents. This may be observed in many types of plants and animals. Examining the similarities and differences assists in identification, grouping, and classification.

Performance Expectation

1-LS3-1 Heredity: Inheritance and Variation of Traits

Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.

<https://www.nextgenscience.org/dci-arrangement/1-ls3-heredity-inheritance-and-variation-traits>

Disciplinary Core Ideas

LS3.A: Inheritance of Traits

Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents. (1-LS3-1)

LS3.B: Variation of Traits

Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3-1)

Science and Engineering Practices

Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.

Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (1-LS3-1)

Crosscutting Concepts

Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence. (1-LS3-1)

Objectives

- Students will work cooperatively to identify similarities and differences between immature and mature animals.
- Students will observe seeds as they grow.
- Students will identify similarities and differences between immature and mature plants.

Materials

Part 1

- 7 Sets Animal Matching Cards
- Same Different Student Page

Part 2 (Students work in pairs or groups of four.)

- Seedling Journal Student Pages
- Radish Seeds (Group size will determine the number of seeds per group.)
- Paper Plates
- Paper Towels
- Hand Lenses
- Cup
- Water
- Soil – *for transplanting seedlings - optional*
- Containers – *for transplanting seedlings - optional*

Advance Preparation

Determine group size for similarities and differences drawing.

- Decide when and how the student journal pages will be distributed, completed, and bound.
- Decide when students will design their journal cover
- Determine how and where seeds will be grown and stored throughout the exploration.
- Note: Paper plates are provided in the materials. Alternately you could use plastic zipper baggies.
- Gather paper towels.
- Make a watering plan. The frequency and amount of water will vary depending upon the classroom conditions.

Suggested Implementation Part I

Part 1. You may wish to begin by hosting a class discussion around these ideas:

- *What types of baby or young animals have you seen?*
- *What types of baby or young plants have you seen?*
- *Share with us how they looked.*

Explain to the students they will now have a chance to look at cards that have pictures of babies and pictures of their parents. Their task is to match the young animal or plant with the grown-up animal or plant. Distribute a set of pictures to each group of four students. Allow ample time for this to occur.

Once all of the groups are done, you may wish to have a gallery walk so they are able to view other group's ideas. Students then return to their original groups. Rearrangement of pairs, based on any observations or conversations during the gallery walk, may occur. Encourage groups to discuss similarities as well as differences among the immature and the mature organisms.

Using your decision as to group size, have pairs of students select their favorite animal or plant. Next distribute the Same Different student page, one per group.

Student pairs will complete the following:

- *Write the name of the animal or plant they selected at the top of the page.*
- *List, draw, or write traits that are the same and different in the appropriate part of the student page.*

Debrief Part 1

- *Have groups share their ideas about their favorite animal or plant.*
- *How babies or young the same as the grownup?*
- *How are babies or young different than the grownup?*
- *Tell us about your idea.*
- *Why do you think this happens?*

Suggested Implementation Part 2

Students will develop a journal throughout this activity.

- ☆ *Journal Cover:* Complete according to your decision.
- ☆ *Seed Observation Journal Page:* Distribute radish seeds and hand lenses so students may begin by observing the seeds. Encourage students to share their observations with one another as they work. Provide the Seed Observation Journal page for recoding of observations. Encourage use of both drawings and words in the journal.
- ☆ *What I Did Journal Page:* Ask students what seeds need to grow. You may wish to have them write their ideas. Share your plan regarding how students will grow the seeds. Students complete this page with planting details.
- ☆ *On This Day Journal Page:* Students will record both the day of and their observations. It is suggested a new page is used for each day. A copy of this page is needed for each observation day.
- ☆ *What I Learned Journal Page:* At the conclusion of the exploration students will explain what they learned about the “stages” of radish seed growth. Using drawings, diagrams, arrows, and words are encouraged.

Students may read, compare, and discuss their journals with each other.

Debrief Part 2

- *What did the seeds look like when you first saw them?*
- *Did the seeds look the same or different than each other?*
- *Did the seeds look the same or different while they were growing?*
- *How did the seedlings look the same as each other?*
- *How did the seedlings look different than each other?*
- *When the seeds were growing, did they look the same or different than a full grown plant?*
- *When did the seeds look like a full grown plant?*
- *Note: If the seeds did not grow completely, you may wish to use Seedling power point for the discussion.*

Resources

(<http://www.kbs.msu.edu/wp-content/uploads/2017/02/NGSS-Interactive-Read-Alouds.pdf>)

- Waddell, M. (2002). *Owl Babies*.
Three baby owls awake one night to find their mother gone, and they can't help but wonder where she is. What is she doing? When will she be back? What scary things move all around them?
- Fleming, D. (1998). *Mama cat has three kittens*.
Using her own cats as models, Denise Fleming has captured the moods, expressions, and antics of a mother cat and her kittens. But there is a rebel in every crowd, and Boris is sure to charm readers who will recognize themselves in his contrary ways.

Assessment

The following single point rubric can be used to assess student understanding. For each of the criteria listed below, either circle the proficient description or add notes to a box indicating why the student's performance was either lacking or exceptional.

| Areas that need improvement. Developing Performance | Criteria for Proficient Performance | Evidence of exceeding standards. Advanced Performance |
|---|---|---|
| | Can explain similarities and differences of adults and the young of several species of animals | |
| | When asked about the stages of plant growth they can reference observations from growing seeds. | |