

This e-book does not use all of the grade-level elements for the practices and crosscutting concepts, but that does not mean that you should not be aware of the other practices and concepts your students need to know. For a full list of all grade-level elements for the science and engineering practices and crosscutting concepts, refer to <u>Appendix A</u>.

For engaging in literacy ideas, refer to Appendix B.

## **Disciplinary Core Ideas (DCIs)**



This e-book examines a disciplinary core idea while using crosscutting concepts and practices to create a three-dimensional understanding of patterns of animal behaviors that help young survive.

LS1.B: Growth and Development of Organisms Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive.

#### **Science and Engineering Practices**

Engaging in the practices of science helps students understand how scientific knowledge develops; such direct involvement gives them an appreciation of the wide range of approaches that are used to investigate, model, and explain the world. The actual doing of science or engineering can also pique students' curiosity, capture their interest, and motivate their continued study.

(NRC Framework for K-12 Science Education, 2012)

Through classroom experiences supported by this e-book, students should be capable of performing the following practices:

The specific science and engineering practices addressed include:



#### Asking Questions and Defining Problems

- Ask questions based on observations to find more information about the natural and/or designed world.
- Ask and/or identify questions that can be answered by an investigation.
- Define a simple problem that can be solved through the development of a new or improved object or tool.

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## **Topic 1**

# Animal Parents and Their Young

This topic introduces children to animals and the offspring they need to care for. Students will make comparisons between the different animals, match young animals to their parents, and locate the shelters the adult animals use to hide their young. The vocabulary words help students identify the young animal names and reinforce that all of the animals produce young.

By the end of the topic, students will be able to:

- explain that animals have offspring;
- make observations about how adult animals care for their young;
- compare how parents of different types of animals help their babies survive;
- observe patterns in how parents raise their young;
- evaluate what parents do that affects the babies' survival; and
- compare shelters to determine how each shelter is best for each type of animal.

#### **Pre-Assessment A**

Ask students the following questions as a pre-assessment:

- What do young animals need to survive?
- How can parents help their young survive?



The book opens with a view of the forest and lake environment that is the habitat for the animals featured in this book. The readers will look closer to locate the four animals: squirrel, fox, beaver, and eagle. Independent readers are supported with the pop-ups, which feature close-up photos of the animals and their names.

#### Activity

Have students see if they can locate and identify each animal before selecting and revealing their names. Encourage readers to look at the illustration and point to what they observe about the environment that these animals share.

Ask students to use observations to describe details they notice in the illustration. Engage students in a discussion to ask questions and communicate ideas about the animals they see. Set the stage for students to begin thinking about patterns they notice.

- Where is each animal?
- Why is the eagle in the tree? (It is up high so it can look out for danger and see food.)
- Why are the animals living in the forest? (This is where they are protected and find food.)
- Why are the animals living near a lake? (A lake could give them water and food.)
- What is true about all four animals? (They all need a safe place to live. They all need to find food, water, and shelter.)

## Page 2 & 3



Students look for the baby fox kit and see a photo of the kit when it is located in its den. This begins the discovery of each animal's offspring, what they are called, what they look like, and where they live. By actively looking for the kit, learners begin to think about how the mother is caring for her young by keeping it hidden and protected. The interactive pop-up animals give feedback to independent readers to help them recognize when they are looking in the right places.

Students locate the baby beaver kit, also hidden from view, in the beaver lodge. When the lodge is selected, a photo of the kit is revealed. Looking for the beaver kit supports students to find a pattern that young animals are kept safe and out of sight by their parents.

#### **Thinking Beyond**

Guide students to notice patterns, communicate information, and construct explanations.

- How is the fox kit like the adult? How is it different? (Possible answer: The fox kit has fur, large pointed ears, and a bushy tail. It is smaller than the adult.)
- How is the beaver kit like the adult? How is it different? (Possible answer: The beaver kit has fur, small round ears, and a black nose. It is smaller than the adult.)
- Why do you think these young animals are hidden? (They are hidden from animals that might eat them.)
- How do you think the fox is taking care of its young? (The fox is keeping its young safe in a shelter.)
- What might the beaver need to do to take care of its young? (The beaver will need to find food for its young and keep it warm and comfortable.)

Making Shelter	
Part 2	
Match each adult animal to its shelter.   Image: Constraint of the shelter. <td></td>	
Why does each parent animal make a shelter?   Check Your Thinking	6

Readers compare and match the adult animals to their shelters. Interactive matching allows independent readers to self-check that they are correctly matching the animals to their shelters. The "Check Your Thinking" question and pop-up answer can be used as a self-check to guide readers to check for understanding about how adult animals use shelters to protect their young.

#### Discourse

Provide time for students to generate their own questions about the animal shelters. Then use the following prompts as necessary to guide students to communicate information and construct explanations.

- **How are the shelters alike (patterns)?** (The shelters all keep the young hidden and protected.)
- How are they different? (They are in different places and made with different things.)
- How do adult animals make shelters (structure and function)? (The fox digs out its shelter, and the other animals build their shelters with sticks or leaves.)
- Why do they make the shelters (constructing explanations)? (Animals make shelters to protect their young.)
- How are all the shelters used (constructing explanations)? (They are all used as a place to care for the young.)
- How are shelters used to keep young animals safe? (The shelters keep babies safe from other animals and keep them warm.)

<text><text><image><image><image>

Readers view an illustration to find an eagle in the beaver lodge and a beaver in the eagle's nest. This illustration shows how silly it looks to have animals in the wrong shelters. It also guides readers to stop to think about how the structure of specific shelters helps the animals survive.

#### **Art Connection**

Have students draw either the eagle or the beaver in its correct shelter. Have students share their drawings and explain the characteristics of the animal and its shelter. If time permits, have students draw a baby animal on a separate piece of paper and make a slit in their drawing so the baby animal can pop up into the shelter. Have students share their drawings in a display.

#### **English Language Arts Connection**

#### Speaking and Listening: Presentation of Knowledge and Ideas

This activity reinforces CCSS ELA standard <u>CCSS.ELA-Literacy.SL.1.5</u> by having students use drawings to support concepts about animal shelters.

#### **TOPIC 2: Making Shelter**

### Page 8

A squirrel spends most of its time in trees. Parent squirrels build a nest called a **drey**. Help this squirrel build its drey.



Students get an idea of how squirrels build shelters by selecting leaves and twigs to build a drey. Independent readers use the "Check Your Thinking" question and pop-up answer to get ideas for supporting an explanation about how the squirrel makes a nest that protects its young.

#### Activity

Students carry out an investigation to obtain evidence that squirrels build nests in trees.

#### Materials

- Clipboards with charts such as the one below
- Pencils
- Binoculars to share (optional)

#### Directions

- 1. Prior to the outdoor investigation, survey trees on the playground, in your school's neighborhood, or in a nearby park to locate four trees that hold one or more squirrel nest.
- 2. Take students to the identified trees and have them look for and count the squirrels and squirrels' dreys in each tree and record the data on the chart.

The beaver has been busy building its lodge. Place the pictures in order to help the beaver finish the lodge.



Readers sequence the pictures of the beaver building its lodge to increase their awareness of the work stages the adult beaver completes to make a safe place for its young. Pictures remain in place when put in the correct sequence, reinforcing choices made by independent readers. The "Check Your Thinking" question and response also provide a self-check for connecting ideas to the way beavers use shelters to care for their young.

#### **Misconceptions**

Students might think a beaver lodge and fox den are the same. Use the questions in the Thinking Beyond section below to help students analyze information in the text and illustrations to make comparisons. They will see that the fox den is dug from the ground, while a beaver lodge is built with a mound of sticks in the water.

Help students recognize that a beaver spends much of its time in the water, while a fox stays on land. This is why the beaver makes its lodge with an entrance underwater, while the fox enters the den from a hole in dry ground (structure and function).

Other parents also feed their young milk. Animals that feed their babies milk are **mammals**. Move the mammals into the chart.



Students decide what other animals feed their newborns milk. They will use a drag-and-drop chart to organize their thinking. These choices support students to construct explanations and make connections about what animals are mammals. The "Check Your Thinking" question encourages students to apply their understanding by explaining why an eagle is not a mammal.

#### **Thinking Beyond**

Ask students to think of other characteristics that help them know if an animal is a mammal, bird, or something else. Explain that scientists group animals according to their characteristics. Think like scientists and decide on characteristics that mammals and birds have and record their ideas in a chart like the one below (obtain, evaluate, and communicate information). Use photos and information from the e-book and other sources as needed to help students identify these differences. Guide students to identify characteristics that are true for all mammals and all birds (patterns).

Example chart:

Mammals	Birds
have fur or hair	have feathers
give live birth	lay eggs
two or four legs	two legs
feed young milk	do not feed young milk

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