
Animals and Their Adaptations



Kindergarten Teacher Resource Guide

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Lesson Summary: The *Animals and Their Adaptations* program provides students with an opportunity to touch and examine live animals and natural specimens from a variety of taxonomic groups, including arthropods, amphibians, reptiles, and mammals. During the animal presentations, students will participate in an instructor-led group discussion emphasizing each animal's diet, ecological role, habitat, and physical adaptations (structure and function) needed for survival.

Vocabulary: Below are words and concepts that relate to the *Animals and Their Adaptations* program.

Adaptation (in biology): a change in either the structure or functions of an organism over time that better enables it to survive and reproduce in its environment. An adaptation can be structural (e.g., talons for seizing prey), physiological (e.g., ability to change color), or behavioral.

Amphibian: a cold-blooded animal that starts life in a wet environment but can live on land once it matures

Arthropod: an animal with an exoskeleton and jointed legs

Biology: the science that is concerned with the growth, development, and functioning of living things

Camouflage: something (such as color or shape) that protects an animal from attack or helps it to surprise others by making the animal difficult to see against the area surrounding it

Carnivore: an animal that feeds primarily on meat

Diversity: the state or condition of being unlike; dissimilarity or variety

Ecosystem: a community of living things, together with their environment

Environment: everything around an animal, its natural surroundings including the air, water, soil, and plants

Habitat: the particular natural environment (place) where an animal or plant is usually found.

Herbivore: an animal that feeds solely on plants

Inheritance: the genetic process of passing characteristics to succeeding generations, or the characteristics thus transmitted

Mammal: a warm-blooded animal that has a body more or less covered by hair, gives live birth, and nourishes its young with milk from the mammary glands of the female

Mimicry: the imitation by an organism of its environment or of other organisms as a means of survival. **Also: mimic**

Niche: the role or part that an animal plays in its habitat or environment

Omnivore: an animal that feeds on both plants and animals

Poisonous: dangerous to bite; containing chemicals that harm the body when eaten

Predator: an animal that hunts and eats other animals

Prey: an animal that is hunted or killed by another animal for food

Reptile: a cold-blooded animal with dry scaly skin that typically lays soft-shelled eggs on land

Venomous: dangerous to be bitten by; capable of biting, stinging, or otherwise wounding other creatures with harmful chemicals

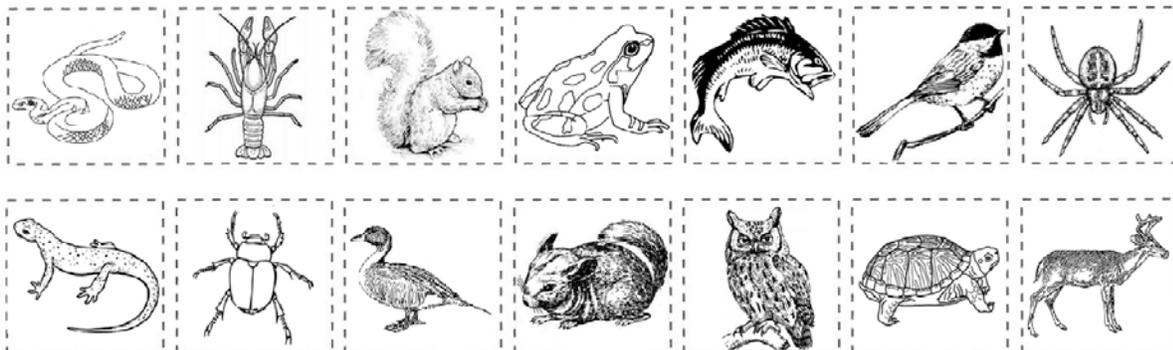
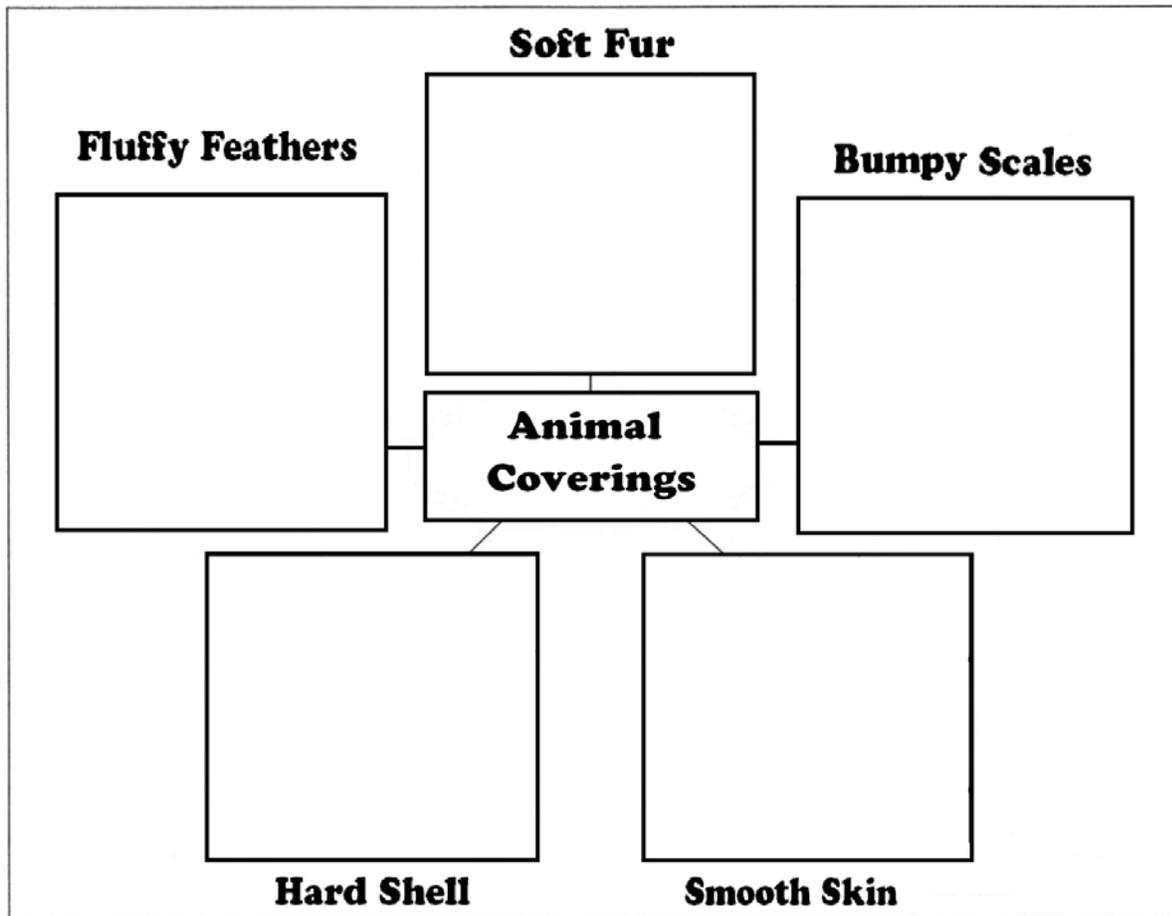
Animals and Their Adaptations: Animal Coverings Activity Page

Name: _____

What's on the Outside?

Different animals have different types of body coverings. Give it a try!

Directions: Cut out the animal pictures at the bottom of the page, then paste them into the correct square on the diagram.



Animals and Their Adaptations: Extension Activities

The extension activities listed below are from RAFT (Resource Area For Teaching). RAFT educational content is available online (www.raftbayarea.org) at no cost and is aligned to California Science Standards and Next Generation Science Standards. Below is a selection of post-visit activities from RAFT to build on student learning about animals and adaptations.

[RAFT Idea: Blubber Gloves - Resource Area For Teaching](#)

Grades Covered: Pre-K through 12

Subjects Covered: Physical Science, Life Science

Curriculum Topics: Marine mammals, Environments, Ecology, Adaptations

Description: Adaptations in physical structure or behavior may improve an organism's chance for survival.

www.raftbayarea.org/ideas/Blubber%20Gloves.pdf

[RAFT Idea: Baby, It's Cold Outside - Resource Area For Teaching](#)

Grades Covered: K through 10

Subjects Covered: Life Science

Curriculum Topics: Environments, Habitats, Adaptations

Description: This diorama helps students visualize life and ecology in an arctic environment.

<http://www.raftbayarea.org/ideas/Baby,%20It's%20Cold%20Outside.pdf>

[RAFT Idea: What Makes a Bird - Resource Area For Teaching](#)

Grades Covered: Pre-K through 3

Subjects Covered: Life Science

Curriculum Topics: Animals, Environments, Sorting & Classifying

Description: In this activity primary learners learn how to sort animals into two categories.

www.raftbayarea.org/ideas/What%20Makes%20a%20Bird.pdf

[RAFT Idea: Camouflage - Resource Area For Teaching](#)

Grades Covered: K through 12

Subjects Covered: Life Science

Curriculum Topics: Natural Selection, Ecosystems, Probability, Design

Description: In this activity, students will see the benefits of taking a closer look at the world around them.

www.raftbayarea.org/ideas/Camouflage.pdf

Animals and Their Adaptations: Education Standards

Our Animals and Their Adaptations program will contribute to students' ability to meet the California Science Content Standards, Common Core, and Next Generation Science Standards listed below.

California Science Content Standards Kindergarten:

Life Sciences: 2. Different types of plants and animals inhabit the earth. As a basis for understanding this concept:

- a. *Students know* how to observe and describe similarities and differences in the appearance and behavior of plants and animals.
- b. *Students know* how to identify major structures of common plants and animals.

Investigation and Experimentation: 4. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept:

- c. Students can describe the properties of common objects.

Excerpted from CA State Standards <http://www.cde.ca.gov/>

Common Core Kindergarten:

Speaking and Listening Standards: Students will...

1. Participate in collaborative conversations with diverse partners about *kindergarten topics and texts* with peers and adults in small and large groups.
 - a. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion).
 - b. Continue a conversation through multiple exchanges.
2. Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.
 - a. Understand and follow one- and two-step oral directions.
3. Ask and answer questions in order to seek help, get information, or clarify for understanding.
6. Speak audibly and express thoughts, feelings, and ideas clearly.

Excerpted from Common Core Standards <http://www.corestandards.org/>

Next Generation Science Standards Kindergarten:

Interdependent Relationships in Ecosystems: Animals, Plants, and the Environment

- **K-LS1-1:** Use observations to describe patterns of what plants and animals need to survive.
 - **Science and Engineering Practices**
 - **Analyzing and Interpreting Data:** builds on prior experiences and progresses to collecting, recording, and sharing observations.
 - Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-LS1-1)
 - **Scientific Knowledge is Based on Empirical Evidence:** Scientists look for patterns and order when making observations about the world. (K-LS1-1).
 - **Disciplinary Core Ideas**

Animals and Their Adaptations: Education Standards

- **LS1.C: Organization for Matter and Energy Flow in Organisms:** All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)
- **Crosscutting Concepts**
 - **Patterns:** Patterns in the natural and human designed world can be observed and used as evidence. (K-LS1-1)

K-ESS2-2

Other Topics Covered:

- **Disciplinary Core Ideas**
 - **ESS3.A: Natural Resources:** Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1)
- **Crosscutting Concepts**
 - **Systems and System Models:** Systems in the natural and designed world have parts that work together. (K-ESS3-1)

Excerpted from NGSS <http://www.nextgenscience.org/>