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# Animals and Their Adaptations



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## First-Grade 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

Definitions based on [www.dictionary.reference.com](http://www.dictionary.reference.com)

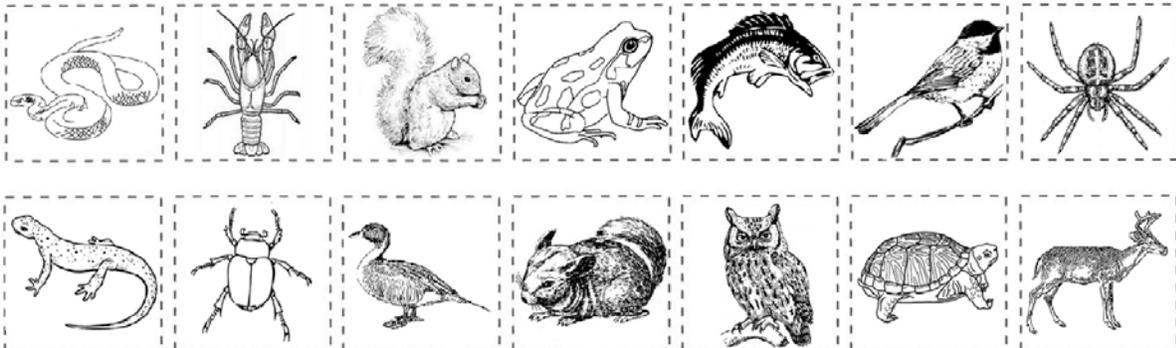
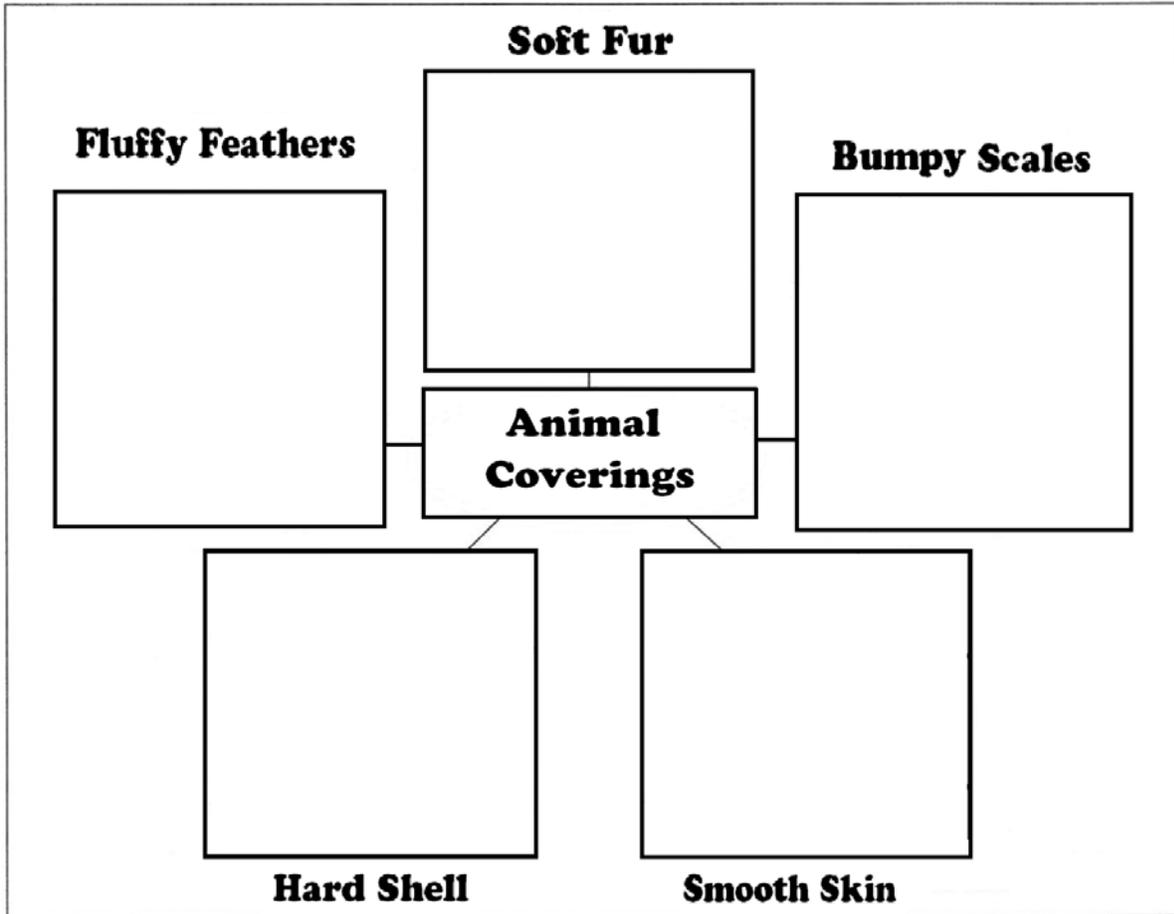
# Animals and Their Adaptations: Animal Coverings Activity Page

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](http://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](http://www.raftbayarea.org/ideas/Blubber%20Gloves.pdf)

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

**Grades Covered:** K through 6

**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](http://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](http://www.raftbayarea.org/ideas/Camouflage.pdf)

## **Animals and Their Adaptations: Education Standards**

*The following pages cite California Science Content Standards, Common Core Standards and Next Generation Science Standards which students will be exposed to during the program.*

### **California Science Content Standards First Grade:**

**Life Sciences: 2.** Plants and animals meet their needs in different ways. As a basis for understanding this concept:

- a. *Students know* different plants and animals inhabit different kinds of environments and have external features that help them thrive in different kinds of places.
- b. *Students know* both plants and animals need water, animals need food, and plants need light.
- c. *Students know* animals eat plants or other animals for food and may also use plants or even other animals for shelter and nesting.
- d. *Students know* how to infer what animals eat from the shape of their teeth (e.g. sharp teeth eat meat, flat teeth eat plants).

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

### **Common Core First Grade:**

**Speaking and Listening Standards:** Students will...

1. Participate in collaborative conversations with diverse partners about *grade 1 topics and texts* with peers and adults in small and large groups.
  - a. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
  - b. Build on others' talk in conversations by responding to the comments of others through multiple exchanges.
  - c. Ask questions to clear up any confusion about the topics and texts under discussion.
2. Ask and answer questions about key details from information presented orally.
3. Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

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

### **Next Generation Science Standards First Grade:**

#### **Structure, Function, and Information Processing**

- **1-LS3-1:** Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
  - **Science and Engineering Practices:**
    - **Constructing explanations and designing solutions:** Builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems.
    - Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (1-LS3-1)
  - **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)
- **Crosscutting Concepts:**
  - **Patterns:** Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-LS3-1)

**Other Topics Covered:**

- **Disciplinary core ideas:**
  - **LS1.A: Structure and function:** All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)
  - **LS1.D: Information Processing:** Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1)
- **Crosscutting Concepts:**
  - **Structure and Function:** The shape and stability of structures of natural and designed objects are related to their function(s). (1-LS1-1)

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