

UNIT OVERVIEW

The world is full of many types of animals. Animals share several common needs, but they also have diverse habits and characteristics. The unit Animals helps students discover what makes animals similar and what makes them different. Topics include habitat, diet, body parts, movement, special abilities, and more.

All books and Quick Reads are available at three reading levels to facilitate differentiated instruction.

- low reading level
- middle reading level
- high reading level

THE BIG IDEA

Understanding the diversity among animals helps us appreciate and enjoy the uniqueness of all creatures. We may also think about how we treat animals and how we as humans fit into the animal kingdom.

Other Topics

This unit also addresses topics such as: adaptation for survival, defense mechanisms, and humans as animals.

SPARK

This unit spark is designed to get students thinking about the topic and to generate curiosity and discussion.

Materials

- posters or large photographs of various animals, including one human
- posters or large photographs of plants or things made from plant parts
- posters or large photographs of non-living things

Activity—Part One

Mix the order of the posters. For each poster, invite a volunteer to come forward and hold it up, until students are holding up as many posters as you want the rest of the class to see. Call on students to name the subject of each photo. Discuss the questions below with students.

Which of these pictures shows an animal? How can you tell?

Why isn't a _____ an animal?

How are all these animals alike?



How are these animals different?

What does an animal need that the other things do not need?

Are people animals? Why or why not?

During discussion, you can have the students holding the posters move into groups: animal/not an animal or other classifications.



Activity—Part Two (Optional)

Have each student think of an animal and two or three ways to describe it. Suggestions could include color, size, number of legs/wings/fins, sound it makes, where it lives, etc. Ask for volunteers to announce only their descriptions, and then have them call upon a peer to try to guess the animal. Allow several guesses before revealing each animal.

Discuss: If I tell you my animal has four legs, lives in a forest, and is furry, you might think my animal is a deer. But it might be a squirrel, or even a bear! How could that happen? Some animals have the same parts, live in the same places, feel the same, etc.

Have students think again of their animals. Invite students to walk around the room for a few minutes. Each time two students meet, they should each name their own animal and try to identify one way the two animals are the same and one way they are different. (If two students name the same animal, they may each move on to another student, or try to name a way that two of that animal could be different from each other.) Reconvene the group and discuss several examples.

Vocabulary

Many of the unit's vocabulary terms are related to the spark activity and can be introduced during the spark. For vocabulary work, see the Vocabulary section in this *Unit Guide*.

PRIOR KNOWLEDGE



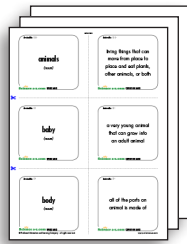
Probing Questions to Think About

- What do animals need to live?
- Where do animals live?
- What do animals eat?
- How do animals move? (Encourage demonstrations.)
- What do animals feel like when you touch them?
- What sounds do animals make? (Encourage demonstrations.)

Discuss that it is hard to answer these questions because each animal is special. But there are some ways that all animals are the same. Encourage students to think about this privately for a moment. Let students know they will read more about this soon.

As a group, select one familiar animal. Have students help describe as many things about it as possible. Display responses on butcher paper, chalkboard, etc. if appropriate. Students may enjoy having time to act like this animal. Once the list is complete, ask students whether there is anything else they would like to learn about this animal. Record these questions for possible future investigations. Repeat with other animals if desired.

VOCABULARY



Use the terms below for vocabulary development throughout the unit. They can be found in boldface in the *Nonfiction Book*, the *Quick Reads*, and/or other unit resources. These terms and definitions are available on *Vocabulary Cards* for student practice.

Core Science Terms

These terms are crucial to understanding the unit.

animals	living things that can move from place to place and have to eat plants, other animals, or both for food
baby	a very young animal that can grow into an adult animal
body	all of the parts an animal is made of
body covering	the outer layer of an animal's body
change	to become different
color	any shade or mixture of shades made when light reflects off something
different	not the same
grow	to get bigger
habitat	the place where an animal lives
same	alike; similar; not changing
shape	how something looks around the outside
size	how big or small something is
skin	the outside layer of tissue on an animal's body

Other Key Science Terms

The following vocabulary is not essential for comprehending the unit but may enrich students' vocabulary.

claws	hard, curvy nails on the ends of the fingers or toes of some animals
flexible	able to bend without breaking
fresh water	water found in most rivers, lakes, and ponds
fur	the hair that covers the body of most mammals
hatch	to break out of an egg
human	a person
muscle	part of a body that helps it move by getting tight or loose
salt water	water found in oceans and seas
scales	thin, flat plates that cover many fish and reptiles
shed	to get rid of skin, feathers, hair, or horns
shell	a hard cover on the outside of some animals' bodies or their eggs that protects them
survive	to stay alive or continue to exist
talons	claws on the feet of birds like owls and hawks
teeth	hard, white, bony objects in the mouth used to bite and chew food

Vocabulary Activities

You may choose to introduce all the terms that will be encountered in the unit before assigning any of the reading components. *Vocabulary Cards* with the key science terms and definitions are provided. Dots on the cards indicate the reading levels of the *Nonfiction Book* or the *Quick Reads* in which each term can be found. If all level dots appear, the term may come from a non-leveled resource in the unit. Students can use these cards to review and practice the terms in small groups or pairs. They can also be used for center activity games such as Concentration.

For further vocabulary practice and reinforcement, you can choose from the *Word Work* vocabulary activities and the vocabulary *Graphic Organizers*. To build customized vocabulary lessons with terms related to animals, see [Vocabulary A-Z.com](http://www.vocabularya-z.com).

Students can use the *Word Smart* vocabulary *Graphic Organizer* to organize information on the science terms. You may want to assign each student one



to three words to share their vocabulary knowledge with classmates. Students who have the same word should first compare their *Word Smart* sheets with each other, and then report to the larger group.

The science terms can be used in oral practice. Have students use each term in a spoken sentence.

It is also useful to have students create a science dictionary in a notebook where they will enter terms from each unit as it is taught.

UNIT MATERIALS

Each unit provides many resources related to the unit topic. These resources are essential to teaching the Big Idea and core concepts of the unit, and will prepare students for the *Unit Quiz*. Over time, additional resources will be added to the unit that will supplement and enrich students' understanding.

SPECIAL NOTE: To best prepare students for the *Unit Quiz*, we recommend at least using the *Nonfiction Book* and vocabulary activities with your students. Using additional resources will reinforce the concepts and details addressed in the *Unit Quiz*. The *Process Activities* are hands-on experiments, explorations, and projects that will engage students in the application of unit concepts. The *Quick Reads* are magazine-like fact sheets that will help students develop a deeper understanding of several topics related to the unit. The *Career Files* describe science-related careers in which students could someday apply the unit concepts.

For a complete list of materials provided with the unit, see the Animals unit page on the Science A–Z website.

BACKGROUND AND MISCONCEPTIONS

Use this section as a resource for more background knowledge on unit content and to clarify the content for students if misconceptions arise. Refer to *Using the Internet* below for more ways to extend the learning.

Q: *Is that thing really an animal?*

A: There are many types of animals. Students may think that the word “animal” only refers to the four-legged kind, or to common pets. But there is almost limitless diversity in the animal kingdom, including some creatures (e.g., fish, insects, crustaceans, arthropods) that may not seem like animals on first glance.

Q: *Are plant-eating animals calmer than meat-eating animals?*

A: Animals come in various dispositions, regardless of their diet. Some plant eaters are relatively aggressive (e.g., rhinoceros, hippopotamus), while some meat eaters are relatively passive (e.g., domestic cat, emperor penguin). Students may make incorrect generalizations because of limited experience.

Q: *Am I an animal?*

A: Students may have an understanding of things that make humans different from animals. But they may not realize that humans are animals, in a scientific sense. Humans share the essential needs and characteristics of all animals. For some purposes, it can be useful to make a distinction between humans and animals. Students should know what it means when they hear “no animals allowed,” referring to pets. They should also be able to see what humans and animals have in common and why “animal” could be used as a broader category that includes humans.

Q: *Did that animal decide to be that way?*

A: Animal species—not individual animals—adapt to their environments over many generations, due to random mutations and the survival and continuation of genes. Students may think that animals adapt to their environment by deliberate choices. For example, they may think that the giraffe grows its neck longer in order to reach leaves that are higher in the tree. Or they may think that polar bears dress in layers. Make sure students understand that bears don’t decide how to dress for a purpose; they are just born that way.

Q: *Are certain animals mean and are others nice?*

A: Some literature and pop culture may affect students’ thinking about an animal species. For example, many stories and movies have painted negative images of wolves and sharks that may not be realistic. The reverse may be true as well. For example, some bears are portrayed in fiction as cuddly and personable, but in nature, they behave quite differently.

EXTENSION ACTIVITIES



Using the Internet

Most search engines will offer a wealth of options when the name of an animal species is entered. Try searching by species, location, or pairing the word *animals* with related terms from the unit. Be aware that not all sites will be educational or intended for the elementary classroom.

Many search terms can be useful for finding additional information about animals on the Internet, such as:

- sea lion diet
- turtle body coverings
- Idaho animals
- giraffe habitat
- how snakes move
- animals of Australia

Below are some links with excellent resources for students and/or teachers:

The cable network Animal Planet offers many student-friendly pages, including funny animal video clips, Animals A to Zoo, Dog Breed Selector,

Adopt a Pet, and Fun & Games. Enter a species in the Site Search for more.
www.animal.discovery.com

The Smithsonian Institution's website for the National Zoo provides many color photos and learning opportunities. *www.nationalzoo.si.edu/animals*

The Smithsonian Institution has a website geared more toward educators, although it also has resources for students and for parents.
www.smithsonianeducation.org

The Environmental Protection Agency has a site for kids. Click on "Plants and Animals" to find features such as science projects, art projects, and games.
www.epa.gov/kids

Try the Wildfinder feature on the World Wildlife Federation's website. Enter a species name to learn all about it, with high-quality photographs available in the photo galleries. This site offers a great deal of information about endangered species. *www.worldwildlife.org*

For teachers, the American Society for the Prevention of Cruelty to Animals offers information on the use and misuse of animals by humans. There are also downloadable lesson plans and recommended children's books.
www.asPCA.org

Similarly, the Humane Society promotes the "protection of all animals," and can direct you to its nearest location. *www.hsus.org*

Your local area may have a zoo or wildlife center. Many of their websites can be found via search engines as well.



Projects and Activities

- **Writing:** Write a class list of rules for how to treat all animals in general, or have groups write rules for one animal specifically.
- **Writing:** Brainstorm foods eaten by many animals. Write a funny class menu—to include breakfast, lunch, dinner, drinks, and desserts—made up of foods animals would eat (e.g., Grassy Pancakes, Pond Water Float, Gopher Meatballs on Worm Spaghetti).
- **Arts:** Decorate a classroom door as an animal, or as a montage of animals.
- **Arts/Writing:** Combining one distinctive feature from five different animals, have each student draw and name their new creature (e.g., Flying Kittypotamus). They may also enjoy writing or dictating a story or poem about it.
- **Project:** Build a mock animal habitat in the classroom, such as a bird's nest made of real twigs or a bear's den made from covered cardboard boxes.
- **Project:** Create an all-animal newscast. The reporters will be animals, and all stories will pertain to animals, whether fictional or real. Videotape the live performance for later viewing.

- **Field Trip:** Plan a trip to a local zoo or wildlife center. Take photos or provide art materials so students can create pictures of their favorite animals. Back in class, display these on a bulletin board. Use them for further comparisons of animals.
- **Research:** Using comic pages, clip cartoon images of an animal, then find a photo of the same animal in a magazine or from the Internet. As a class or in small groups, compare and contrast on T-charts ways they are the same and ways they differ.
- **Research:** Students can create mobiles, dioramas, or posters displaying information about their favorite or assigned animals. Research can be conducted as a family/home project or in the library/media center.
- **Arts:** Hold an animal dance. Play fun music and invite students to dance, as would the animal of their choice or an animal drawn out of a hat.
- **Research/Home Connection:** Students can conduct research as a family/home project or in the library/media center to extend the learning about a topic in one of the *Quick Reads*.

