

# ANIMALS

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The activities in this book explain elementary concepts in the study of animals, including classification, vertebrates and invertebrates, animal skeletons, habitats and homes, animal young, behavior, hibernation, migration, senses, defenses, and diets.

General background information, suggested activities, questions for discussion, and answers are included.

Encourage students to keep completed pages in a folder or notebook for further reference and review.

Copyeditor: Cindy Barden

Illustrations: Thompson Design and Nancee McClure

Cover and Inside Design: Good Neighbor Press, Inc.

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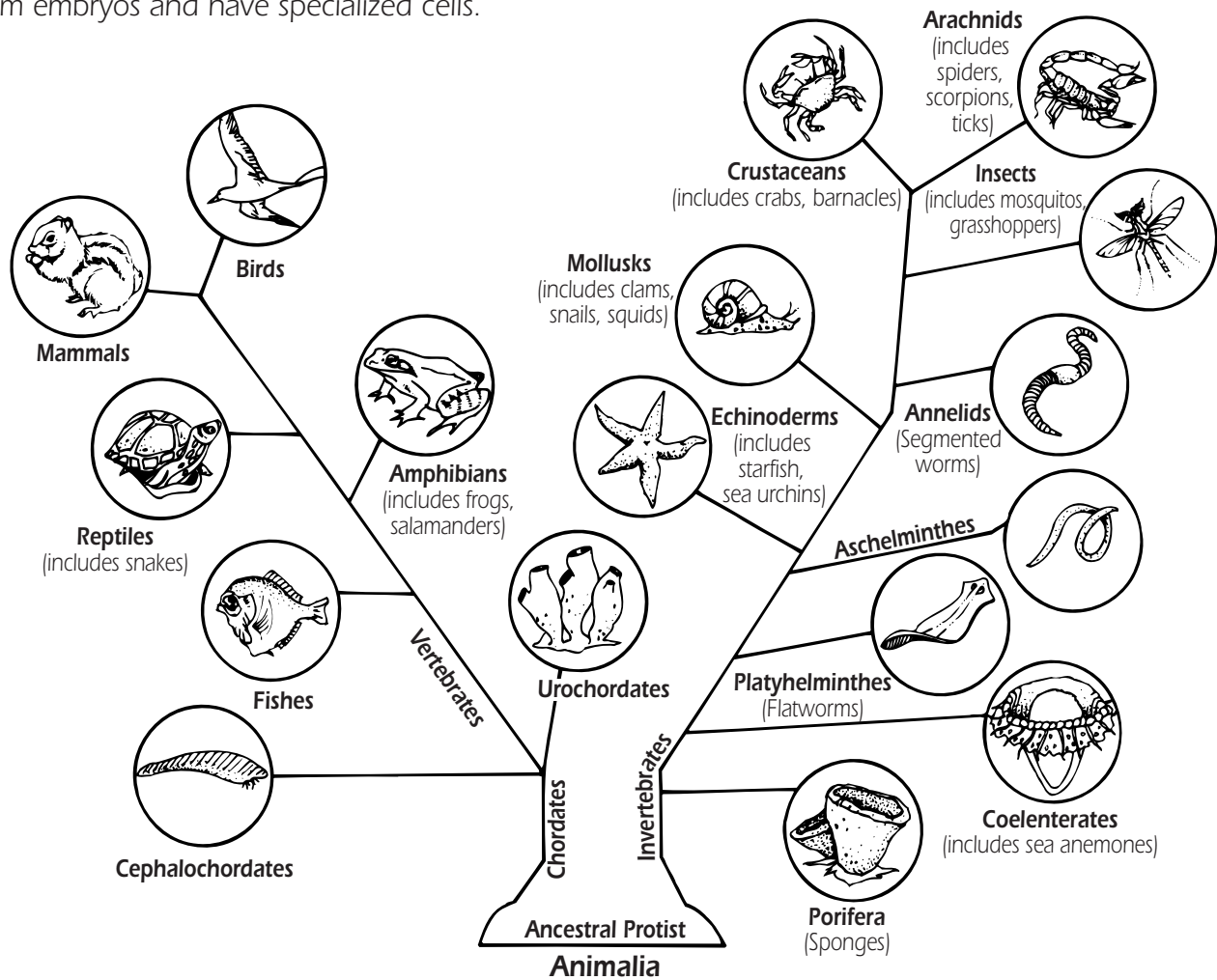
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**ANIMALS**

**THE ANIMAL KINGDOM**

Modern scientists group all living things into five large kingdoms. Within this big design, animals make up one kingdom of creatures.

Animals may be **vertebrates** (with spines) or **invertebrates** (without spines). Most animals develop from embryos and have specialized cells.



1. List the vertebrates shown on the tree. \_\_\_\_\_  
\_\_\_\_\_
2. Which vertebrates spend all their lives on land? \_\_\_\_\_  
\_\_\_\_\_
3. Which vertebrates spend all their lives in the water? \_\_\_\_\_  
\_\_\_\_\_
4. Which vertebrates spend part of their lives on land and part of their lives in the water? \_\_\_\_\_  
\_\_\_\_\_

**ANIMALS**

**CLASSIFICATION**

There are a million or so different animals in the animal kingdom. Scientists classify animals in the following way:

**Phylum:** Each phylum is broken down into classes.

**Class:** Classes are divided into orders.







**Order:** Orders are divided into families.

**Family:** Families are divided into genera.

**Genus:** Genera are divided into species.

**Species**

Look at the classification of a dog and a frog.

	Chordata	<b>Phylum</b>	Chordata
	Mammalia	<b>Class</b>	Amphibian
	Carnivora	<b>Order</b>	Carnivora
	Canidae	<b>Family</b>	Ranidae
	Canis	<b>Genus</b>	Rana
	Canis familiaris (any breed of dog)	<b>Species</b>	Rana sylvatica (wood frog)

- In the process of classification shown in the chart above, at what point do the dog and the frog differ? \_\_\_\_\_
- From your experience, list several ways a dog and a frog are different.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**NOTE**

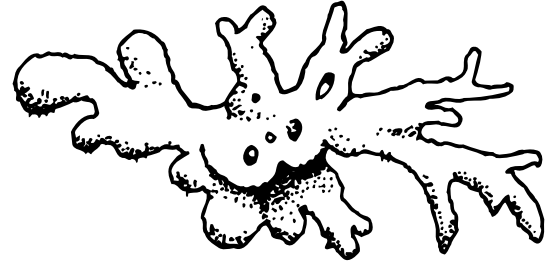
The differences between the two animals are examples of characteristics of each animal. One way scientists classify animals is by shared characteristics.

## ANIMALS

# VERTEBRATES AND INVERTEBRATES

The major characteristic that divides the animal kingdom is a backbone. It divides animals into two main groups called vertebrates and invertebrates.

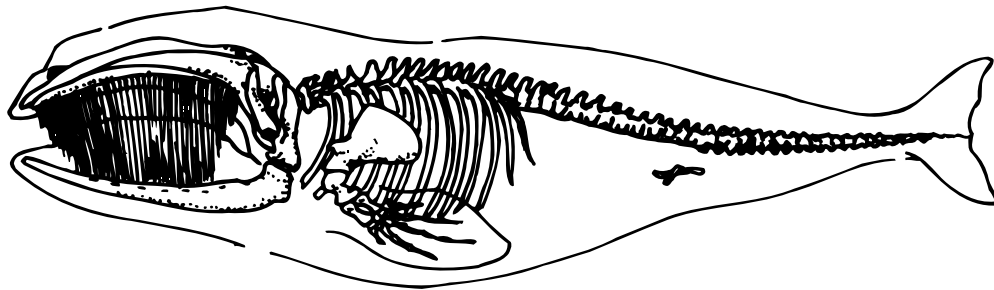
**Invertebrates** are animals **without backbones**. This group includes the amoeba, sponges, worms, centipedes, starfish, mollusks, and insects. There are many more invertebrates than vertebrates. In fact, invertebrates make up about 90 percent of all animals.



**Vertebrates** are animals **with backbones** that surround their nerve cords. The nerve cord is found along the back of an animal. Small bones, called **vertebrae**, make up the backbone.

The bodies of most vertebrates have a head and a trunk. Many vertebrates have two pairs of limbs attached to the trunk. A person's limbs are arms and legs.

The ribs and bones which support the limbs are connected to the backbone. These bones give the body its shape and make up the skeleton.



1. What are a bird's limbs? \_\_\_\_\_  
\_\_\_\_\_
2. What are a fish's limbs? \_\_\_\_\_  
\_\_\_\_\_
3. There are five classes of vertebrates. Check your chart, then list them.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. List at least five classes of invertebrates.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_