

## What is the difference between vertebrates and invertebrates?

**Animals and plants are the two largest** and most familiar groups of living things. The most distinguishing difference between plants and animals is that plants can make their own food and animals cannot. Animals (and man) were originally created to eat plants to obtain energy (Genesis 1:28–30). Since the Fall of man in the Garden of Eden, many animals still eat plants but others eat animals to obtain energy. Because animals must obtain their own food, they are mobile. They can move about to find plants or other animals to eat.

Animals come in all shapes and sizes. Some are so tiny you can only see them with a microscope. Others are as huge as a car or even a house. God originally created various animal kinds, like the cat kind, horse kind, and elephant kind. Since the Flood of Noah's day, these animal kinds have spread around the world and have adapted to different environments, so that today there are many different species of animals within each kind. Scientists have classified over 1 million different species of animals, and there may be millions more that have not been classified.

In order to study so many different types of animals it is convenient to group them together by their similar characteristics. The first grouping that scientists make is to divide animals by whether they have backbones or not. Animals with backbones are called **vertebrates**. Animals without backbones are called **invertebrates**.

Although only 3% of all animals are vertebrates, they are the animals we are most familiar with. Vertebrates are the animals we see around us every day. Every vertebrate has a backbone. The backbone protects the spinal cord that passes through it. Vertebrates have the same major systems that humans have, including skin, skeletal, muscular, nervous, respiratory, and digestive systems. Although all of these systems occur in all vertebrates, they vary considerably among the different kinds of animals.

Vertebrates are divided into five different groups: mammals, birds, fish, amphibians, and reptiles.

Invertebrates are animals without spinal cords. They are very diverse and account for nearly 97% of all animals. Invertebrates do not have internal skeletons. Invertebrates include sponges, jellyfish, worms, insects, and many more creatures. Squids are some of the largest invertebrates.

## Questions and Activities

1. What are the two major divisions of animals?
2. What are two similarities among all animals?
3. What are the 5 different groups of vertebrates?
4. Give 5 examples of invertebrates.
5. When did God create the different animal kinds?
6. How are humans different from animals?

## Unusual animals

There are many animals that you are familiar with. But with over a million different species, there are bound to be many that you are unfamiliar with as well. Below is a list of unusual animals. See what you can find out about each of these animals from an animal encyclopedia or other source, and prepare a short report to share with your class or family.

- Pangolin
- Common snipe
- Echidna
- Grouper
- Liver fluke
- Common whelk
- Queen Alexandra's Birdwing

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