

Vertebrates

The most advanced living organism on the Earth are vertebrates. Vertebrates are distinguished from non-vertebrates because the structure of the body includes spinal cords, vertebrae, and notochords. Vertebrates have a series of nerves running along their backs, which is protected by the backbones, the spinal column, and cartilage named the notochord.

Your backbone is a part of your skeletal structure. Together, they protect your vital organs such as your lungs. Nerves that connect your brain to other parts of your body run through your spine. All vertebrates have a backbone that serves the same purpose. Some vertebrates are small and some are very large. There are about 65,000 species of vertebrae, but it only makes up about 4% of the animal species on the Earth. The rest of the animals are non-vertebrates or invertebrates. Vertebrates are usually much larger than invertebrates, take up much more space, are more advanced, but also have limitations on the environments where they can live.

Examples of vertebrates are humans, fish, amphibians, reptiles, birds, and other mammals like dogs, cats, elephants, tigers, bears, and many more.

Categories of Vertebrates

Vertebrates can live almost everywhere. They can live in the deepest ocean, and they can live in the driest desert. They can even survive in the Arctic. There are five categories of vertebrates. They are fish, birds, mammals, reptiles, and amphibians.

Fish

Have you ever gone fishing? Fish are the only group of living things who spend their entire life in water. A number of factors are used to classify an organism as a fish. Fish do not breathe with the help of lungs like you and me. They breathe through gills. Gills are located on both sides of their head. They are able to take oxygen out of the water through their gills. Fish use their fins to move around in water. Fish are cold blooded. That means that their body temperature depends on the temperature of their environment. Examples of fish include stingrays and tuna.

Birds

Birds are a special group of vertebrates. Birds are the only living things with feathers. These feathers help birds to float on air with their wings. Birds lay eggs that have a hard shell. This shell protects the egg from predators. Birds are warm blooded. They can be found all over the world. Examples of birds include parrots and pigeons.

Mammals

Mammals are warm-blooded vertebrate animals. They are warm blooded, because they are able to regulate, or control, their own body temperature. That means that warm-blooded creatures are able to live in many parts of the world. Some mammals live on land and some live in water. Mammal babies grow inside of their mother. When the babies are strong enough to survive outside of their mother's body, the mother will give birth. Mammals feed their babies by producing (making) milk. Mammals breathe by using their lungs. Most mammals, such as yourself, have four limbs. Your limbs include your hands and your legs. A mammal's body is covered with hair or fur. Apart from humans, examples of mammals include whales, dolphins, lions, and dogs.

Reptiles

Reptiles are cold-blooded vertebrates. That means that they are not able to control their own body temperature. This limits where reptiles can live. Reptiles do not eat as often as other warm-blooded vertebrates. Reptiles produce their young when they lay eggs. When reptiles are strong enough to survive on their own, they leave the eggs (hatching). Reptiles breathe the same way you do. They have lungs. Reptiles have a special skin. Their skin is dry and very tough. Examples of reptiles include lizards, snakes, and crocodiles.

Amphibians

Amphibians, just like reptiles, are cold-blooded vertebrates. Amphibians lay eggs. They have gills and lungs depending on their age. As they get older, they outgrow their gills and develop lungs. Amphibians can live on both land and water. They have four limbs. The soft skin of amphibians allow them to absorb water and air. Examples of amphibians include frogs, newts, and toads.

Name: _____

1. Which of the following is true about all vertebrates?

- A. They all have feathers
- B. They all have a backbone
- C. They are all mammals
- D. They all take care of their babies

2. Which of the following is NOT a vertebrate animal group?

- A. Amphibians
- B. Reptiles
- C. Insects
- D. Mammals

3. Why are fish classified as vertebrates?

- A. They can live in water only
- B. They have scales
- C. They have a backbone
- D. All of the above

4. Which animal does not belong?

- A. Dog
- B. Cat
- C. Starfish
- D. Fish

5. Which of the following best describes birds?

- A: Cold-blooded, feathers, egg-laying
- B: Warm-blooded, feathers, egg-laying
- C: Cold-blooded, hair, scales
- D: Warm-blooded, take care of young, gills

6. How would you classify a warm blooded organism that has wings and does not lay eggs?

- A. Birds
- B. Reptiles
- C. Mammals
- D. Fish

7. What is the difference between a cold blooded and a warm blooded organism?

- A. Cold blooded are evil, while warm blooded are good living things.
- B. Cold blooded can control their own body temperature, but warm blooded cannot.
- C. Cold blooded cannot control their body temperature but warm blooded can.
- D. Warm blooded like to live where it is warm and cold blooded animals like to

live where it is cold.

8. Which of the following has a soft body and can live on land or in water?

- A. Birds
- B. Amphibians
- C. Mammals
- D. Fish

9. How would you classify the following organisms?

- They breathe with lungs
- Their babies hatch from eggs
- They are cold-blooded
- They have dry and tough skin

- A. Fish
- B. Reptiles
- C. Amphibians
- D. Birds

10. Classify the following organism that Sam discovered:

- Does not have lungs
- Lays eggs
- Lives only in water
- Has scales

Which of the following accurately describes the organism that Sam discovered

(A) Mammals (B) Amphibians (C) Birds (D) Fish

11. Which of the following tells the approximate percentage of vertebrates living on Earth?

- A: 2%
- B: 4%
- C: 6%
- D: 8%

12. Which type of vertebrae is warm-blooded, take care of their young with milk, and have hair or fur on their bodies?

- A: Fish
- B: Amphibians
- C: Reptiles
- D: Mammals

