










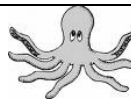


Fast Facts #5 Animal Characteristics

The **Animal Kingdom** is divided into 35 phyla. The phyla are classified into **vertebrates** (have a backbone) and **invertebrates** (do not have a backbone). **All Animals** are **multi-cellular heterotrophs**; they cannot make their own food. Animals must get energy by **eating** plants or other animals.

Vertebrates are animals with backbones. They have an **internal skeleton** (endoskeleton), muscles, blood that circulates through **blood vessels** and **lungs** or **gills** for breathing. They have a protective **skin** covering. Most have legs, wings, or fins to move. They have a **nervous system** with **brains** to process information from the environment through sensory organs such as eyes, ears, or tongues.

Vertebrates Animals with backbones	Groups	Characteristics and Examples of Vertebrates	
	Fish	Have backbones . Are cold-blooded (ectothermic). Use gills to obtain dissolved oxygen in water. Most lay eggs , have scales , have fins , and live in water.	
	Amphibians	Have backbones . Are cold-blooded (ectothermic). Can breathe in water with gills in early stages – breathe on land with lungs as an adult. Go through metamorphosis . Lay jelly-like eggs . Frogs and salamanders have smooth, moist skin, can breathe through their skin, and live part of their life on land and part in water. Toads have thicker, bumpy skin and live on land.	
	Reptiles	Have backbones . Are cold-blooded (ectothermic). Breathe with lungs . Most lay eggs although in some reptiles the eggs hatch inside the females. Have plates or scales .	
	Mammals	Have backbones . Are warm-blooded (endothermic). Breathe with lungs . Have babies that are born live , have fur or hair , and produce milk to feed their young.	
	Birds	Have backbones . Are warm-blooded (endothermic). Breathe with lungs . Lay eggs , have feathers , a beak , two wings , and two feet.	











Invertebrates are animals without backbones. Some have external skeletons called **exoskeletons**.




Invertebrates Animals without backbones	Groups	Characteristics and Examples of Invertebrates	
	Sponges	They are very simple animals that have many pores (holes) through which water flows. Water moves into a central cavity and out through a hole in the top. Sponges obtain food and eliminate wastes through this passage of water. They have special cells to get food and oxygen from the water.	
	Segmented Worms	They have long, tube like bodies that are divided into segments . They are the simplest organism with a true nervous system and blood contained in blood vessels . A long digestive tube runs down the length of the worm's inside body. Worms take in dissolved oxygen from the water through their skin. Examples are earthworms and leeches.	
	Mollusks	They have soft bodies and most have thick muscular foot for movement or to open and close their shells. They have more developed body systems than sponges or worms. They take in oxygen through their gills or lungs. Some have shells. Examples are slugs, snails, clams, and octopuses.	
	Echinoderms	They have arms that extend from the middle of the body. They have tube feet that take in oxygen from the water. They have spines . Examples are sea stars, brittle stars, sea cucumbers, and sea urchins.	
	Arthropods	They have jointed legs , have a hard outer covering called an exoskeleton , and have segmented bodies . Some have wings. They obtain oxygen from the air through gills or air tubes. Examples are insects, arachnids, and crustaceans.	







Endothermic animals are warm-blooded. **Ectothermic** animals are cold-blooded.

Body Temperature	Description	Examples
Ectothermic	These animals do NOT maintain a constant body temperature . They are called cold-blooded because their body temperature is close to the temperature of their surroundings.	Fish, Amphibians Reptiles
Endothermic	These animals maintain a nearly constant internal body temperature regardless of the temperature of their environment. They are called warm-blooded .	Mammals Birds

**Animals have special structures that allow them to
defend themselves, to move, and to obtain resources.**

Structures for Defense	Examples	
Hide from a predator or warn a predator	Camouflage – skin color (blend in surroundings) Mimicry – patterns (copy the looks of something else)	 
Make a direct painful attack	Horns, quills (porcupine), claws (cats), stingers (bees), or venom (snake)	 
Prevent a direct attack	Change its size (puffer fish), shells for protection (crab) Emitting smells (skunk) or body fluids (squid)	 
Allow the animal to flee or hide from predators	Body design, sensory organs (hearing, smell and sight) Legs for speed or jumping (cheetah or frog) Wings or a lightweight skeleton for flight (birds and bats)	 
Construct holes or tunnels to run into to hide, or climb and hide	Paws or toenails (prairie dogs, moles, or cats)	 

Structures for Movement	Examples	
To fulfill their needs such as finding food and escaping predators	Legs, feet, arms, tails, fins, wings, body design, and skeleton	  

Structures to Obtain Resources	Examples	
Allow an animal to chew, tear, and eat its food or drink	mouth parts such as beaks, teeth, flexible jaws, tongues, tube-shaped mouths (hummingbirds)	  
Allow an animal to grab and hold its food	tentacles (octopus), pinchers (crabs), claws, fangs	  
Allow an animal to consume food found in the water	filtering structures for filter feeders in clams or sponges	