Animals need food, water, shelter, a space to live, and oxygen. Animals can be divided into categories. Invertebrates don’t have a backbone, and vertebrates do have a backbone. If animals are cold-blooded, their body temperatures change based on the climate. If they are warm-blooded, the climate doesn’t affect their body temperature. There are five main classifications of animals: fish (three different kinds), amphibians, reptiles, birds, and mammals.

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| ANIMAL | LIVES | WARM- OR COLD-BLOODED | GIVES BIRTH | CARES FOR YOUNG | HOW BREATHE | SPECIAL FEATURES | EXAMPLE |
| Fish | Water | Cold-blooded | Eggs | No | Gills | Fins and scales | Trout |
| Amphibian | Water & land | Cold- blooded | Eggs | No | Gills then lungs | Smooth, moist skin | Frog |
| Reptile | Land | Cold- blooded | Eggs | No | Lungs | Dry, rough, scaly skin | Snake |
| Birds | Land | Warm-blooded | Eggs | Yes | Lungs | Feathers | Cardinal |
| Mammals | Land | Warm-blooded | Live young | Yes | Lungs | Fur | Dog |

Insects are animals with 6 legs and 3 body parts. Insect life cycle: egg, larva, pupa, adult. Animal life cycle: baby, child, young adult, adult. A butterfly and a frog have a similar life cycle because they both go through the process of metamorphosis (changing from one thing to another). All life cycles go through the process of beginning life, growing and developing, reproducing, and death.

Butterfly life cycle = egg, caterpillar, cocoon, butterfly

Frog life cycle = egg, then tadpole, then it grows back legs, front legs, loses it tale, and then, is an adult frog

Many animals like a dog closely resemble, or look like their parents at some time. Animals pass some characteristics on to their offspring, or young and other characteristics are learned. Examples of traits that are passed on from the adult to the baby are stripes, spots, eye color, and skin color. If a tiger has brown stripes on its neck, the baby will too. The way a living thing acts is called behavior. If a behavior is learned by practice, it is called a learned behavior (like a dog shaking hands). If it is a behavior they are born knowing how to do it is an instinct (like a spider spinning a web). Automatic behaviors that happen are called reflexes (like scratching an itch). When there is a change in the environment such as a twig snapping, we call it a stimulus. When something reacts to that stimulus, such as a deer raising its tail, we call it a response. When two animals help each other out in some way where they benefit it is called symbiosis. (There is a kind of bird that will eat ticks off of a rhinoceros.)

Something an animal has helps it live in its environment is an adaptation. Some animals use camouflage to blend in with their surrounds. Some use mimicry where they act like, or copy, another organism. They use protective resemblance in order to hide from their predators (animals trying to eat them). Sometimes animals have other physical adaptations too. Birds have hollow bones to help them fly. Fish have gills so they can breathe underwater. Sometimes animals like fish will adapt to changes in the environment by hibernating (going into a deep sleep). Others like birds will migrate (moving from one area to another) during the winter to find food. And yet other will adapt by staying and learning how to live with the new changes.

Polar bears can be found in the arctic environment. They have many adaptations to help them survive in the cold and dry icy.

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| Two thick layers of fur | To keep them warm |
| Blubber (fat) under their skin | To keep them warm |
| Very good sense of smell | To help them find prey for food |
| Long and sharp claws | To cling to the ice |
| White camouflaged fur | To keep their prey from seeing them |

Camels also have many adaptations for living in the hot and dry environment of the desert.

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| Long eyelashes | To keep the blowing sand out of their eyes |
| Fat stored in humps | To help it go a long time without food or water |
| Long legs | Keeps body away from the hot sand |
| Pads on the bottom of their hooves | To keep it from sinking into the sand |

A food chain shows the exchange of energy from one organism to another. Each organism is a consumer of the plant of animals to the left of it. Producers (organisms that make energy) will be at the bottom of the food chain. Above them will be the herbivore (animals that get energy from plants). Then at the top of the food chain you will find the carnivores (animals that get energy from meat) and omnivores (animals that get energy from plants and animals). Example: grass→cricket→robin→hawk