Adaptations

Adaptation

An adaptation is a mutation, or genetic change, that helps an organism, such as a plant or animal, survive in its environment.

Adaptation how it works

- A **genetic** change or mutation only becomes an adaptation if it helps the organism or **species** survive.
- If the change helps the species survive they are more likely to pass it on to their offspring.
- If the **offspring** are better suited to survival there is a greater chance of there being more of that species with the genetic change or mutation. Over time mutations can become typical part of the species.
- Some ways species can adapt are
    - Change or different colour
    - Being able to eat different food
    - Being able to move differently
    - Having a different body part
- There are many reasons why a species will have and adaptation. Most adaptations are developed in response to a change in the habitat.

Example: The English Peppered Moth

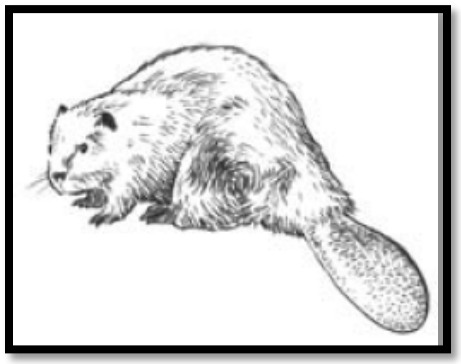
A famous example of an animal adapting to a change in its environment is the English peppered moth. Prior to the 19th century, the most common type of this moth was cream-colored with darker spots. Few peppered moths displayed a mutation of being grey or black. As the Industrial Revolution changed the environment, the appearance of the peppered moth changed. The darker-colored moths, which were rare, began to thrive in the urban atmosphere.

Their sooty color blended in with the trees stained by industrial pollution. Birds couldn't see the dark moths, so they ate the cream-colored moths instead. The cream-colored moths began to make a comeback after the United Kingdom passed laws that limited air pollution.

Beaver

One adaptation beavers have are their wide, flat, scaly tails that they use to steer itself through water. Their tails are also useful altering other beaver's when danger is near. They slap the water to warn the other beavers!

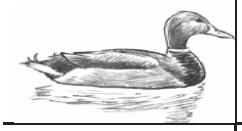
Another use for the beaver's tail is when they are towing heavy logs; they use their tails as a counterbalance for the weight they are towing. A second adaptation is the beaver's coat. It keeps them very warm because it has two layers; the outer layer has long, shiny guard hair to protect the beaver from predators. The layer under the top layer is a thick, woolly layer of shorter fur. Beavers have two double hind claws on each hind foot. These hind claws open like a tiny pair of pliers to untangle its fur and keep it clean.



These claws are also good for gripping the ground when on land. Near the beaver's tail there is a pair of glands where special oil is made. They spread this oil through their fur with their paws. Even after an hour of swimming, a beaver's body stays dry and cozy inside its oily, waterproofed coat. Beaver's also have protection for their eyes. When it swims, extra pair of transparent eyelids closes over its eyes.

Moose

- Moose live in all parts of Canada, mostly in forests and marshy areas. During warmer months moose are found near lakes and marshes. The moose has very long legs, big hooves, a humpback and a very short tail. It has large ears, a wide droopy nose and an overhanging top lip. The long legs helps the moose travel through water of varying depths, while the long snout and overhanging top lip helps the moose grasps wetland vegetation, which it eats. Moose can move fast, even when it is wet and muddy. The two large toes on their hooves spread wide apart to keep the animal from sinking. Moose are also good swimmers and will lie in shallow water to get away from biting insects, or to cool off. The male moose's big strong antlers help protect the moose against predators, and when fighting other males for a female mate. A mother will fight to protect her young by kicking with her sharp powerful hooves. The moose has poor eyesight and relies on a keen sense of smell. It stops and listens often while eating, to make sure it knows when predators are on the prowl!

Animal	Adaptation
Mosquito 	Mosquito larvae can hang upside down from the surface of water to breathe and to trap food with the bristles around their mouths.
Caddisfly Larvae 	This larvae glues together pieces of plants and small pebbles to form a case. The case camouflages the larvae on the bottom of ponds and protects them from predators.
Frog 	Green, yellow or brown skin with dark blotches and lines act as camouflage. Their moist, thin skin absorbs oxygen and water. Bellies are white to blend with light above water, and camouflage it from
Duck 	Oily, waterproof feathers prevent skin from getting wet and cold; webbed feet for paddling through the water. (See poster for Bottoms Up!)
Dragonfly 	Have two sets of wings that can move independently. This allows the insect to hover and fly forward and backward quickly enough to catch mosquitoes.
Muskrat 	Dark, brown coat is waterproof. Slightly webbed hind feet help them to swim. Long skinny tail acts as a rudder.