

# Animals and Adaptations

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In order for animals to survive, they need to be able to adapt. In this lesson we will look at the types of adaptations animals can and do make.

In a perfect world, animals would not need to adapt. However, with constant changes to their environment, food chain and climate, animals must adapt or face extinction. There are many examples of animals facing extinction. Later on in the course we will take a look at some of these examples, and the reasons for their endangerment.

## Adaptation

An adaptation is a trait that makes an animal suited to its environment. It can be a behavioural or a structural trait. Here are some examples:

Moving in large groups is a **behavioural adaptation**; it helps protect the members of the group from predators.

The thick fur coat of an arctic fox is a **structural adaptation**. It helps protect it against the cold weather.

Adaptation happens over a long period of time. Structural adaptation happens in the form of changing an animal's genetic traits. Take for example this imaginary animal, the *whatsit*.

The *whatsit* lives in woods. Men and larger animals hunt it. Most *whatsits* are born with white fur, making them easy to spot amongst the trees. Some *whatsits* are born with brown, speckled fur. These are far more difficult to spot. Since they are easier targets for hunters, far more white *whatsits* are hunted and killed than speckled ones. Each time a speckled one mates with a white one, half the offspring are speckled. Eventually the amount of white furred ones available to breed is smaller than the number of speckled ones. More offspring are born with speckles than with white fur. This animal has adapted, and now the majority has speckled fur instead of white fur. Eventually the white furred ones will disappear altogether.

There are many examples of this type of adaptation. Because it happens over generations, it is slow. In some cases, the inability of animals to adapt quickly enough have led to their distinction or endangerment.

Behavioral adaptation can happen far more quickly. The more intelligent an animal is the faster it can learn to make behavioral changes, in order to survive.

If you take the most intelligent of animals, you can understand what happens. Humans adapt in many ways in order to survive. Here is an imaginary example of human adaptation:

A group of people lives in village Somewhere. In the village a large number of children die each year, after being attacked by wild animals. The villagers can make changes to their environment and behavior in order to protect the children. They can build fences around the village. They can make traps to catch the animals. They can ensure that the children only go out in groups, protected by armed adults.

All of these are behavioral changes, and can happen almost overnight. The speed with which they happen depends on the intelligence of the animals and their ability to work as a community.

## The Best Adaptations

Adaptation can work in two ways. The best example of this is camouflage. A chameleon can change its color according to its surroundings. Think about how this helps protect it. Not only does it help protect the chameleon, it also helps it survive in another way.

Because it blends in so well with its surroundings, insects are less likely to see or notice it. By blending in it also makes it a better hunter, it can hunt without being seen, In fact, it is such an efficient adaptation that hunting is probably the wrong word to use. It just blends in and patiently sits waiting for some unsuspecting insect to happen along. Then, flick, out goes the tongue and there is one less insect and one less hungry chameleon. The more ways a single adaptation helps an animal to survive, the better it is.

Going back to the arctic fox and its fur coat. How can that coat help the fox in more than one way? The answer lies in the color of the coat. Obviously in a landscape covered in snow, a thick, white coat is very useful. This adaptation works in three ways. It protects the fox from the cold and provides camouflage. The camouflage allows it to hunt more efficiently and hide from would-be predators.