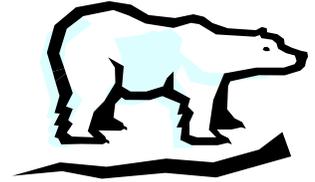


SCIENCE BACKGROUND

LIFE PROCESSES: ANIMAL NEEDS 3.4



In this unit we study behavioral and physical adaptations that help animals to survive. Before we start it would be good to define the difference between behavioral adaptations and physical adaptations, so here you go:

Behavioral adaptations are changes that occur in the behavior of an animal over time. These changes usually come about over many generations of the animal and become part of that animal's instinctive behavior.

Physical adaptations are changes in the body of the animal. They can be cosmetic changes in appearance, such as improved camouflage, or structural changes in the body of the animal. It's important to understand that physical adaptations usually happen over a very long period of time over the course of many generations of animal.

How do adaptations take place and why does it take so long?

In simple terms some members of a group of animals will be born with a specific physical trait that improves their rate of survival. This trait is an abnormality by the normal standard of the species, but it's a good abnormality because it improves that animal's ability to survive. Since those animals have a better chance for survival, they also have a better rate of reproduction. After a long period of time, sometimes many thousands of years, most animals in the species have the new trait.

Here are some types of adaptations that you need to know...

Hibernation is an animal behavior in which the animal slows down its bodily functions and becomes dormant, which is like a sleeping state. Most people have heard of bears hibernating, but other animals such as insects, reptiles, and fish hibernate as well.

Migration is an animal behavior in which the animal travels from one place to another, usually for better food supplies, but also for reproduction and safety. Some animals migrate thousands of miles every year.

Camouflage is a physical adaptation in which the animal's body is colored or shaped in such a way that enables the animal to blend in with its surroundings. Camouflaged animals are hard to see, so they are less likely to be caught by predators, and they have a better chance of catching their own prey. Similar to camouflage is mimicry, which is a physical adaptation that makes an animal look like another, more dangerous or less appetizing species. Like camouflage, mimicry discourages predators and improves the animal's rate of survival.

Instinct is a behavior pattern that an animal naturally follows. Most behavioral adaptations become part of an animal's instinctive behavior. Some examples of instinctive behavior are migration, hunting behavior and courtship behavior. Behaviors

that are not instinct are called **learned behavior**. Most of our human behaviors are learned, like raising one's hand in class. At least that doesn't seem to be instinctive...

Pulling it all together

One good example for us to study is the polar bear, which has some very effective adaptations.

- ✓ Polar bears are covered with white fur that serves as camouflage in the ice and snow of their habitat.
- ✓ They have a thick layer of fat, which, along with their fur, insulates them from the cold air and the icy waters in which they swim.
- ✓ They have instinctive hunting behaviors in which they wait quietly near holes in the ice for their prey to come up for air.
- ✓ They have physical adaptations that enable them to slow down certain body functions in order to swim under water for an extended period of time.
- ✓ Female polar bears instinctively feed and protect their young, which enables the survival of the species.

All animals have behavioral and physical adaptations. The animals that survive in our world today do so because of their adaptations. Nearly all aspects of an animal's appearance, body shape and behavior serves a purpose in its fight for survival. On the other hand, many animals have become extinct because they didn't have adaptations that enabled them to survive.