

Adaptation



The ability of an organism to develop certain features which improve the chances of its survival in the environment in which they live is known as adaptation. Animals are adapted to survive in the conditions in which they live. In other words, an adaptation is a trait of an organism that has been favored by natural selection.



Adaptations are of three types:

1. Structural adaptations: Adaptation of special body parts of an organism that helps it to survive in its natural habitat, e.g. skin color, shape, body covering.

2. Behavioral adaptations: Adaptation of special ways in a particular organism that helps it to survive in its natural habitat. It usually occurs in response to some external stimuli, e.g. frogs and bear undergoes hibernation or winter sleep during the hard winter season.

3. Physiological adaptations: Adaptation of body systems presents in an organism that allows it to perform the certain biochemical reaction, e.g. warm-blooded animals can keep the constant body temperature.

Animals that live in a very cold or hot climate must possess special features to protect themselves against extreme cold or heat. The features and habits that help an animal adapt to their surrounding are a result of the process of evolution.

According to their habitat animals adapt themselves. **These animals may be grouped as polar regions and tropical rainforest animals.**

Adaptation

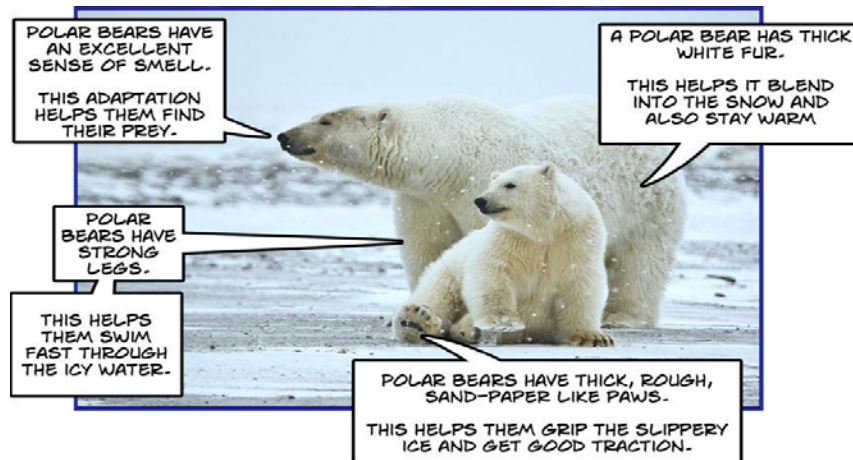


The polar region on the earth

- The area of the earth that surrounds the North Pole and the South Pole is called the Polar Region.
- The climate of the polar region is extremely cold throughout the year and receives heavy snow.
- The sun does not rise for 6 months of the year in the polar region and then it stays up for the next 6 months.
- The temperature in the polar region can be as low as -37°C .
- Most common animals found in these regions are polar bears and penguins. Other animals that can be found in polar areas are fishes, birds, oxen, musk, reindeers, fox, whales and seals.
- They have adapted themselves so that they can survive easily in these places.



For Example: Adaptation in Polar Bear



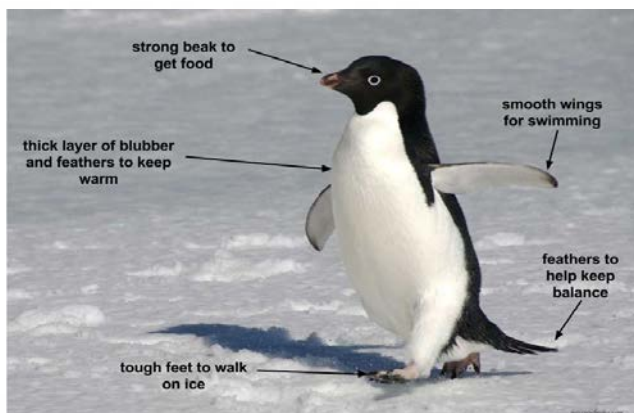
Adaptation



- The white fur of the polar bear makes it easier for them to hide in the snow and therefore save them from predators.
- In the same way, it makes it easier for them to catch their prey.
- The polar bears have two layers of thick fur on them so that they can survive extremely cold conditions.
- The polar bears move slowly and rest a lot so that they do not get overheated because of their thick fur.
- The polar bears often swim on warm days to keep themselves cool.
- The paws of the polar bear are large and wide so that it can swim as well as walk easily in the snow.
- The polar bear can swim underwater as well because it can keep its nostrils closed for a long time.
- The strong sense of smell of polar bears makes it possible to locate its prey during such harsh weathers.



Adaptation in Penguins



Adaptation



- The penguins are also white in color so that they can hide in the snow.
- They have thick skin with large fat content in their body so that they can survive the cold weather easily.
- The Penguins generally live in a crowd or nest closely so that they can stay warm.
- The Penguins have webbed feet which allow them to swim.



Other Animals Living in Polar Regions

The other animals living in polar regions include a variety of fishes, reindeers, seals, whales, foxes, birds, etc.. While fish are able to remain underwater for long periods of time and survive the cold weather, the birds cannot do that. They migrate to warmer regions till the winter gets over. India is amongst the favourite destination amongst these birds. An example of this is the Siberian crane that migrates to the regions of Bharatpur in Rajasthan as well as Sultanpur in Haryana. The wetlands of North East and some other parts of India also serve as their destination to escape from the extreme climates.



Adaptation



The tropical region on earth

- The tropical regions on the earth are the regions which are close to the equator and hence receive more amount of sunlight during the year. Because of this, these areas have a hot climate.
- The temperature in tropical regions can be as high as 40°C and can drop until 15 ° C only.
- The length of the day and night are almost equal in these regions.
- However, there is a lot of rainfall and so the tropical rainforests are found in this region.
- The Tropical rainforests are home to a wide variety of vegetation and animals. Due to large habitation, the animals often compete for food in these regions.
- Many animals have adapted themselves so that they can live on the trees and find their food easily. The skin color of these animals is generally similar to that of the surroundings so that they can catch their prey easily and protect themselves from the predators. Also, many of these animals have a good eyesight and better sense of hearing.
- The major type of animals living in the rainforest are monkeys, apes, gorillas, tigers, elephants, leopards, lizards, snakes, birds and insects.

