

Weather

- The day-to-day condition of the atmosphere at a place with respect to the temperature, humidity, rainfall, wind-speed, etc., is called the weather at that place and time.
- The daily weather report available in newspaper and on news channels carries information about the temperature, humidity and rainfall during the past 24 hours. It also predicts the weather for the day.
- Humidity, is the measure of the moisture in air.
- Weather reports are prepared by Meteorological Department of the Government. The department collects data on temperature, wind, etc. and predicts the weather.
- The weather is a very complex phenomenon that it can vary over very short periods of time.
- It may happen many times that it is sunny in the morning, but suddenly becomes cloudy and may start raining heavily.
- The temperature, humidity, wind-speed and other factors are called the elements of the weather.
- The minimum and maximum temperatures are recorded everyday by using special thermometers called maximum and minimum thermometers.



Climate

- The average weather pattern taken over a long time, say 25 years, is called the climate of the place.
- If the temperature at a place is found high most of the time, then the climate of that place is called hot.
- If heavy rainfall is recorded on most of the days in the same place, then the climate of that place is called hot and wet.

- In Rajasthan, the temperature is high during most part of the year. But during winter, which lasts only for a few months, the temperature is quite low.
- This region receives very less rainfall. It is the typical desert climate. It is called hot and dry.
- The north - eastern India receives rain for a major part of the year. Therefore, we can say that the climate of the north-east is wet.

Climate and adaptations

- Animals are adapted to survive in the conditions in which they live. Animals found in very cold and hot climate possess special features to protect themselves against the extreme cold or heat.
- Features and habits that help animals to adapt to their surroundings are a result of the process of evolution.

Polar regions

- The polar regions is very cold for most part of the year. For six months the sun does not set at the poles while the sun does not rise for the other six months.
- In winters, the temperature can become as low as -37°C . Animals living there have adapted to these severe conditions.
- Polar bears have white fur so they are not easily visible in the snowy white background and it protects them from their predators.
- They have two thick layers of fur to protect them from extreme cold. They also have a layer of fat under their skin, So they are well-insulated. They have to move slowly and rest often to avoid getting overheated.
- On warm days physical activities are necessary for cooling. So, the polar bear goes for swimming.
- Its paws are wide and large, which helps not only in swimming well but also walk with ease in the snow.
- It can close its nostrils and can remain under water for long durations. It has a strong sense of smell so that it can catch its prey for food.
- Penguins are also found in the polar region.
- It is also white and merges well with the white background. It also has a thick skin and a lot of fat to protect it from cold.
- Penguins are found huddled together to keeps themselves warm.
- Their bodies are streamlined and their feet have webs, which makes them good swimmers.
- Many types of fishes, musk oxen, reindeers, foxes, seals, whales, and birds are also found in the polar regions.
- A fish can remain under cold water for long, birds migrate to warmer regions when winter sets in and return after the winter is over.



The Tropical Rainforests

- The tropical region has a hot climate because it is located around the equator.
- Even in the coldest month the temperature is generally higher than 15°C .
- Days and nights are almost equal in length throughout the year.
- These regions get plenty of rainfall.
- The tropical rainforests are found in Western Ghats and Assam in India, Southeast Asia, Central America and Central Africa.
- This region supports a wide variety of plants and animals because of warmth and rain.
- The major types of animals found in the rainforests are monkeys, apes, gorillas, tigers, elephants, leopards, lizards, snakes, birds and insects.
- The climatic conditions in rainforests are highly suitable for supporting a huge variety of animals and plants.
- This results in intense competition for food and shelter.
- Most of the animals are adapted to living on the trees for instance, Red-eyed frog has developed sticky pads on its feet to help it climb on the trees, monkeys have long tails for grasping branches. Their hands and feet are adapted in such a way that they can hold on to the branches easily
- As there is competition for food, some animals are adapted to get food that is not easily reachable. For example, the bird Toucan which possesses a long, large beak. This helps a toucan to reach the fruits on branches which are otherwise too weak to support its weight.
- The lion-tailed macaque (also called Beard ape) is found in the rainforests of Western Ghats.
- Its most amazing feature is the silver-white mane, which surrounds the head from the cheeks down to its chin. It is a good climber and spends most of its life on the tree. It feeds mainly on fruits, seeds, young leaves, stems, flowers and buds.
- Elephant has adapted to the conditions of rainforests in many different ways

- It uses its trunk as a nose because of which it has a strong sense of smell. It uses its trunk for picking up food.
- Moreover, its tusks are modified teeth which are used to tear the bark of trees that elephant loves to eat. So, the elephant is able to handle the competition for food rather well.

