



Earth's weather and climate:

Earth is a huge planet. It has different weather patterns at different places.

Students' Learning Outcomes

Understand the difference between weather and climate.

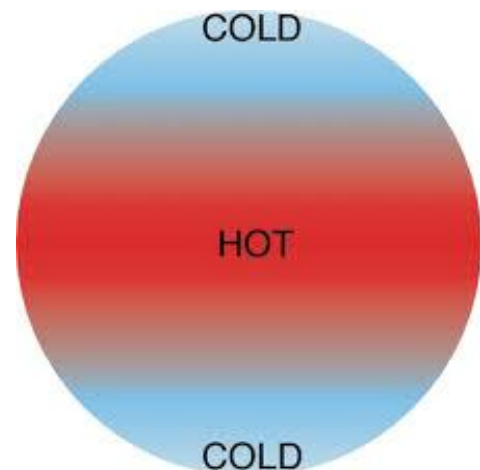
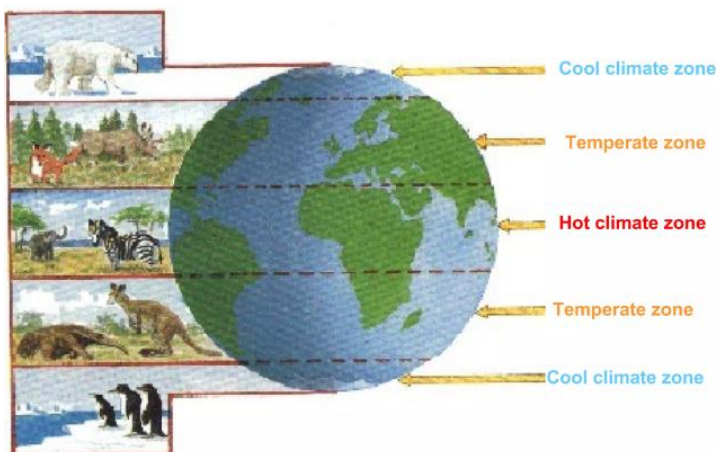
- ❖ Some places are very hot.
- ❖ Some places are very cold.
- ❖ Some places are dry.
- ❖ Some places have lots of rain annually.
- ❖ Some places are hot during day, but cold at night.



Heat and light from the Sun:

All these changes are because of change in temperature. This change in temperature is because of heat and light we get from the Sun.

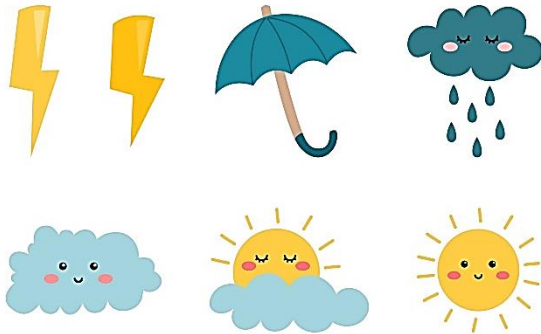
- + The parts of Earth that get more amount of heat and light, are hotter. For example, tropical zone of earth.
- + The parts of Earth that get lesser amount of heat and light, are colder. For example, Polar zone of Earth.





Weather

1. Weather is the condition of environment at a particular time and place.
2. Weather can change from day to day.
3. Weather of a particular area can be described by:
 - Temperature
 - Precipitation
 - Humidity



Different types of weather:

- Stormy
- Rainy
- Sunny
- Cloudy

Climate

1. The average weather of a given area or place over a longer period is termed as climate.
2. It describes the general and long term weather conditions of an area.
3. Climate is described in terms of seasons.
 - Such as summer is prolonged this year as compared to winters or vice versa.



Different types of climatic regions:

- Desert
- Polar region
- Forest



Change in weather

Different places have different temperatures, amounts of rain or snow, types of clouds, and wind patterns. That's why, weather changes from place to place. This change depends upon the following factors:

Temperature:

Temperature is a measure of how hot or cold something is.

- ❖ When it is a very hot day, we say that temperature is very high.
- ❖ When it is cold, we say that temperature is very low.

Precipitation:

Precipitation is falling of water from sky, in the form of rain, snow and hail.

- ❖ There is more precipitation in some areas. Such as equatorial regions and areas of Southeast Asia.
- ❖ While others receive less rain. Such as deserts.

Humidity:

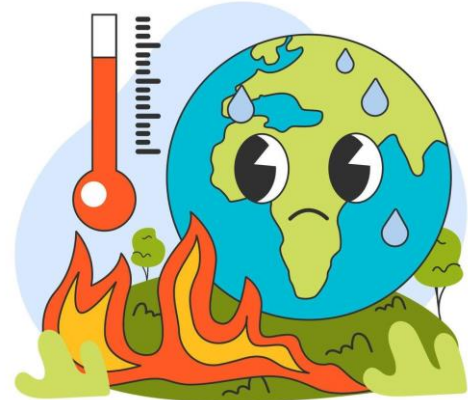
Humidity means amount of water vapours in the air.

It varies from place:

- ❖ Some places are very humid.
- ❖ While others are dry.

Students' Learning Outcomes

Relate weather (i.e. daily variations in temperature, humidity, precipitation in the form of rain or snow, clouds and wind) changes with changing geographical location.





Clouds:

Clouds are collection tiny droplets of water or ice crystals. These droplets are so light that they can float in air.

- ❖ Clouds move with the wind.
- ❖ They have different shapes.
- ❖ They are at different heights.
- ❖ They hold different amounts of water.



Wind:

Moving air across earth's surface is called wind. Wind can bring rain, clouds or clear skies.

- ❖ Speed and direction of wind are important factors that control the weather.
- ❖ A light gentle wind is called breeze.



Weather report:

Daily weather reports on mobile phones, radio and television tell us about the temperature, rainfall etc.

- ❖ Weather prediction can be for few days or a week.
- ❖ Predictions about weather are called weather **forecasts**.
- ❖ These forecasts are made from the information collected from weather **satellites**.

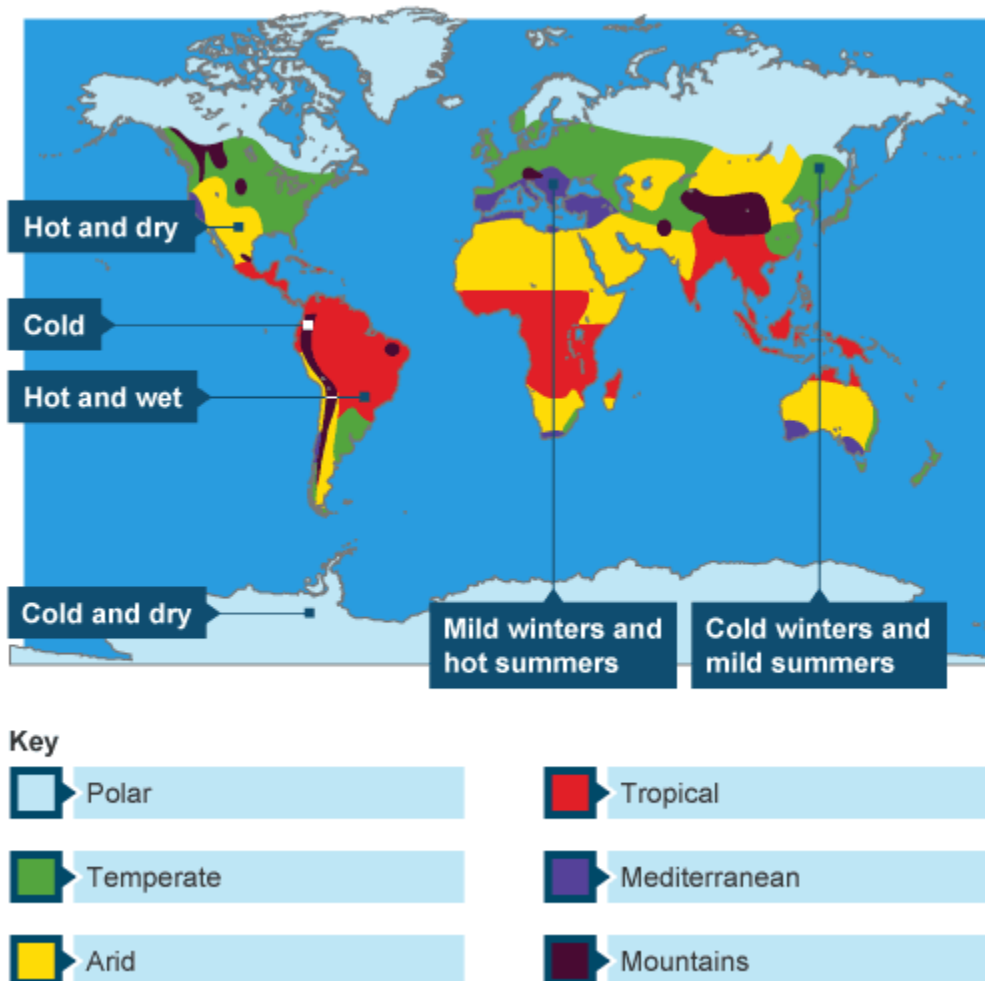




Change in weather on geographical basis

Geographical location refers to the type of landscape. It includes rivers, mountains, plateaus, and plain areas.

- ❖ Geographical areas a high altitude such as mountains have cold and wet climate.
- ❖ While low altitude areas such as plains, deserts have hot weather.
- ❖ Weather at a place does not depends upon only single factor.
- ❖ It depends on various factors. Such as, temperature, air pressure, wind direction, precipitation etc.

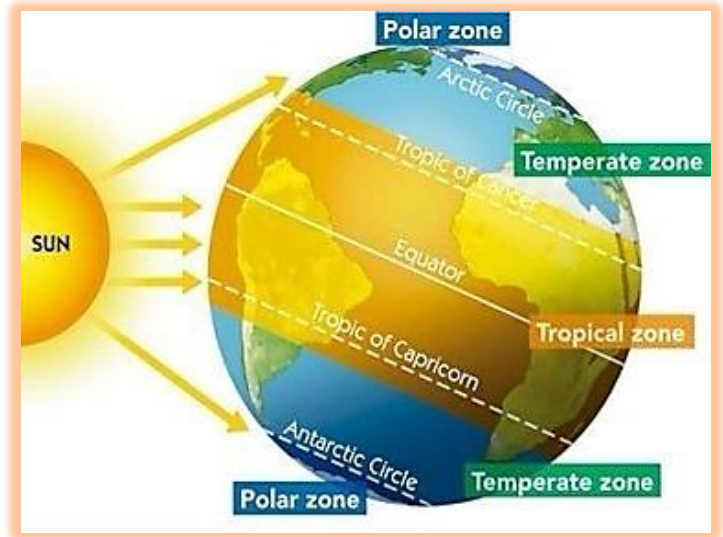




Change in climate in different climatic zones

Earth is round in shape. Different parts of it receive different amount of sunrays. The amount of sunrays reaching a location on earth affects its climate and weather conditions.

- ✚ Some regions receive direct rays.
- ✚ Some regions receive slanting rays.



On the basis of these conditions, earth is divided into three zones.

Tropical zone:

Area of earth that is closest to equator is called tropical zone.

In this zone, temperature is very high. Because the rays of sun falls on this area directly.





Temperate zone:

It consists of the regions located between equator and Polar Regions.

Temperature in this zone is moderate as the Sun rays do not fall directly in this zone. So the climate is mild, neither cold nor hot.

Polar zone:

Areas around North and South poles of the Earth are called polar zones.

These areas receive more slanting sunrays. That's why, the climate in polar zone is very cold.

Weather and seasons:

Weather is not same throughout the year. It changes when the average temperature and precipitation changes. Weather changes with the change of location or change of season.

Students' Learning Outcomes

Recognize that average temperature and precipitation can change seasons and location.

Winter:

- ❖ It is the season in which temperature turns low.
- ❖ It is the coldest season.
- ❖ It often snows in some regions of the world during this season.



Spring:

- ❖ During this season, temperature is a little high than winter.
- ❖ Weather is pleasant during this season.
- ❖ It's a blooming season.





Summer:

- ❖ Summer is the hottest season of the year.
- ❖ Temperature is very high during this season.
- ❖ Winds often blow.



Autumn:

- ❖ Autumn is cooler than the summer season.
- ❖ It rains often and wind also blows in many areas.
- ❖ Hailstorms are also observed.
- ❖ Tree leaves fall during this season.

