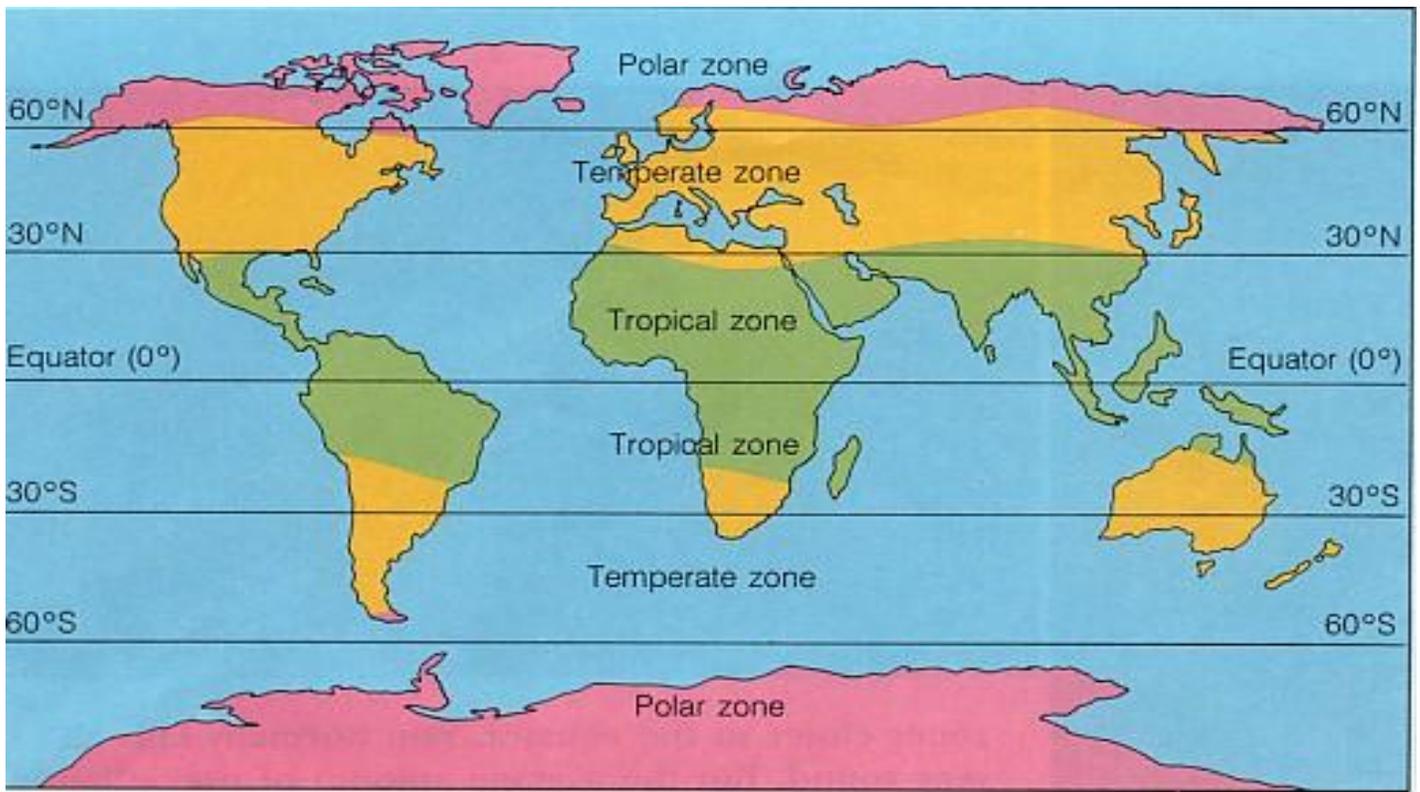
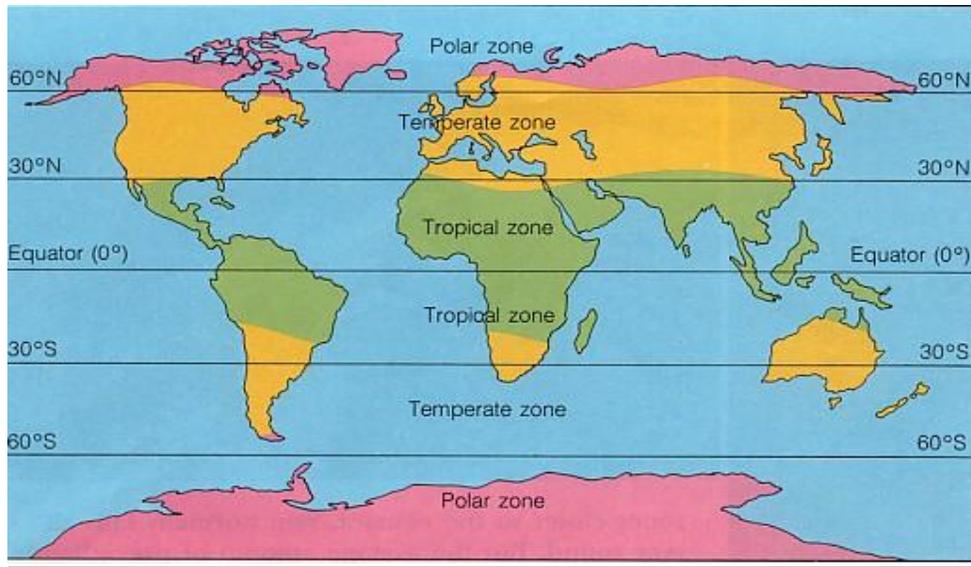


# Climates

## Around the World



# ***Climate Zones***



## ***What is climate?***

A climate tells the kind of weather you can expect in an area. Earth has many different climates. A climate zone is an area where you will find the same temperatures, precipitation (rain or snow) and the same kinds of vegetation (plants).



## ***Why are some places hotter than others?***

Sun warms our land, water and air. Places that get more direct sunlight are warmer. The most important thing that affects temperature is location in relation to the equator. The closer a place is to the equator the warmer it is. Places

on or near the equator are very hot because they get more direct sunlight all year. The area around the equator is called the tropical zone.

Places the farthest from the equator, near the North or South Poles, are the coldest. These areas are called the arctic, or polar zones.

As you move from the equator toward the poles, the temperatures get cooler. The areas between the poles and the equator are called the temperate zones. The temperatures vary from place to place and from season to season. It may be cold, cool, warm or hot.

### **Why do some places get more rain than other places?**

Precipitation is water that falls from the sky. It can be rain, sleet, hail or snow. Some land features, like mountains and oceans can affect how much rain falls in an area. Temperature and wind can also affect how much rain falls. In forest, it rains on many days of the year. In grassland, it rains mostly in one season. In deserts, it almost never rains.

### **Why do different areas have different kinds of plants?**

Plants need sunlight and water. Places that get more rain and sun have more vegetation and the plants are green and leafy. Places that are drier have less green vegetation and the plants are smaller.

## Location



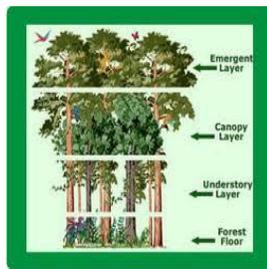
The tropics are located on and just north and south of the equator.

## Climate

The tropics receive about 12 hours of sunlight a day, year-round. Tropical climate is hot and moist. Rain falls almost every day. Rain and sun help vegetation, grow and improve the quality of air.

## Land

The tropics have different types of forests. There are tropical rain forests and drier forests. Rain forests are sometimes called jungles.



Rain forests have many types of plants in four different layers. The top layer has giant trees measuring up to 246 feet with thick trunks. In the next layer, the canopy, trees measure up to 100 feet. Shrubs and young trees are in the under layer. Ferns, herbs, and seedlings that need little

sunlight are on the bottom layer. Although there is a lot of vegetation in the rain forest, the soil does not have many nutrients because it gets washed away with the rain. This causes trees to fall. The plants and animals get their nutrients by recycling dead plants.



## Natural Resources

Natural resources are things on or in the ground that you can use. The large amount of vegetation provides a variety of natural resources used for food, shelter, clothing, and medicine. Tropical rainforests have many different kinds of trees and plants. There are fruit trees and herbs used for medicines.



## Homes

Houses in the rain forest are made of different plants. Shelter is made using twigs, branches, young trees, leaves, bark, and mud. Some homes do not have walls because it does not get cold in the rain forest. In rainy or flood areas, homes are built up on stilts. Other homes are built high in trees or on the ground in small clusters for protection from weather and animals.



### **Location**

The polar zones are located very far from the equator. They are at or near the North Pole and the South Pole.

### **Climate**

Antarctica is at the South Pole. Scientists visit there to work for short periods of time, but no one lives there because it is too cold. The North Pole is in the Arctic Ocean. People do live on the land closest to the North Pole. Winters are cold and long with a lot of snow and ice. Summers are short and cool because the polar zones only get a little sun. In some places, summer could be only a month long.



### **Land**

Not many plants can survive the long cold winters in the polar zone. Some areas are open and bare while others have forests of large evergreen trees (like Christmas trees.)

## Natural Resources



Natural resources are things you can find in or on the land that you can use. In the forests, trees are a natural resource. In the open areas, the only resources are snow and ice.

## Homes

Winters are very cold, so people need houses that will keep out the cold and wind.

In forest areas, people can cut down the tall, thin trees. The whole tree trunk is called a log and people use these to make log cabins.

In open areas, people long ago used the snow and ice to build a shelter. These houses are called igloos. It might seem funny to think of staying warm inside an ice house, but people built a small fire inside the house to keep warmer. The temperature outside is so cold, colder than in your freezer, so the ice and snow do not melt from the fire inside. The thick walls of snow and ice keep out the cold wind.

Today, logs and other materials can be carried by trucks and trains to the open areas. Igloos are only made for fun today.





### **Location**

In the temperate zone, between the equator and the polar zones, there are many deserts. They can be found on all continents.

### **Climate**

Deserts can be hot or cold, but all deserts are dry because it almost never rains. Many deserts are hot in the daytime and cold at night.

### **Land**

There are two kinds of deserts, arid and semi-arid deserts.



Arid deserts are very, very dry and are covered with deep sand. The wind can blow the sand all around and make little hills, called dunes. There is very little water anywhere.



Semi-arid deserts get a little more rain, but are still very dry. The deserts in America are semi-arid. There can be small underground rivers in these deserts.

## **Natural Resources**

Arid deserts have only sand. There is not enough rainfall for any plants to grow.

Only plants that do not need much water can grow in semi-arid deserts. These plants are small and dry. The soil in semi-arid deserts is a little sandy, but it is mixed with dirt and clay.

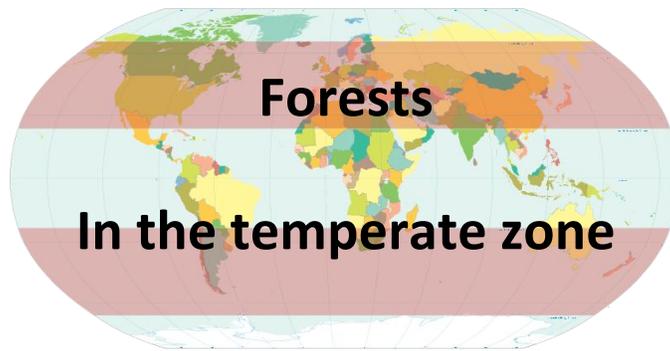
## **Homes**



There are no materials for houses in arid deserts. Most people who live in arid deserts do not live in one place. They are nomads who move from place to place with their herds of animals. Homes in this kind of desert have to be made of light cloth so they can be folded up and carried easily.



In semi-arid deserts the plants are small and dry and not good material for building shelter. The soil in these deserts is partly clay, sand and dirt. It can be mixed with water to make mud. In the past mud was used to make bricks and dried hard by the hot sun. These bricks are good for building a house and are called adobe. Today adobe can be made with modern technology. Also trucks can bring other materials to the desert.



## **Location**

In the temperate zone, between the equator and the polar areas, there are different types of forests.

## **Climate**



The weather in these forests is mostly warm in the summers and cold in the winters. There is precipitation, rain or snow, all year, but not every day.



## **Land**

A forest is a place where many trees of all kinds and sizes grow. In mountains, forests have very large evergreen trees with needles all year long (like a Christmas tree.) Other forests also have large trees with leaves that grow in the spring and fall off in the fall.

## **Natural Resources**

The many large trees that grow in the forests are a natural resource, because they provide wood.



## **Homes**

In forests, winters are cold therefore people need homes to shelter them from rain, snow and cold. For many years people have cut down trees to make their houses. Long ago, and sometimes today, tall, thin trees are cut down and the whole trunk is used to make log cabins.

Today we have more machines and special saws that can cut down larger trees and slice the huge trunks into boards. These boards are used to build many kinds of houses. Also, large trucks can bring other materials, like bricks to use to build modern houses.

Because we have trains and trucks to carry logs, the wood from forest trees is used to make houses in many areas that do not have trees.





## **Location**

Grasslands are found in the temperate zone on many continents.

## **Climate**

Most Grasslands have hot summers and cold winters. Some Grasslands are warm most of the year. Grasslands usually get rain in only one season of the year. It is very dry the rest of the year.



## **Land**

Grasslands are covered with different kinds of grass. During the rainy season, the grasses grow tall. Then, when the rains stop, the grasses become very dry. These grassy areas do not get enough rain for large trees to grow. Only a few small, thin trees grow in grasslands. Grasslands that have cold winters are called prairies. Grasslands that stay warm all year are called savannas.

## Natural Resources



Tall grasses and the nutrient-rich soil they grow in are natural resources. There are a few small, thin trees that can be a resource.

## Homes



In the prairies, winters can be cold and snowy, so people need houses that keep them warm. Long ago, people cut out squares of soil and grass, called sod. They put these bricks of sod together to make houses. Today, big trucks can bring wood, bricks and other materials to build modern houses.



In savannas, houses are usually huts made of twigs, small branches and dried grass. It is warm there most of the year, therefore houses only need to provide shelter from rain and sun. Sometimes there are no walls. In some savannas people still build homes this way. In other parts of the world, they are able to bring in other materials by trucks to build more modern houses.