

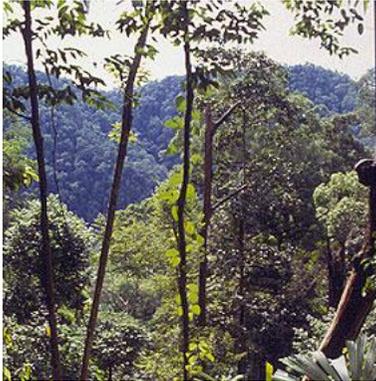
# World Environment facts

On the following pages you can find the answers to all the questions from the '**World environments**' activity.

When you've checked your scores, carry on reading to find out more about some of the different biomes.

# Answers

Here are the answers to the questions from the **'Which biome?'** activity:



Tropical rainforest



Temperate deciduous forest



Boreal or Taiga Forest



Hot desert



Tropical marine



Tropical grassland



Tundra



Cold desert

## POLAR FIRST: Passport to the Poles - activities sheet

### Temperature and rainfall

Answers to the **climate graphs** questions from the '**Which biome?**' activity:

- The first set of graphs are from Vancouver, Canada, in the **Boreal Forest** biome
- The second set of graphs are from Manley Hot Springs, Alaska, in the **Tundra** biome
- The third set of graphs are from London, England, in the **Temperate Forest** biome
- The fourth set of graphs are from California, USA, in the **Hot Desert** biome
- The fifth set of graphs are from Rothera, Antarctica, in the **Cold Desert** biome
- The sixth set of graphs are from Nassau, Bahamas, in the **Marine** biome
- The seventh set of graphs are from Buenos Aires, Argentina, in the **Temperate Grassland** biome
- The eighth set of graphs are from Manaus, Brazil, in the **Tropical Rainforest** biome

**Now read on for more facts about different biomes...**

# Tropical Rainforest

Climate	Seasons	Vegetation	Size and location	Birds, animals and insects	Soils
<p>Temperatures range from 25 -28°C, 77 - 82°F, the temperature range is greater during the day and night than it is during the year. High humidity and total annual rainfall of over 2000mm, 80 inches, often with violent storms. Usually light winds.</p>	<p>No real difference throughout the year, although some times of the year may be drier than others.</p>	<p>Mostly very tall trees with many different species. The very tallest can reach to 50m, 200 feet, and their trunks have few branches and the main tree canopy cuts out most of the light. Creepers climb up the main trees to get to the light, few plants which can grow on the ground. Trees and plants grow very quickly. Some may lose their leaves, but not all at the same time and the forest appears to always be green.</p>	<p>17% of the world's surface could be covered by tropical forest. They occur within 5° North and south of the Equator.</p>	<p>Few animals live on the ground, they mostly live in the trees, but many different types of insects live there. There are many different birds.</p>	<p>Very thin, the tree roots do not go far into the ground and the tall trees have buttress roots to stop them from falling over.</p>

# Temperate Forest

Climate	Seasons	Vegetation	Size and location	Birds, animals and insects	Soils
Temperatures range from 4° - 18°C, 42° - 64°F. The climate is often cloudy and rain falls throughout the year. Precipitation is usually in the form of rain, but there might be some snow which usually thaws quickly, especially on the lower land. It may be as high as 2000mm, 80 inches or as low as 600mm, 24 inches.	There are distinct seasons, mostly associated with variations in the amount of daylight during the year. Autumns are usually warmer than springs.	The natural vegetation of the area is deciduous forest and the trees lose their leaves during the cool winters with shorter light periods. There are fewer species than warmer forest regions. Shorter plants have the opportunity to grow before all the leaves come onto the dominant trees so shrubs and ground plants such as blue bells can grow in the spring. However many areas of forest have been cleared for farming and for urban developments.	Between 40° and 60° north and south of the equator on the western coastal margins of continents.	Many insects live in the trees and help to break down the leaves. Animals such as rabbits live on the plants. The insects are eaten by birds and other animals and they in turn may be eaten by predators such as foxes.	Because the leaves decompose quickly the soils are fertile and have therefore been used for farming.

# Temperate Grasslands

Climate	Seasons	Vegetation	Size and location	Birds, animals and insects	Soils
<p>Temperatures range from minus18° - 20°C, minus1° - 68°F, a very high annual range of temperature.</p> <p>Precipitation is around 600mm, 24inches, most of which falls during the summer months. In the winter there is snow which does not melt for many months. Sometimes there are blasts of cold air from the Arctic, but generally the winds are quite light.</p>	<p>The seasons are more pronounced, with temperature the main difference in the times of the year.</p>	<p>Mostly grasses with a few trees if there are rivers or if people have planted them. The grasses have long roots to reach underground water.</p>	<p>Between 40° and 60° north of the equator, in the centres of the continents. There are some temperate grasslands in the southern hemisphere between 30° and 40° south.</p>	<p>Many of these areas are used for farming, but there is also food for burrowing animals like rabbits or large animals such as antelopes. These provide food for other predators like wolves and birds like eagles.</p>	<p>When the grasses decay at the end of the summer they form a rich soil which is often now used for grain farming or for grazing animals.</p>

# Boreal/Coniferous Forest

Climate	Seasons	Vegetation	Size and location	Birds, animals and insects	Soils
<p>Temperatures range from minus 28°C to 15°C, minus 30° - 50°F, the annual range is the greatest in the world. Precipitation of 350mm, 15 inches, falls as snow in the winter, often blown into blizzards, which does not melt until the spring. There may be summer storms. The wind chill factor is high in winter.</p>	<p>Long cold winters and short warm summers, there may be periods when the sun barely rises in the winter, but in the summer it is light for almost 24 hours.</p>	<p>Trees have adapted to these harsh conditions. The summers are not long enough for them to grow new leaves each season so they are evergreen, but their leaves are adapted to withstand the cold as pine needles. They have a conical shape to protect them from the cold and stop them being blown over; this also allows the snow to slide off. Little light reaches the forest floor so there are not many ground plants, just a few mosses and lichens. The tree seeds are kept in cones.</p>	<p>60° north and south of the equator, and in areas of high altitude.</p>	<p>Because there is a limited food supply there are not many birds and animals. Some animals eat the new shoots and pine cones and these in turn are eaten by bears, and wolves.</p>	<p>The cold climate means there are not many worms and insects break down the pine needles and the soil is acid.</p>

# Hot Desert

Climate	Seasons	Vegetation	Size and location	Birds, animals and insects	Soils
Temperatures range from 20 – 30°C, 68 – 86°F during the year, but the temperature during a 24hour period can differ by as much as 50°C, 140°F with the night temperatures dropping below freezing point. There may be may years without real rain, but dew may fall at night, providing some moisture. When it does rain the rain is very heavy.	There are cooler seasons, but it is dry for most of the year.	Plants have adapted because there is little moisture either by storing water or by preventing moisture being evaporated by the heat. Most plants are short or bushy, often with long roots.	Only 6% of the world is true desert, but up to 33% of the world has very dry areas. Major deserts are usually found in the west of continents in latitudes 15° - 30° north and south of the equator.	Most animals that live in deserts are small and are active at night time, the exception to this is the camel. There are many lizards, snakes and spiders.	These can be very salty with very little goodness in them.

# Tropical Grassland

Climate	Seasons	Vegetation	Size and location	Birds, animals and insects	Soils
Temperatures range from 22 - 27°C, 72 - 80°F. 80% of the rainfall total of 1300mm, 50 inches, falls in four months of the year often as heavy storms. The amount of rainfall gets less away from the equator. The wet season is very windy.	Some seasonal variation of rainfall, with a wet and dry season.	Some trees, often with thorns to stop animals eating them. Most of the land is covered with grass. This can be very tall, but there are less trees and shorter grasses away from the equator. Some trees and plants store water for use during the dry season. There can be fires during the dry season. Trees lose their leaves during the dry season.	20% of the world's surface could be covered by tropical grasslands. They are located between 5 and 15° North and south of the equator.	Over 40 different types of large animals graze on the grass and they in turn are eaten by other animals such as lions. Insects burrow in the soil.	The soils are quite thin, but many plant nutrients are stored in the dry grasses during the dry season.

# Tundra

Climate	Seasons	Vegetation	Size and location	Birds, animals and insects	Soils
Temperatures range from minus 28°C to 5°C, minus 30° - 40°F. the precipitation is very low, only 110mm around 5 inches per year.	Short cool summers and severe long winters, with short spring and autumn transition periods.	There are no trees, just mosses and lichens. It has the lowest number of species of plant of all the biomes. Plants are small to avoid the wind chill in winter and have to be able to withstand the extreme cold and lack of available water. In spring or on south facing slopes flowers can grow and some small shrubs such as bilberries.	Lies north of the coniferous forests.	There are few animals and birds which live here all the year round, most migrate to warmer areas when the weather is very cold. Reindeer eat the mosses and there are wolves and arctic foxes.	Apart from the top 50cm or 20 inches the ground is permanently frozen. In summer the top layers become waterlogged as the melting water cannot flow away through the layers below.