

Geography Learning Organiser

Key Question: Do we live in a biome? (biomes)

Key Vocabulary

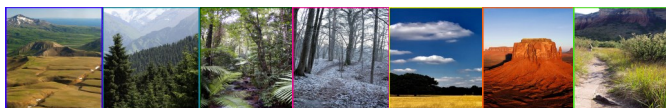
biome	A large area on the Earth's surface which has certain types of animals and plants living there.
vegetation belt	The plant life in a certain area. This is determined by climate, soil, drainage and elevation (height from sea level)
tundra	A cold, treeless region
forest	An area filled with trees and underbush
grassland	AN area with large, flat areas of grass
ice-sheet	A thick layer of glacial ice that covers a large area of land
desert	An area of land that receives no more that 25cm of rain per year
marine	Having to do with the ocean
shrubland	An area of plants which are no more than 3m high
coniferous	A tree producing cones with needle-like leaves
rainforest	An area of tall, mostly evergreen trees and high rainfall

Enquiry Skills - Disciplinary Knowledge

- Begin to suggest questions for investigating
- Begin to use primary and secondary sources of evidence in their investigations.
- Investigate places with more emphasis on the larger scale; contrasting and distant places
- Collect and record evidence unaided
- Analyse evidence and draw conclusions e.g. compare historical maps of varying scales e.g. temperature of various locations - influence on people/ everyday life

Fieldwork

Visit Coppetts Wood to find evidence of the biome in which we live.
 What vegetation can you find?
 What evidence of wild animals can you find?
 What is the temperature?
 What is the weather like?
 What evidence can you find to convince someone of the correct biome?



Learning Objectives

- To describe aspects of climate zones, biomes and vegetation belts
- Use maps, atlases, globes and digital/computer mapping to locate countries and describe the features studied.
- Use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of OS maps) to build their knowledge of the UK and the wider world.
- Use fieldwork to observe, measure, record and present the physical features in the local area using a range of methods including sketch maps, plans and graphs and digital technologies

Prior Knowledge:

Countries produce 'raw materials' which are created/found because of the physical features of that place
 An environmental region is an area that has a particular type of environment and physical features
 Rivers end at the sea
 Field Trips can be done to find out information, collect evidence and make observations about a place
 Climate zones describe the temperature and rainfall of an area

Style of Map

- aerial photos from different biomes
- terrain-level view on Google Maps – to compare and contrast areas of biomes
- globe
- Ordnance Survey Map – standard symbols – following routes
- world map showing biomes
- sketch maps with symbols and a key
- maps with letter/number co-ordinates
- maps for routes in different scales
- Junior Atlas with atlas symbols
- world map showing lines of latitude
- maps with 8 compass points
- maps of the local area including Coppetts Wood



Map Skills

- Use 8 compass points;
- Begin to use 4 figure co-ordinates to locate features on a map.
- Begin to draw a variety of thematic maps based on their own data
- Draw a sketch map using symbols and a key;
- Use/recognise OS map symbols.
- Compare maps with aerial photographs.
- Begin to use atlases to find out about other features of places. (e.g. find wettest part of the world)
- Draw a plan view map with some accuracy
- Identify significant places and environments
- Use index and contents page within atlases.
- Use medium scale land ranger OS maps.

SEND Core Knowledge

Animals and plants can be the same in different countries. Animals and plants can be different in the same country.

Animals and plants live where the conditions are right for them.

Conditions are different around the world.

Animals and plants need food and water to survive.

Biomes & Vegetation Belts

Geographers disagree on how many **biomes** there are - some are divided into smaller sections.

There are five major **vegetation belts** - tundra, forests, grassland, ice-sheet and desert.

Rainforest

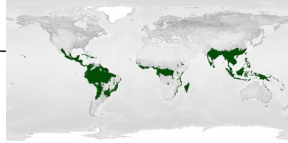
The rainforest biome remains warm all year. It must stay frost-free. The temperatures range from 20°C (68°F) to 25°C (77°F). Rainforests receive the most rain of all the biomes. - 2000 to 10000mm of rain per year.

The main plants are vines, palm trees, orchids and ferns.

The rainforest is located between the Tropic of Cancer and the Tropic of Capricorn

There are two types of rainforest - tropical and temperate. Tropical rainforests are found closer to the equator and temperate forests are found further north, near to the coast. The majority of houseplants come from the rainforest.

The tropical rainforest is a hot, moist biome where it rains all year long. It is known for dense vegetation that form three different layers. The top canopy contains giant trees. These prevent sunlight reaching the ground. The middle understory is made up of vines, smaller trees, vines and palms. The bottom layer - the floor is covered with wet leaves and 'leaf litter'. The dead leaves quickly turn to compost which goes back into the ground.



Grassland

The range of temperature can be -20°C (-4°F) to 30°C (86°F).

The Grasslands receive around 500-900mm of rainfall per year

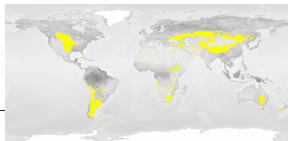
The grasses are made up of prairie clover, salvia, oats, wheat, barley and coneflowers

Grassland can be found on every continent except for Antarctica

Grasslands are open and continuous flat areas of grass. They are often located between temperate forests and deserts. Grasses are usually between 25cm and 2 metres tall! The height of the grass is determined by the amount of rainfall.

Tropical Grasslands have dry and wet seasons that remain warm all the time. Temperate Grasslands have cold summers and warm summers.

Every year, the grass dies to protect it from the winter/dry conditions. The soil protects the roots and it starts to grow again in the new season.



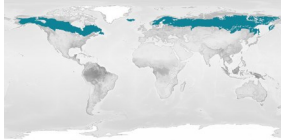
Coniferous Forest

The Coniferous Forest has a winter with temperatures ranging from -40°C (-40°F) to 20°C (68°F). And a summer with an average temperature of 10°C (50°F).

The forests are made up of trees that produce cones and needles called 'coniferous-evergreen trees'. Needles help the trees survive in areas that are very cold or dry. Some of the common trees are spruce, pine and fir.

Coniferous forest regions have cold, long, snowy winters and warm, humid summers. They have well-defined seasons.

The Coniferous Forest is between the Tundra and the Deciduous Forest.



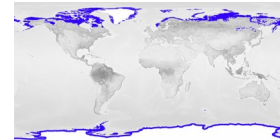
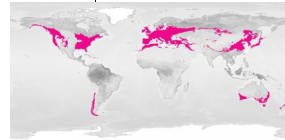
Temperate Deciduous Forest

The Temperate Deciduous Forest has temperatures between -30°C (-22°F) and 30°C (86°F) with a yearly average of 10°C (50°F). Hot summers and cold winters are typical. The forest receives 750-1500 mm of rain per year.

The trees found here are oak, maple and beech, shrubs, herbs and moss.

The forests have four seasons. Leaves change colour and fall in Autumn, growing back in the Spring. Because it gets so cold, the trees have a period of being 'dormant'. They have thick bark to protect them from the cold weather. Only small amounts of sunlight get through to the floor so smaller plants can grow here.

The Temperate Deciduous Forests are between the Polar region and the Tropics.



Tundra

The Tundra receives 150-250mm of rain per year. Temperatures usually range between -40°C (-40°F) and 18°C (64°F). The Tundra receives such little rainfall, it is similar to a desert. Temperatures can get warmer in the summer. Tundra winters are long, dark and cold for six months of the year. There is always a layer of frost under the ground 'permafrost'. Tundra can be found at the tops of mountains elsewhere in the world. The Tundra is still quite a wet place because the water there evaporates much slower due to the lower temperature. There is almost no vegetation due to the frost. There is some lichen, moss, grass and shrubs



Desert

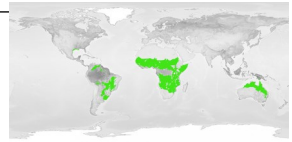
During the day, desert temperatures rise to 38°C (a little over 100°F). At night, desert temperatures fall to an average of -3.9°C (about 25°F) The temperature is different at night to the day, because of the lack of clouds, the heat can escape easily.

Deserts get about 250mm rain per year - the least amount of rain of all the biomes. Cacti, small bushes and short grasses grow in the desert. Some plants can survive by being dormant and then flourishing when water is available. Some plants such as cacti store water in their stems and use it slowly, bushes conserve water by growing only a few leaves or having large roots.

Shrubland

The summers are hot and dry with temperatures reaching up to 38°C (100°F). In the winter, temperatures stay around -1°C (30°F) and are cool and moist. They receive around 200-1000mm of rain per year.

The vegetation includes herbs, shrubs and grasses. Shrublands include woodland and savanna. Shrublands get more rain than deserts and grasslands, but less than forests. There are usually short trees, there is not enough rain to support tall trees. Shrublands are usually quite open, so grass grows between the shrubs. Some plants have adapted to fire, to protect themselves from the frequent lightning that occurs in the summer. Some plants have small needle-like leaves to save water, some have leaves that reflect the sunlight.



Marine

- Oceans - Atlantic, Pacific, Indian, Arctic, and Southern Oceans.
- Coral reefs - Coral reefs are small in size when compared to the oceans, but around 25% of marine species live in the coral reefs making them an important biome. .
- Estuaries - Estuaries are areas where rivers and streams flow into the ocean. This area where freshwater and saltwater meets, creates an ecosystem or biome all its own with interesting and diverse plant and animal life.
- Over 90% of the life on Earth lives in the ocean.
- The average depth of the ocean is 12,400 feet.
- Around 90% of all volcanic activity takes place in the world's oceans.
- The Mariana Trench is the deepest point in the ocean at 36,000 feet deep.
- The largest animal on Earth, the blue whale, lives in the ocean.
- Humans get most of their protein by eating fish from the ocean.
- The average temperature of the ocean is around 39 degrees F.