



Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

Topic 1: Parts of an Ecosystem

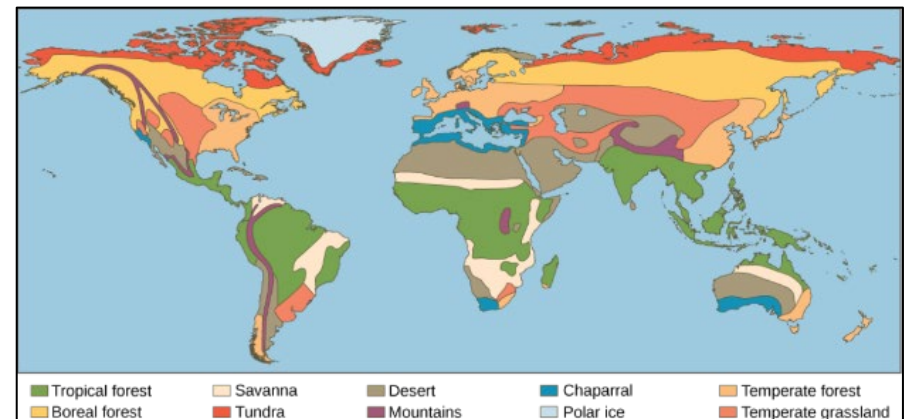
Our planet is a diverse and beautiful place. It is broken down into different areas called biomes.

An **ecosystem** is the interaction of living and non-living things in an environment. A **biome** is a specific geographic area notable for the species living there. A **biome** can be made up of many **ecosystems**. For example, an aquatic **biome** can contain **ecosystems** such as coral reefs and kelp forests.

The range of plants and animals is called biodiversity and is made up of flora (plants) and fauna (animals). Different parts of the ecosystem can be divided into 2 further categories called biotic (living things) and abiotic (non-living things e.g. rainfall).

Each ecosystem has its own challenges in terms of temperature and rainfall – or a lack of rainfall.

Biome	Temperature	Rainfall	Vegetation
Desert	Hot (>30°C) in day Cold (<0°C) at night	Low precipitation Less than 30 cm per year	Xerophytes (e.g. succulent bushes) Adapted to water conservation
Grassland	Warm (20 – 30°C)	Seasonal droughts common Medium amounts of moisture	Grasslands with widely spaced trees Fires prevent trees from invading
Shrub land	Moderate (15 – 25°C)	Rainy winters, dry summers	Dry, woody shrubs Regrow quickly (fire a constant threat)
Coniferous Forest (Taiga)	Cold (0 – 15°C)	Small amount of precipitation Wet due to lack of evaporation	Coniferous trees densely packed Little variation in species
Tropical Rainforest	Hot (25 – 30°C)	Very high precipitation More than 250 cm per year	Epiphytes, tall trees and undergrowth Large diversity in species
Tundra	Freezing (<0°C)	Little precipitation	Small, close to the ground (e.g. moss) Perennial plants grow in summer





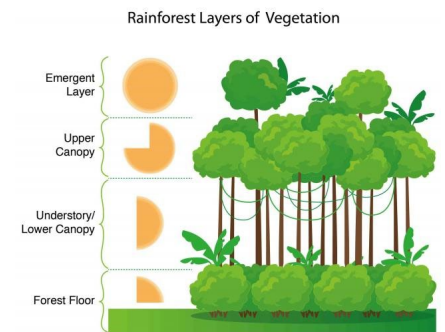
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Topic 2: Tropical rainforests and coral reefs

Tropical rainforests:

The tropical rainforest biome has four main characteristics: very high annual rainfall, high average temperatures, nutrient-poor soil, and high levels of biodiversity (species richness). Rainfall: The word “rainforest” implies that these are the some of the world's wettest ecosystems.

- Only a thin layer of decaying (rotting) organic matter is found. Most **tropical rainforest soil** is relatively poor in nutrients. Millions of years of weathering and torrential rains have washed most of the nutrients out of the **soil**. More recent volcanic **soils**, however, can be very fertile. As a result, roots from trees will run across the land in the soil to get the most nutrients and water that it can.
- The Rainforest has **4 main layers**, each layer has different characteristics in terms of light and shade, available food and water, size of animals living there.
- Plants and animals adapt to live in these layers by changing their physical appearance and structure or through changing behavior.



Coral reefs:

Coral reefs are important ocean habitats and offer a compelling case of the risks of climate change. Reefs provide a large fraction of Earth's biodiversity—they have been called “the rain forests of the seas.” Scientists estimate that 25 percent of all marine species live in and around coral reefs, making them one of the most diverse habitats in the world.

- Coral reefs grow in **shallow, clean ocean waters** on either side of the **Equator**, because they need sunlight and warm temperatures all year to survive.
- Lots of different types of sea creatures call coral reefs their home – giant clams, starfish, sea turtles, seahorses, eels, cuttlefish and many, many more. The reefs provide this diverse range of animals with everything they need, including **food** and **shelter**.
- A lot of animals who live on the reef **camouflage** themselves to blend amongst the coral, either to stay safe from other animals or to hide as they hunt.
- **Plants** also live on reefs. **Algae** live inside soft coral, using sunlight to provide food and help the coral grow.





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Topic 3: Hot deserts and cold deserts.

A desert is classified as a dry biome where little or no rain falls at any time throughout the year. Therefore, deserts can be hot and cold!

Hot deserts:

The characteristics of hot deserts include **high temperatures** in summer; greater evaporation than precipitation, usually made worse by high temperatures, strong winds and lack of cloud cover; considerable variation in the occurrence of **precipitation**, its intensity and distribution; and low humidity.

- Plants **adapt** to the climate to prevent evaporation of water from its stem so it can survive. It has spines on its skin to prevent animals eating it dying.
- The smaller animals and insects use the sun to orientate themselves to save time so they are not out in the blistering sun for longer than is necessary.
- Deserts are very difficult places to live in which is why many people who live in this biome move around frequently to locate resources.



Cold deserts:

Cold deserts are hot and dry in the summer but cold and dry in the winter, cold desert climates are found at higher **altitudes** than hot desert climates. Examples of cold deserts can be found in places such as Chile, China and the USA.

- Cold deserts are mostly found on high plateaus or mountains in temperate regions.
- These deserts get around 15-26 cm of rain per year.
- Cold deserts are also known as **polar deserts**.
- **Antarctica** is the world's largest cold desert.
- In winter, animals in these areas **adapt** to the temperatures by growing thick fur coats





Vocabulary	Wider Research	Apply
<ol style="list-style-type: none">1. Biome2. Ecosystem3. Food chain4. Desert5. Tundra6. Savanna7. Abiotic8. Biotic9. Climate10. Rainfall11. Polar12. Adaptation13. Behaviour14. Physical15. Extreme16. Temperature17. Interdependent18. Tourism19. Sustainable20. Sahara21. Precipitation22. Altitude23. Adaption24. Conservation25. Camouflage26. Shelter27. Soil28. Equator29. Tropical30.	<p>BBC Bitesize</p> <p>Food chains</p> <p>Conservation</p> <p>Blue Planet on BBC iPlayer</p> <p>Further Reading:</p> <p>BBC article: Rainforest on fire 2019</p> <p>WWF article: WWF</p> <p>Encyclopaedia Britannica : Amazon Rainforest</p> <p>Desertification: Desertification causes and effects</p> <p>IAATO: Responsible Arctic Tourism</p>	<p>Get creative</p> <ul style="list-style-type: none">• Create a fact sheet about the Amazon Rainforest.• Create a video documentary about the Sahara and the different cultures that use the area.• Decorate biscuits to show the main characteristics of different biomes.• Create a climate graph for a place you may have visited and let me know which biome it is located in. <p><u>Exam Style Questions:</u></p> <p>1) For flora or fauna, explain how a species have adapted to survive in the hostile desert climate. (5 marks)</p> <p>2) Assess the extent to which rainforests can be managed sustainably (6 marks)</p> <p>3) With reference to a place you have studied, outline the threats to a coral reef ecosystem. (4 marks)</p>