Y8 Semester 2

Excellent Ecosystems

1. What is an ecosystem

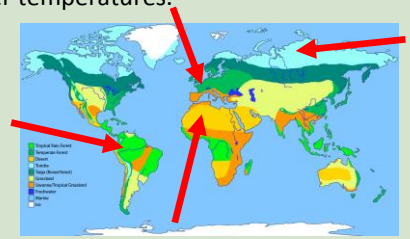
An ecosystem is the **(biotic) living** and **(abiotic) non-living** parts of an environment and the relationships that exist between them.

Biotic	Animals, plants, trees, insects, bacteria, fungi
Abiotic	Soil, rock, water, air, sun

2. Location of global biomes

Temperate Areas like the UK have a milder climate than you expect at this distance from the Equator. The warmer/cooler currents from the North Atlantic/Pacific Drift Current helps maintain warmer temperatures.

Tropical Rainforests: In the tropics, the sun's rays are at a high angle in the sky for a whole year. Rays are concentrated over a smaller area than the poles.



The Tundra: Average temperature is the main factor affecting plant growth. Temperature gradually decreases as you move away from the Equator. As latitude increases, so temperature decreases.

Deserts: Continentality, the effect of distance from the sea, also affects vegetation. Away from the sea, the land heats up in the hot season and cools quickly in the cold season. The increases the annual temperature ranges and reduces precipitation.

3. Global Ecosystems - BIOMES

Polar – Arctic/Antarctic
Very low temperatures and dry conditions – cold desert – Temperatures can fall below -50ºC. Arctic hare, Arctic fox, little vegetation

Tundra – Northern Europe and Canada
Low growing plants adapted to cold, windy and dry conditions. Reindeer, wolves. Ground is frozen for most of the year. Snow.

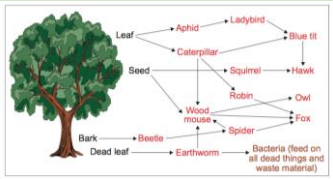
Temperate Deciduous – 30º-40º N of Equator – UK
Mainly Deciduous forest – trees lose their leaves in winter, these decompose add in nutrients to the soil. Spring flowers before the tree canopy grows.

Hot Desert – Roughly 30º N and S of equator
High daytime and low night time temperatures, very dry, less than 250mm a year. Little vegetation, sandy soils.

Tropical Rainforest – Along the Equator
High temperatures and heavy rainfall with no seasons. Cover 6% of Earth's surface. Over 50% of world's species live here.

4. Interactions within an ecosystem

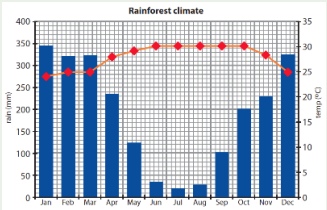
The different parts of the ecosystems interact so it functions effectively. If one part changes, it will effect the whole ecosystem. It includes food chains, food webs and the nutrient cycle.



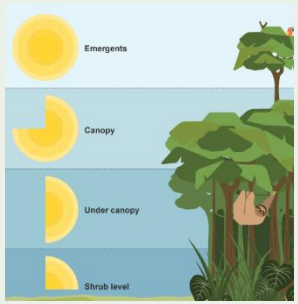
5. The Tropical Rainforest

Rainforest Climate

Very wet over 2,000mm of rainfall per year. Very warm with an average daily temperature of 28°C.



Characteristics



Adaptations

Buttress roots - Massive ridges help them to support large trees. The **shallow roots** also spread out under the soil to absorb rainwater which quickly evaporates and to take up nutrients from the poor soils.
Drip tips - plants have leaves with **pointy tips**. This allows water to run off the leaves quickly without damaging or breaking them.
Sloths - use **camouflage** and move very slowly to make it difficult for **predators** to spot.

Deforestation

- Loss of species
- Rainfall could decrease by 12% by 2050
- Forests catch CO2, deforestation releases CO2
- Loss of nutrients in soils
- Disruption of the food web
- Loss of indigenous people's traditional way of life (31% of indigenous lands already logged illegally)
- 75% reduction in HEP production due to siltation of rivers