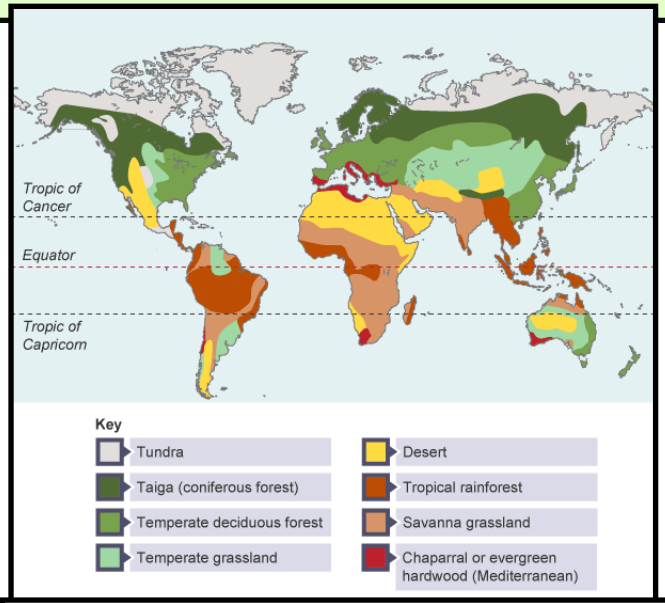
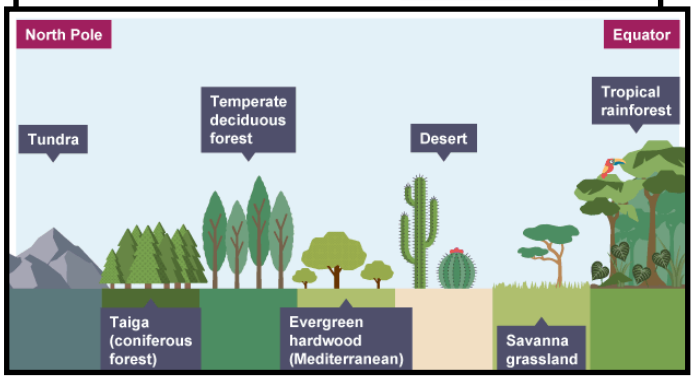
Paper 1—Section C—Ecosystems

An **ecosystem** is an environment in which a community of plants and animals (biotic) that share an environment with non-living things (abiotic) such as soil.





The **location** or ecosystems is affected by **latitude and the global atmospheric circulation.**

Local factors that affect the location of ecosystems are;

*Prevailing wind

*Altitude

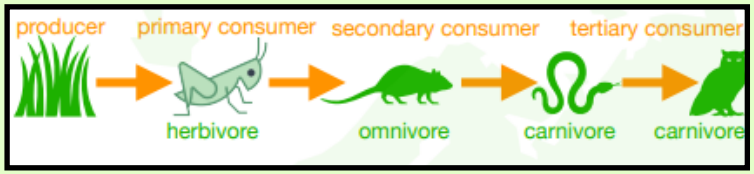
*Distance from the sea

*Ocean currents

*Relief

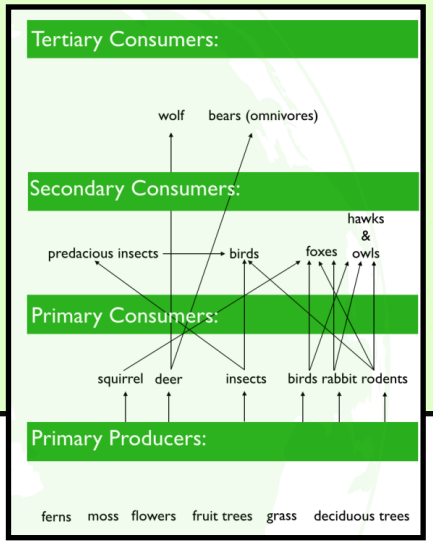
*Soil

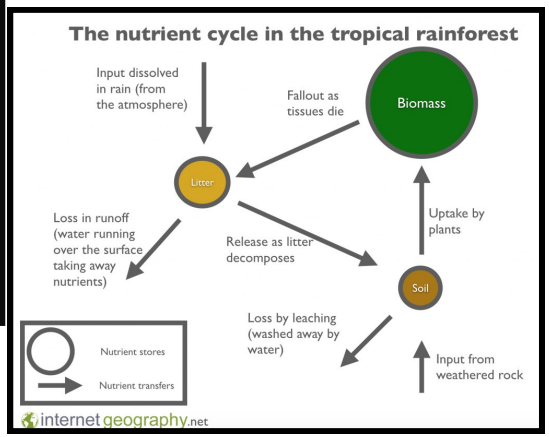
A **food chain** only follows one path as animals find food. eg:



A **food web** consists of many food chains. It shows the many different paths plants and animals are connected.

Organisms within an ecosystem can be classed as producers, consumers or decomposers. Energy flows through these organisms within the ecosystem.





Gersmehl diagram (the nutrient cycle shown below) shows **the differences in nutrient flow and storage between different types of ecosystems**. Nutrients are stored in one of three nutrient sinks – either as biomass, litter or soil. Biomass is the total mass of living organisms (mainly plant tissue) in a given area.

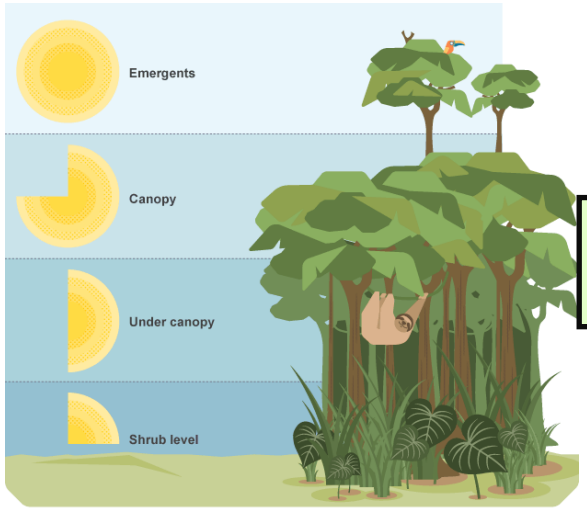
The stores are different sizes for different ecosystems.

The UK's main **terrestrial (land)** ecosystems are; **Moorlands, Heathlands, Wetlands, Deciduous and Coniferous.**

Marine ecosystems are also important to the UK. Humans get lots of resources from the **biosphere** like food, water, natural resources, energy. But human use can **exploit** environments.

The biosphere is divide into the ecosphere, hydrosphere, lithosphere and atmosphere.

Tropical Rainforests



Plant adaptation: Buttress roots

Animal adaptation: Spider Monkey

Facts: Tropical rainforests have a high **biodiversity** (the number of different plant and animal species in an area).

Climate: hot and **humid.** Over 2,000 mm of rainfall per year. Daily temperature average of 28°C.

Soil: Fertile but thin, fast **decomposition.**

Tropical rainforests are important because they

*__regulate the composition of the atmosphere (O2 and CO2)__

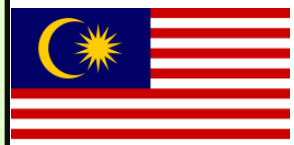
*provide food, medicine, natural resources and homes for people

HOWEVER, they are at risk from **deforestation.**

The **Malaysian** rainforest is **sustainable managed by**

***eco-tourism** ***selective logging**

***national parks** ***education**



Temperate Deciduous Woodlands.

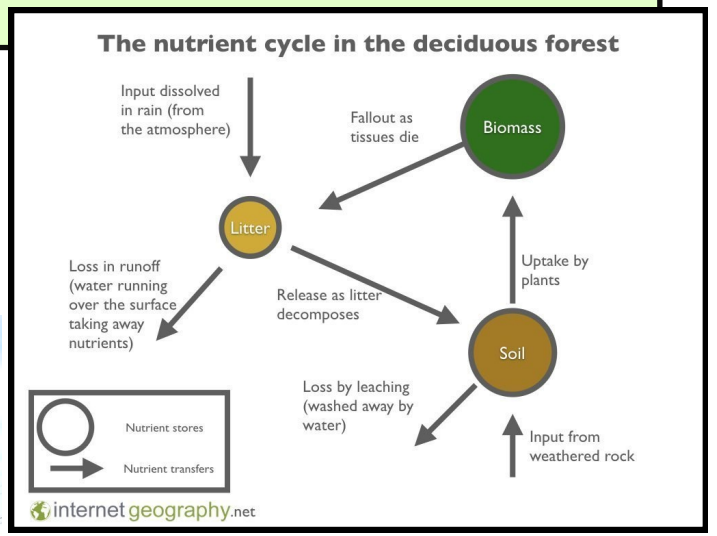
Temperate deciduous forests are found between 40° and 60° north and south of the equator.

The **rainfall is high**, between 500-1,500 mm a year. The temperatures remain on average above 0°C even in the winter. The summer temperatures average between 25-20°C. The **winter is cooler**, encouraging the trees to shed their leaves.

Soils are fertile. Fallen leaves decompose to add nutrients.

Plant adaptation: Oak trees lose leaves

Animal adaptation: Hedgehog hibernates



Humans use TDW for many things including **resources, recreation and conservation.**

The New Forest in Hampshire in the South of England. This ecosystem is managed by

*footpaths, gates, fences

*education

*visitors centres

Paper 2—Section A— Skills needed

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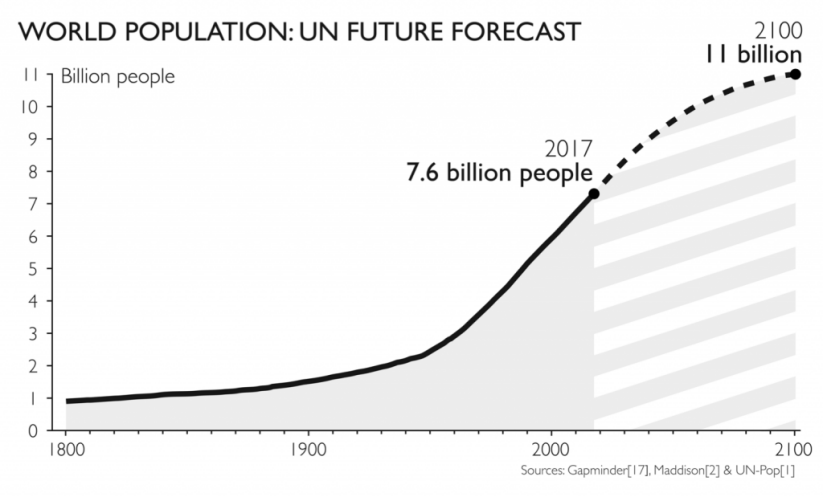
1.Can you describe the location of deserts using the map on page 1?

2.Can you compare the climate graphs for the TDW and TRF on the right?

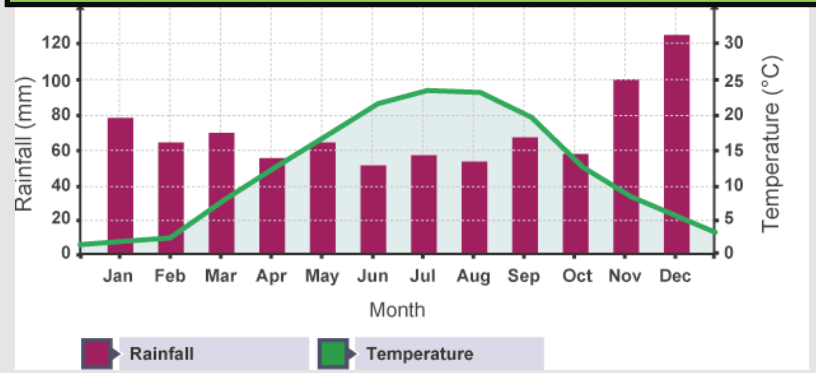
3 and 6.Can you describe the change in forest cover in the maps labelled 1950 and 2020?

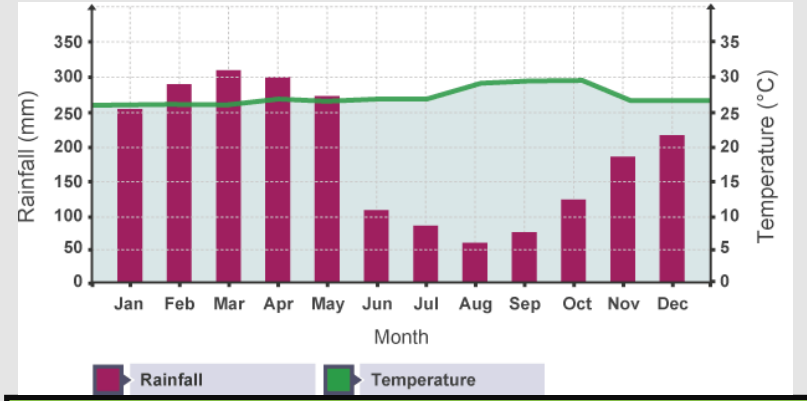
4.Explain the difference in the nutrient cycle between TRF on page 1 and TDW shown on page 2.

5.Use the line graph below to suggest how global population is projected to change. You should also suggest the impact of this on global resources.



Climate chart for TDW (top) and TRF (below)





Change in forest cover in Borneo, Malaysia