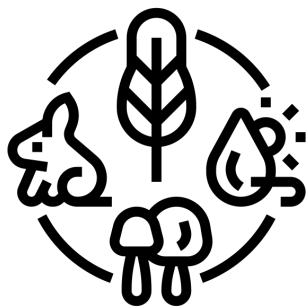


9.2

Year 9 Module 2

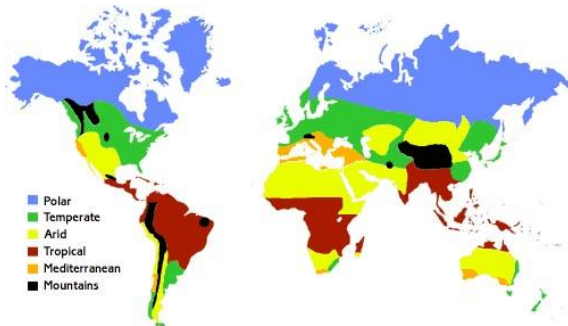


The living world

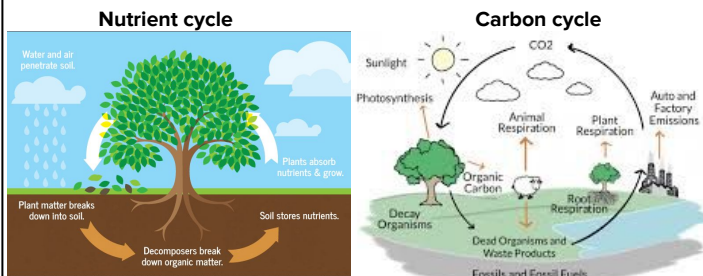


Geography Knowledge Organiser

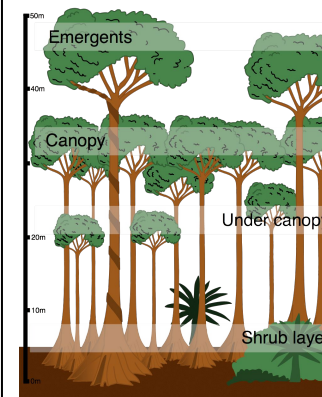
9.2.1 - Ecosystems



Food chains Plant → primary consumer → secondary consumer



9.2.2 - Tropical rainforests



Tropical rainforests are located between 10°N and 10°S of the Equator where temperatures stay near 28°C throughout the year. Rainforests typically receive over 2000mm of rain each year.

Vegetation has 4 distinct layers, shrub, under canopy, canopy & emergent.

The rainforest provides us with:
Regulating Climate and Air Quality;
Preventing Soil Erosion;
Carbon Storage;
Provisioning Goods (fuel, food, water).

Adaptations

- Buttress roots** - Shallow and wide roots to anchor tall growing trees in poor quality soil
- Lianas** - Woody vines which grow fast and wrap around trees to reach light
- Sloth** - Moves slowly to avoid detection. Strong arms and claws to grip branches. Algae grown on fur for camouflage.

9.2.3 - TR impact & management



Humans affect the rainforest through deforestation (cutting down trees). We do this for:
Logging – fuelwood, shelter, paper
New roads – connecting remotes locations to one another
Mining – some rainforests have rich mineral reserves of diamonds and gold
Ranches – large farm usually for rearing cattle for beef production
Energy – lots of water is available in the rainforest so land is cleared to create hydroelectricity plants.

Some strategies used to be more sustainable are:

- Agro-forestry** – growing trees and crops at the same time
- Selective logging** – only chopping down old trees and not rare species
- Education** – teaching people about the impact of deforestation
- Afforestation** – replanting more trees than are cut down
- Forest reserves** – creating areas of forest which are protected from any deforestation.



9.2.4 - Cold environments

Polar	Tundra
<p>Climate - long cold winters, with annual temperatures mostly below freezing. Polar areas are often windy, with very little precipitation. Permanent ice caps cover polar landscapes.</p> <p>Soil - the soil is covered in ice throughout the year.</p> <p>Plants - hundreds of species of moss, algae and lichen survive the harsh conditions of the Polar biome. Few other plants can survive.</p>	<p>Climate - cold, windy and little rainfall. Snow covers the ground for much of the year. In the most southern parts of the surface layer melts in the summer.</p> <p>Soil - this is high in organic material because it is too cold for dead organisms to decompose.</p> <p>Plants - trees do not grow in the tundra. When the snow melts, small plants flower. In mountainous areas, cushion plants grow between the rocks.</p>

Adaptations

- Bearberries** - Low growing and thick stem to survive strong winds. Waxy leaves to prevent water loss
- Lichen** - does not need soil to grow. It grows very slowly, can withstand very cold temperatures and survives beneath snow.
- Polar bear** - layer of fat & fur that helps them blend in and keep dry off, and black skin to absorb the sun's heat

9.2.5 - CE impact & management



Humans affect the cold environments through the following:

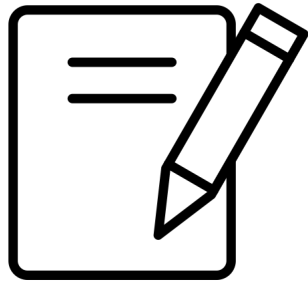
- Off road vehicles** – Off road driving is a popular tourist activity & go hunting and fishing
- Oil Extraction** – From tankers or pipelines can lead to direct fatality of organisms, buildup of toxins in the food chain
- Fishing** – Krill fishing is depleting food supplies for whales and penguins in Southern Ocean.
- Tourism** – Cruise ships increase pollution (from ships and tourists).

Some strategies used to be more sustainable are:

- Pumping stations** - built periodically to keep the oil moving
- Pipes built under features** - such as rivers to minimise the impact
- Pipe insulation** - to avoid permafrost melt/pipes cracking
- Earthquake monitoring** – detectors to stop oil flow should an earthquake occur
- Pipe is raised high** - for animals to pass under



Home study questions



9.2.1 - Ecosystems

DEVELOPING

Describe the locations of tropical rainforests

SECURING

Explain the nutrient cycle

MASTERING

How have humans impacted the carbon cycle?

CHALLENGE

How would deforestation affect the nutrient cycle?

9.2.2 - Tropical rainforests

DEVELOPING

Identify the 4 layers of the rainforest

SECURING

Explain why the tropical rainforest is found 10° north and south of the equator

MASTERING

Explain how the rainforest helps to regulate our climate

CHALLENGE

Choose an animal or plant and explain how it has adapted to the tropical rainforest

9.2.3 - TR impact & management

DEVELOPING

Explain how humans have negatively impacted the rainforest

SECURING

How will deforestation impact the climate?

MASTERING

Explain how an increase in population in cities and towns close to rainforests may lead to deforestation

CHALLENGE

Explain what you believe to be the best strategy that has been introduced to make the human use of the rainforest more sustainable

9.2.4 - Cold environments

DEVELOPING

Describe the climate of the polar regions

SECURING

Explain why polar regions are located at the poles

MASTERING

Why are polar regions sometimes referred to as polar deserts?

CHALLENGE

Outline the adaptations of the polar bear and explain how these adaptations are linked to the climate of the Arctic

9.2.5 - CE impact & management

DEVELOPING

Explain how humans have negatively impacted cold environments

SECURING

How is globalisation linked to the unsustainable use of the earth's cold environments?

MASTERING

What do you believe to be the best solution for overcoming the unsustainable use of cold environments?

CHALLENGE

Explain how unsustainable fishing in the earth's cold environments could have a global impact