

What factors affect the location of biomes?–

- Rainfall – The amount and seasonal patterns
- Temperature – The average annual temperature
- Relief – The shape of the land
- Geology – The rocks within an environment
- Soils – certain plants will only grow with
- Latitude – How far the location is from the equator

Cold Environment-

Located in very high latitudes (at top of earth) where there is high pressure which means there is very little rainfall.

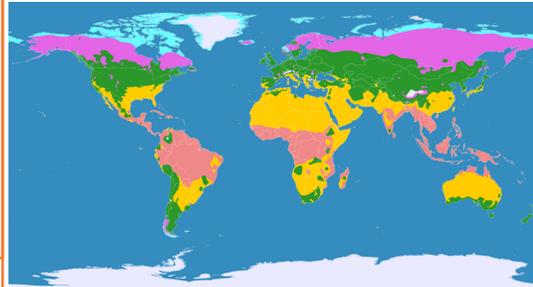


Polar bears have adapted to the cold environment by:

- Small ears to reduce heat loss
- Sharp claws to catch prey
- Thick layer of blubber to act as insulation and store energy
- White fur for camouflage

Ecosystems

An ecosystem is an interconnected community of all of the living things - biotic (e.g. plants and animals) and all of the non-living parts - abiotic of the environment (e.g. soil, water and air) that they require to survive.



Polar Zone– The surface of the earth covered in ice and snow and very low surface temperatures.

Temperate Zone – Areas of consistently moderate temperatures, rainfall and wind.

Arid Zone– Areas of high temperatures and low rainfall resulting in little plant growth.

Tropical Zone– Areas of high temperatures but with high rainfall resulting in tropical rainforests.

Opportunities

Fishing
Mineral extraction
Scientific exploration
Tourism



Arctic Fox



Orca



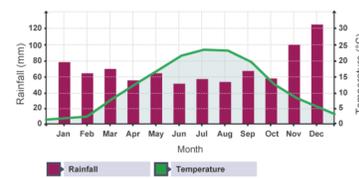
Seal

Challenges

Climate Change
Air pollution
Migrating Species

Temperate Forest

We live in a temperate forest. The rainfall is high and temperatures change throughout the year.



The trees have typically large broad leaves, such as oak, beech and elm.

Humans use woodlands in a variety of ways:

- as a **resource** - wood is used for fuel
- for **walks/ bikes etc**
- for **conservation**



Cannock Chase –
Area of Outstanding Natural Beauty



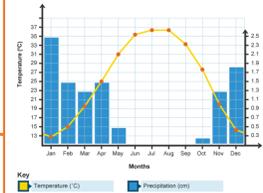
Forest and woodlands cover around 40%
About 2 million trees.

Desert –

Found between the Tropic of Cancer or the Tropic of Capricorn it is characterized by hot and dry sinking air.

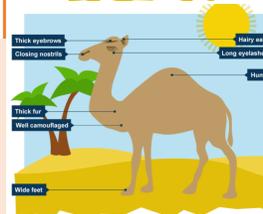
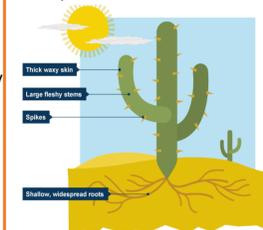
What causes deserts:

- High pressure
- Rain shadow effect
- Away from sea (inland)



Nomads - no have no fixed home and will move around the desert using local animals to help

Plant and animal adaptation:



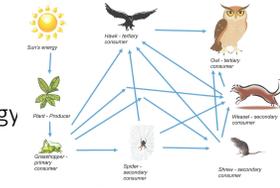
Food Web:

shows who eats who in an ecosystem.

Primary Consumer animals which gain energy from eating *producers*

Secondary Consumer animals which gain energy from eating *primary producers*

Producer – plants which produce energy by photosynthesis



Tropical Rainforests –

Tropical rainforests are found around the equator. The tropical rainforest contains far more species of plants and animals than any other biome. They cover approximately six per cent of the Earth's surface

Forest floor

•Very little light reaches the forest floor (2%) - so plants grow slowly.

•The ground is covered in fallen leaves, rotting branches

Understory

Birds, butterflies, frogs, snakes and lots of insects live here.

Canopy

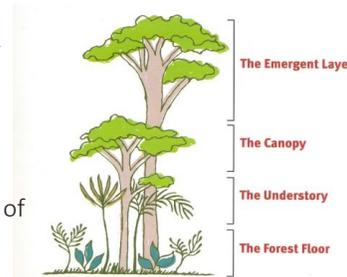
•The second highest layer - 30-45m The canopy blocks out the sun from lower layers

•It contains the most plant and animal species

The emergent layer

•The tallest layer - over 40 metres.

•Contains only a few tall trees which grow taller than the trees of the canopy.



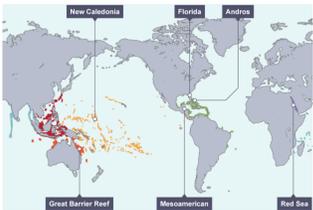
Plant adaptations-

- Buttress roots
- Drip tip
- Epiphytes

Coral Reefs –

Coral reef - a ridge of rock in the sea formed by the growth and deposit of coral.

Although they cover less than 0.1% of the world's ocean surface, they provide a home for at least 25% of all marine species. Coral reefs are found between 30° north and 30° south of the equator.



Opportunities

Governments and the public must be educated on how to protect
Conservation allows careful use of the coral reef, while protecting it from activities which cause loss and damage.
Marine protected areas

Challenges

Soil erosion
Fishing with explosives
Climate change and coral bleaching
Fish with poisons
Coral mining

Opportunities

- Substitution - Use different materials to make things, instead of timber from the rainforest
- Ethical Shopping
- Protecting the rainforest
- Ecotourism

Challenges

- Deforestation for:
- Logging
 - Cattle ranching
 - Hydro-Electric Power
 - Mining
 - Palm oil plantation
 - Crops

Key Words-

Abiotic = non – living parts of the ecosystem

Adapt = to become adjusted to conditions.

Biome = a large geographical area of distinctive plant and animal groups, which are adapted to that particular environment

Biotic = living parts of an ecosystem

Buttress Roots- A tree root that grows above the forest floor to provide nutrients and support.

Deforestation = The clearance of forested areas by people causing permanent damage to the natural ecosystem, including plant and animal species

diurnal range = the difference between the lowest temperature at night and the highest temperature in the day.

Ecosystem = an interconnected community of all of the living things - biotic (e.g. plants and animals) and all of the non-living parts - abiotic of the environment (e.g. soil, water and air) That they require to survive.

Epiphyte - Plants which live on the branches of trees high up in the canopy of the tropical rainforest.

Mineral Extraction – Taking out the rocks and minerals out of earth

Polar = Very cold all year round. There is a permanent or semi-permanent layer of ice.

Scientific Exploration - the act of searching for the purpose of discovery of information or resources

Sustainable - An activity which does not consume or destroy resources or the environment.

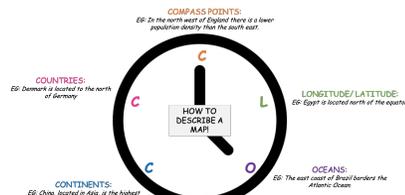
Tundra = An area where it is below freezing for most of the year and the ground is permanently frozen

Describe the Distribution...

When asked to describe the distribution use CLOCC.

As a minimum use place names and compass points.

- Compass points
- Longitude/ Latitude
- Oceans
- Continents
- Countries



How to revise:

To revise you should reduce these notes further, use colour and images. You could make a mind map/ poster/ revision cards/notes/ presentation/ song/ answer the following questions.

1. Define ecosystem
2. Which of the following is true of the desert?
 - They have a high diurnal range
 - They have a low diurnal range
 - They have no diurnal range
3. State the factors that affect the distribution of biomes
4. Where are hot deserts mainly located?
5. Arid is another word for what biome?
6. What is adaptation?
7. Where is tundra located in high or low pressure?
8. What is a coral reef
9. Name your small scale ecosystem
10. What is deciduous woodland?
 - Woodland where the trees lose their leaves in winter
 - Woodland where the trees lose their leaves in summer
 - Woodland where the trees never lose their leaves
11. True or false: deserts have a high diurnal range
12. Explain what causes deserts to form.
13. State three adaptations of plants in rainforest
14. State three adaptations of animals in the tundra
15. Draw an annotated diagram of a tropical rainforest and its layers.

Command Words:

Analyse - Take apart an idea, concept or statement and criticise it.

Assess - Come to a conclusion about the overall value or significance of something; discuss its positive and negative aspects to show balance.

Compare - Identify similarities and differences.

Define - State the meaning of an idea or concept.

Describe - Set out the main characteristics of something; DON'T EXPLAIN.

Discuss -Set out both sides of an argument (for and against) and come to a conclusion; there should be some evidence of balance.

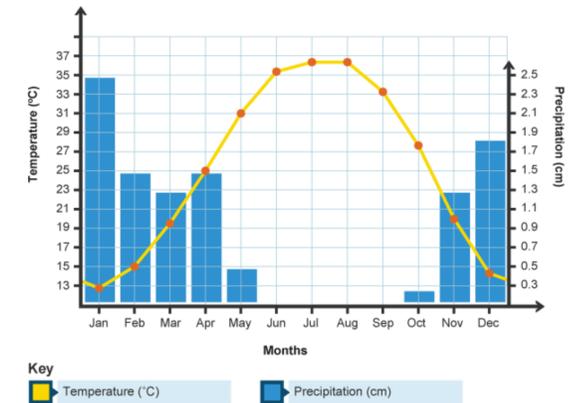
Evaluate - Make a judgement about the effectiveness of something; discuss its strengths **and** weaknesses and come to a conclusion about its overall success or importance.

Explain - Give reasons why something happens.

Give - Produce an answer from recall.

Justify - Support an idea or argument with evidence; for the outcome chosen, the positives must outweigh the negatives.

State = name



16. What ecosystem does the climate graph above belong to?
17. Describe a food web from a producer to a secondary consumer
18. Evaluate human impact in cold environments
19. Justify deforestation
20. Evaluate humans using the coral reef