



How to read a map to give 4 figure grid references!

Always use the **bottom left hand corner** of the square of which you are looking at.

Then, using the numbers around the map - **go along the corridor and up the stairs**.

Example from the map - the PH symbol can be found in grid square 0841.

To give a 6 figure grid reference!

You may find it easier to find the 4 figure first!

Example from the map - the PH symbol can be found in grid square 0841.

Leave a space after the first two numbers 08... and a space after the last two numbers 41...

Then, estimate how far along in the 08 square it would take to level with the PH = just less than halfway along so approximately 4 - which gives 084

Then, estimate how far up the square of 41 it would take to get level with PH = almost at the top so approximately 9 - which gives 419. The full answer would be 084419.



The Living World

Factors affecting climate

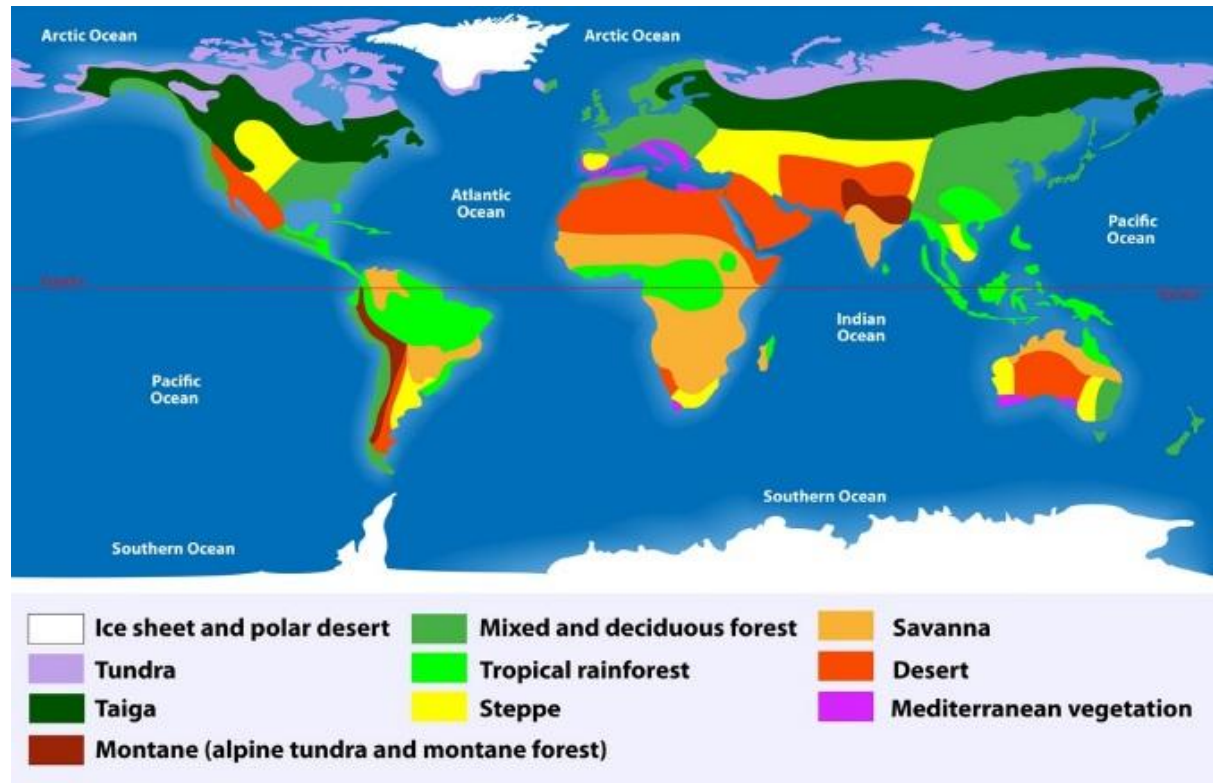
Latitude - places closer to the equator are hotter due to the sun's rays being more intense. Places further away from the equator are colder as the sun's rays are less concentrated.

Altitude - areas high above sea level are colder (usually the temperature drops 1°C every 100m)

Distance from the sea - places by the coast usually have milder winters and summers. Places inland can have very hot summers but very cold winters.

Prevailing wind - the UK generally gets wind from the South West, this can bring rain. If the prevailing wind comes from the North it can bring cold weather.

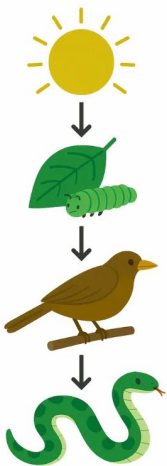
Distribution of Biomes



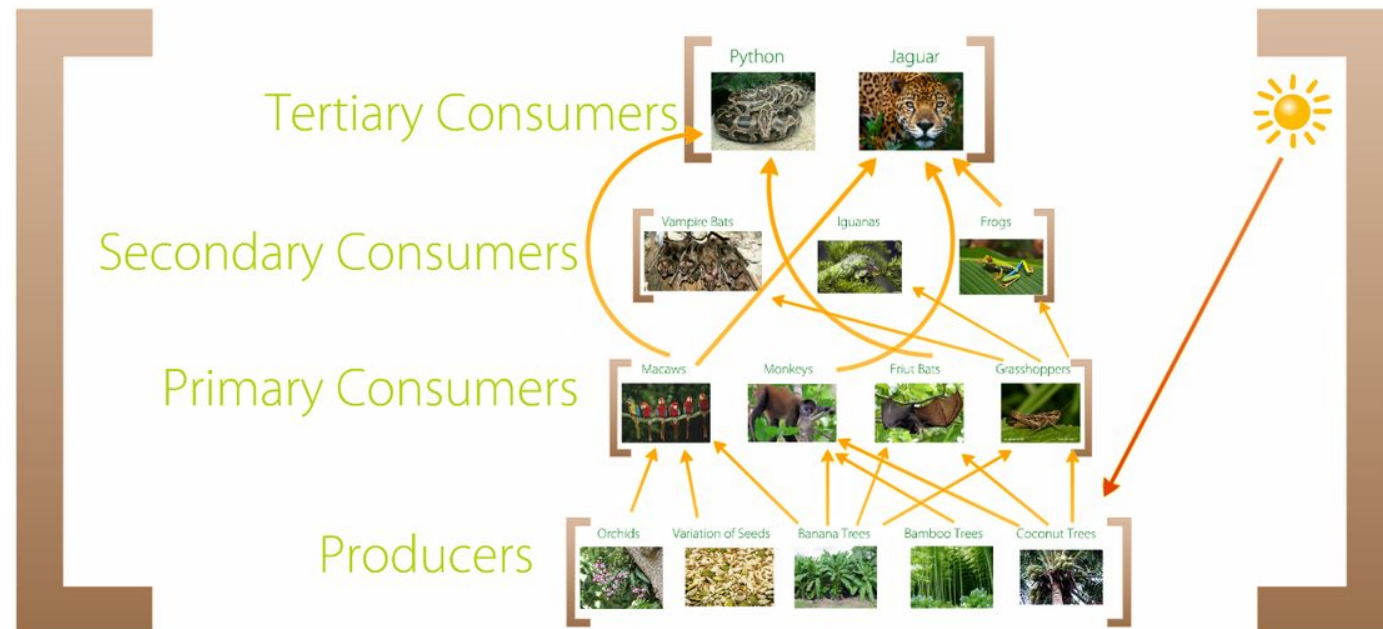
Keyword	Definition
Ecosystem	A natural system made up of living and non-living components
Biotic	The living organisms in an ecosystem
Abiotic	The non-living components of an ecosystem
Food chain	A simple sequence showing how energy and nutrients are transferred from one living thing to another as it eats and is eaten.
Food web	A more complex diagram showing multiple links between different food chains in an ecosystem.
Nutrient cycle	When dead animals or plants die they decompose and their nutrients return back to the soil to be used by other plants.

The Rainforest Food Chain

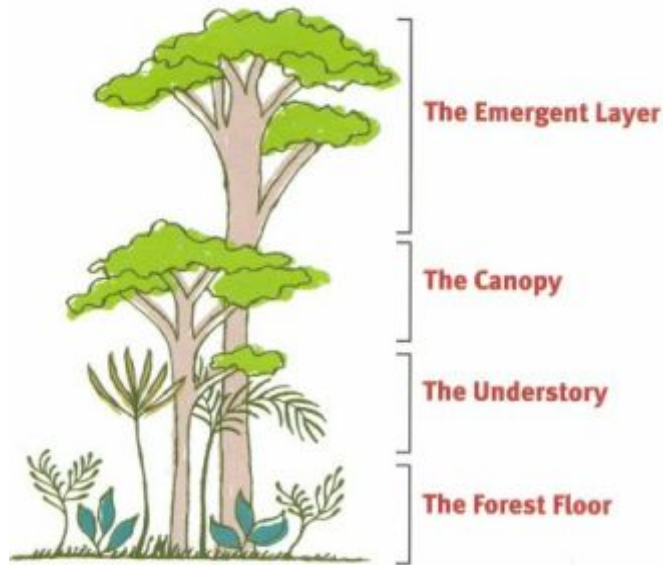
From the leaf capturing sunlight to the caterpillar that devours it, then the bird that preys on the caterpillar, and finally the snake feeding on the bird, each step transfers the sun's original energy along the food chain.



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Tropical Rainforest – Vegetation layers



EMERGENTS: Only a few very tall trees break through the canopy into the emergent layer. These trees can be as tall as skyscrapers. It houses many birds and insects.

CANOPY: The upper parts of the trees. This leafy environment is full of life in a tropical rainforest. The trees in this layer may be as high as 30m. They form a green roof over the forest below.

UNDERSTORY/ UNDER CANOPY: A dark, cool environment under the leaves but over the ground. Up to 20m.

FOREST FLOOR: Many insects and the largest animals live here. It is not crowded with plants as little sun reaches the forest floor. Fallen leaves, dead plants and animals will decay (rot) very quickly.

Tropical Rainforest – Vegetation adaptation

Drip tips - These leaves are pointed at the tip to allow any water to roll off the end and onto the forest floor. They have a waxy coating which helps to channel the water off the leaf so that it doesn't get damaged by the weight of the water.



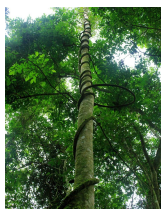
Buttress roots - The higher they grow, the more unbalanced the tree can be. Buttress roots are roots that grow out above ground to provide stabilisation so the tree can grow taller to reach the sunlight.



Fan palm leaves - These are large, fan shaped leaves that are good for catching sunlight and water. As the leaves are segmented, excess water can drain through meaning the leaf does not get damaged and snap.



Lianas - Some trees are unable to reach sunlight on their own. Lianas can climb up other taller trees in order to reach the sun. They start their life in the dark forest floor but attach themselves to taller trees and wind themselves up the trunks towards the sunlight.



Epiphytes - A parasite is something that grows on another living organism. Epiphytes settle and grow on the surface of larger trees and dangle their roots down to suck water from the moist air in order to survive.

Tropical Rainforest - Animals

The poison dart excretes poison through its skin, and its bright colour warns potential predators against eating it. Some of the frogs in this family are not poisonous. However, they have adapted to their environment by copying the appearance of the toxic types.



The jaguar's fur keeps it camouflaged in the tropical rainforest. Jaguars are also powerful, giving them the strength to move slowly and silently through the forest when stalking prey. In addition, the jaguar can move extremely fast, which makes it an effective hunter.

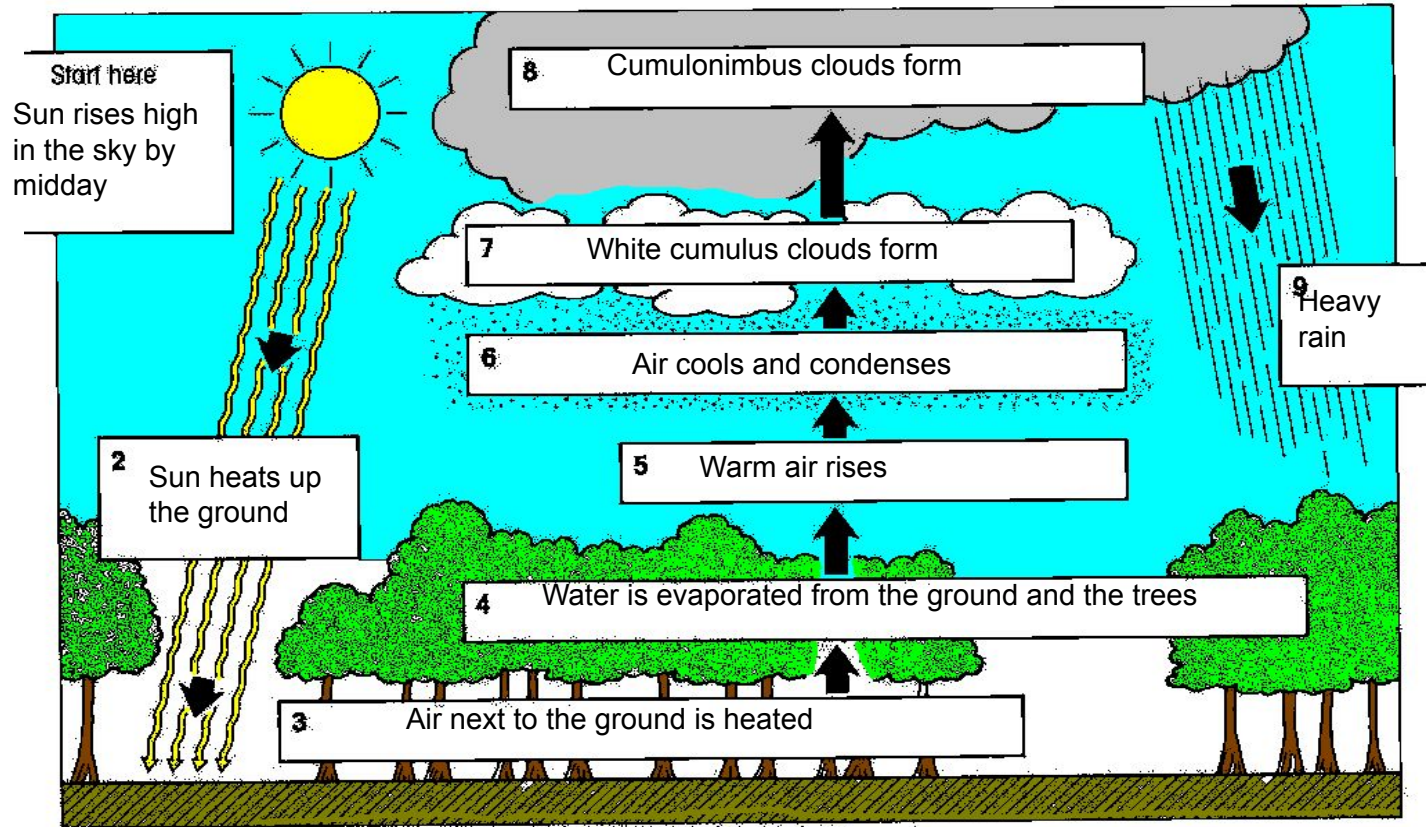


Sloths are nocturnal, which enables them to avoid predators by sleeping during the day. Sloths are built for life in the trees because their arms are longer than their legs and their feet are curved, which helps them grasp branches. Some sloths have grey-brown fur. These tones match tree trunks and branches, providing camouflage.



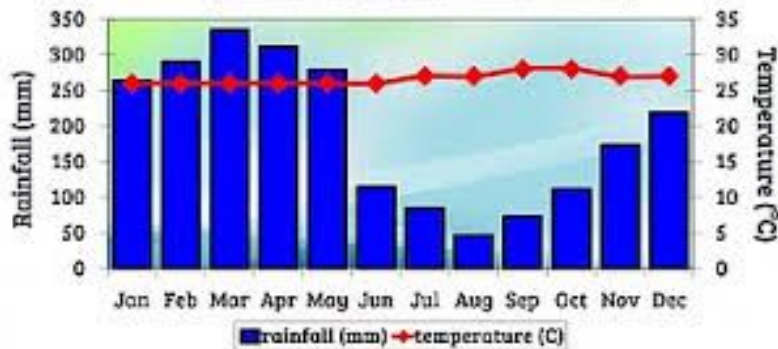
The main physical adaptation of the spider monkey is its prehensile tail. The prehensile tail allows the spider monkey to be able to grasp the branches of trees. This gives it suppleness and strength. The monkey can hang by its tail, swing by it, pick fruit, and even throw things with it.

Convictional rainfall



Rainforest Climate

Climate Graph for Manaus, Brazil



Temperatures are high all year (around 28°C).
Rainfall is around 250mm per month.

Deforestation - The causes

<u>Mining</u>	The main type of mining in the Amazon is for gold. However, other minerals are also extracted including iron ore and oil. Mining causes devastation to the environment as trees are felled, and the topsoil is completely removed to access the minerals underground.
<u>Population pressure</u>	People migrate to the rainforest to get a job. As these people need homes and services further deforestation occurs.
<u>Energy</u>	The supply of water has led to the development of hydroelectric power stations (HEP Stations). Constructing dams and reservoirs involves flooding huge areas of rainforest but in turn provides energy needed for the country to develop
<u>Logging</u>	Logging involves the cutting down of trees and this can be done both legally and illegally. Logging companies are mainly interested in high-value timber such as mahogany (used in production of furniture), which is exported (sold) to companies in other countries to then increase profit.
<u>Roads</u>	Roads are required to access the Amazon rainforest and bring in heavy transport, machinery and send goods to market. Roads also benefit the locals and the tourist industry by increasing access which is necessary for development.
<u>Farming</u>	The growing of cattle and crops can lead to huge amounts of destruction in the rainforest. The land can only grow crops for a certain amount of time before the soil loses fertility and the farms have to move onto another area.

The impacts

Economic benefits	Environmental negatives
Jobs / Money/ income for the country	Loss of biodiversity / impact on climate change / flooding/ water pollution / extinction / soil erosion



Rainforest tribes

Homes	Hunting	Sustainable?	Threats
Built of supplies found in the rainforest. Sleep in hammocks. Very little privacy.	Men usually go hunting but women can also help to flush out the prey. Men use knives and guns to catch the animal. All of the animal is used in the cooking.	They use one leaf from each tree when making their homes so that the trees do not die out. Shifting cultivation – they rotate their farm to let the area re-grow.	Deforestation from logging companies. Outsiders also bring diseases that could wipe out the tribe.

