**Describe and explain the main characteristics of one biome that you have studied**

A biome is a large area with similarly climate, soil, vegetation and animals. The biome that I have studied is the Tropical Rainforest biome, this is located on the equator and examples of this tropical rainforest can be found in the Amazon in South America and the Congo in Africa.

**Climate** This biome has a climate that is hot and humid all year, with humidity reaching 88%. Being at the equator it has a low pressure system that can bring wet, cloudy and windy weather. Because of its low latitude (20 degrees N & S of the equator) its average temperature is 27 Celsius all year round with a very low temperature range. Here the sun’s rays are directly overhead for 12 hours a day causing intense heating of the surface and high levels of evapouration. In turn this evapouration causes heavy convectional rain to fall, with annual rainfalls up from 2000mm to 6,500mm per year. Heat also causes transpiration with a lot of the clouds formed in rainforests being generated by trees themselves. It is estimated that trees lose 750L of water each year by transpiration. Although there are no seasons in the biome the areas that receive the highest temperature and rain change resulting in a slight drying and cooling in June and December at the edge of the rainforest biome. This climate allows a large range of vegetation to grow which supports a huge biodiversity.

**Vegetation**

There is a wide variety of plants in the rainforest. There are four distinct layers to these plants

1-The forest floor. This is the lowest 2metres of the rainforest. Only 2% of sunlight reaches this ground. As a result few plants grow here unless a tree falls, creating a clearing where sunlight encourages rapid growth of vegetation. Macaron plants for example grow very quickly and have large leafs to capture the sun.

2- The understorey. This reaches from 2 to 20 metres above the floor. Though this area is shaded it does receive some sunlight and non-flowering shrubs, ferns and trees have large leaves to trap the sunlight.

3- The canopy layer. This extends from 20 to 40 metres and is full of life. Mammals such as spide monkeys are found here as well as snakes and birds such as parrots. Vines grow on the trees and other tree-living plants called epiphytes (mosses and orchids) also grow here.

4- The emergent layer. This is the highest layer will talls trees like the mahogany rising to 70 metres. These trees have smaller leaves as the higher and receive more sunlight. The tree roots are shallow but the bases grow very wide (up to nine metres) to provide support. These trees are normally smooth with few branches like the Mahogany.

**Soil** This biome consists of **latosal** soil and is red/orange/yellow. This colour is due to **laterisation** (the intense chemical weathering and leaching that occurs, washing all soluble minerals out of the soil leaving insoluble iron aluminium). Latosals have a low humus content due to the rapid decomposition of dead organic matter which is quickly absorbed by plant roots or washed from the soil by heavy rain. Little humus gets deeper than the O horizon.

Plants here have adapted to grow quickly, otherwise they would not get sufficient light or nutrients. Fast growing plants rapidly use the humus so it does not get a chance to leach into the ground. The short nutrient cycle give the impression that the latosal is very fertile, but in fact once the forest is removed, the latosol has very little fertility and crops fail after two or three years. Exposed latosols are baked into a hard brick-like laterite soil which is impossible to cultivate

**Plants and Animals** One hectare of rainforest may contain 42,000 species all living on different layers of the forest. The variety of life differs between the Asia, Africa and South American rainforest. The orang-utan is found only in Asia while the gorilla only is Africa. Many plants and animals have adapted to the rainforest by using camouflage to hide from predators, such as stick insects. The brazilian tree sloth has fur covered in moss and algae to hide when they hang from the canopy.

Some animals and plants live in association with each other- they depend on each other for food and reproduction. A good example of this is the Swordbill Hummingbird which feeds from the Datura flowers. Its bill cannot reach nectar from any other plant. In turn the bird passes pollen from one Datura plant to another ensuring its reproduction. Other plants like the stick insect, tree frog and sloth have adapted to the rainforest by blending into the environment and camouflaging themselves against the natural vegetation