



Holly Park Learning Organiser

Year 6 - Geography (3)



Sustainability: Does the rainforest need four layers?

Prior Knowledge:

Animals and plants living around the world are unique because of the climate, land type, soil, rainfall and vegetation.

Biomes have unique characteristics from each other.

An Environmental Region is an area that has a particular type of natural environment and physical features.

Water travels through five different stages as part of the Water Cycle. The water goes round and round. No extra water is ever made.

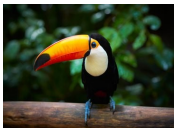
Climate zones describe the temperature and rainfall of an area

Contour lines show us the height of the land on a map

There are different types of mountains and they are formed in different ways

National Curriculum - Learning Objectives

- Identify the position and significance of latitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Greenwich/prime Meridian and Time Zones (including day and night)
- To describe aspects of climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes and the water cycle.
- To describe and understand key aspects of the distribution of natural resources including energy, food, minerals and water
- Use maps, atlases, globes and digital/computer mapping to locate countries and describe the features studied.
- Use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of OS maps) to build their knowledge of the UK and the wider world.
- Locate the world's countries, using maps to focus on South America, concentrating on their environmental regions, key physical and human characteristics and major cities.
- Use fieldwork to observe, measure, record and present the physical features in the local area using a range of methods including sketch maps, plans, graphs and digital technologies.
- Understand similarities and differences through the study of the UK and a region of South America.



General Overview of This Unit:

The four layers of the rainforest are interconnected and dependent on each other.

Place: Amazon Rainforest Brazil

Focus: Rainforest Biome and Sustainability

Key Vocabulary

quadrat	A plot of land marked off for study
erosion	Where the earth is worn away by water, wind, ice or eg by walking on it
deforestation	Destruction or removal of forests and their undergrowth
impact	To have an effect on something
canopy	One of the top layers of a forest, formed by thick leaves of tall trees
understory	Between the canopy and the forest floor
emergent	Upper most layer of the forest where sunlight is plentiful

New Learning in this Unit:

- Taking samples of a small area gives an idea of what a bigger area is like
- Geographical features can be measured in different ways
- The rainforest can be compared to other forests
- Humans have an impact on natural environments, sometimes this is negative
- The rainforests are an important biome for the whole world as they regulate the water cycle and clean the air.
- Each layer is dependent on the other.

Essential Knowledge to Progress:

- We can find out about the world by collecting our own data
- The rainforest biome is crucial
- Humans have an impact based on their behaviour

Enquiry Skills - Disciplinary Knowledge

- Suggest questions for investigating
- Use primary and secondary sources of evidence in their investigations.
- Investigate places with more emphasis on the larger scale; contrasting and distant places
- Analyse evidence and draw conclusions e.g. from field work data on land use comparing land use/temperature, look at patterns and explain reasons behind it

Adaptations:

<https://youtube.com/watch?v=ZKSx-6MSWIs>

Listen to the sounds of the Amazon Rainforest. What can you hear? What would you see if you went to the rainforest?



What lives in the Rainforest - Flora

Trees in the rainforest grow very tall because they have to compete with other plants for sunlight. Kapok trees can grow to 61 metres tall! The tallest trees spread their branches and leaves, blocking the light from the trees below, creating a canopy.

Many kinds of plants grow - 'lianas' are thick, woody vines that grow up trees. When they get to the top, they spread and create a network. Orchids, bamboo and bromeliads also grow.

What are the physical features?

Rainforests are lush, warm, wet habitats.

The rainforest has four layers

The emergent layer - the tallest trees that rise higher than the rest of the forest

The canopy - the leaves and branches touch one another

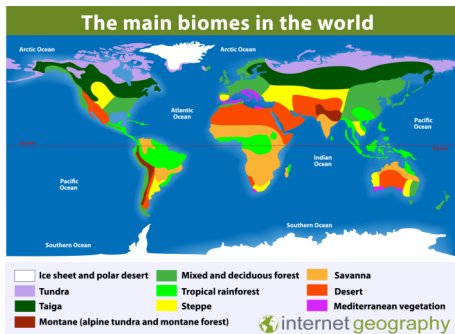
The understory - small trees and plants that do not need much light

The forest floor - very dark, very few plants grow, mainly leaf litter

Trees and plants release water into the atmosphere, the water then falls back to Earth as rain. The water from the trees creates a thick cloud over the rainforest so it is always hot and humid.

The land is mostly 700m below sea level

The Imeri Mountain Range can be found within the Amazon Rainforest



Where?

The Amazon Rainforest is in Brazil, + several other South American countries such as Ecuador and Bolivia

The Amazon Rainforest is on the equator .

All rainforests are located between the Tropic of Cancer and the Tropic of Capricorn
It is in a rainforest biome - as it is hot and moist throughout the year.

Other tropical rainforests can be found in Africa and Asia



What lives in the Rainforest? - Fauna

More than half of the world's animals live in the rainforest. Vampire bats and anacondas live in the Amazon rainforest. Lots of other animal such as dragonflies, tree frogs and at least 100 species of ant. Many haven't even been discovered yet!

What are the Human Features

There are many tribes of people who have lived in the rainforest for thousands of years.

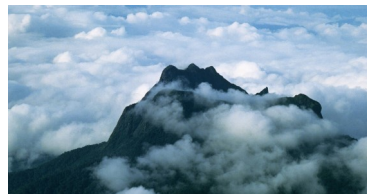
Humans need access to resources, both into and out from the rainforest so have built roads and railway lines

Climate and Weather

The Amazon Rainforest is on the equator. It receives an average of 1.2-6.3 metres of rain each year.

It is warm all year round, rarely getting above 34°C (94 °F) or getting below 20 °C (68 °F)

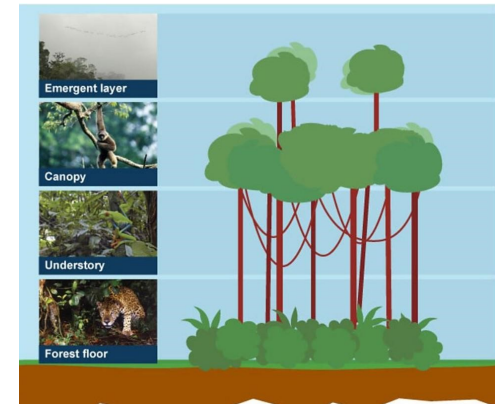
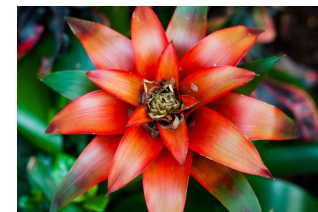
It is in the 'humid tropical' climate zone.



Deforestation

Rainforests are being cut down too quickly. Millions of poor, hungry people live near the rainforests. They think they can have a better life by burning the rainforest for make space for farming.

The soil is so poor, nothing will grow , not even food for cattle. The land is then useless and the forest is gone.



Emergent Layer

Tall trees

Slender branches

Big leaves - to capture the sun

Strong winds carry seeds

Home to light animals or those that can fly

Canopy Layer

Thick vegetation (6m)

Forms a roof over lower layers

Blocks the wind, rain and sun from below

Lots of fruit

Lots of animals eat fruit and drop seeds

Thousands of insects

Understory Layer

Dark and humid

Bright flowers to attract insects

Large leaves

Good for camouflage

Forest Floor Layer

No plants

Dead leaves

Some rainforests have rivers running through them

Session	1	2	3	4	5	6
Enquiry Question	Where are the world's rainforests?	What are the main features of the rainforest?	How are the layers of the rainforest dependent on each other?	Does a temperate forest have four layers?	What is happening in the Amazon Rainforest?	Does the Amazon Rainforest need four layers?
Main Teaching Point	The rainforest biomes are in the tropics, near to the equator. They are in tropic climate zones. Explore maps to find the rainforests of the world.. Use different overlays eg temperature, population, biome etc to find facts.	The rainforest has four distinct layers , each with unique features.	What would happen if one of the layers was taken away? Children to consider the consequences on animals, plants, the conditions etc.	Plan a Field Trip to Trent Park to explore the woodland and see if there is evidence of four layers of a forest? What will you collect? How will you record? What equipment will you need?	What reasons do people have for chopping down sections of the Rainforest? What are the trade benefits of chopping down the Rainforests? How have the Rainforests changed? Hwy is this? What does the land look like afterwards?	Consider the different elements learnt previously: Biomes Climate Zones The Water Cycle Settlements Climate Change Natural Finite Resources

Map Skills

- Use 8 compass points confidently and accurately;
- Use 4 figure co-ordinates confidently to locate features on a map.
- Begin to use 6 figure grid refs; use latitude and longitude on atlas maps
- Draw a variety of thematic maps based on their own data.
- Begin to draw plans of increasing complexity
- Use/recognise OS map symbols;
- Use atlas symbols
- Describe features shown on OS map.
- Locate places on a world map.
- Use atlases confidently to find out about other features of places. (e.g. mountain regions, weather patterns)
- Draw a plan view map accurately
- Confidently identify significant places and environments
- Recognise world map as a flattened globe

Style of Map

- aerial photos
- terrain-level view on Google Maps – compare and contrast
- globe
- map of the world
- Ordnance Survey Map – standard symbols – describe features
- world map showing biomes
- sketch maps with symbols and a key
- maps with letter/number co-ordinates
- Junior Atlas with atlas symbols
- world map showing lines of latitude
- Maps with 8 compass points

Future Learning from this Unit:

- Understand how human and physical processes interact to influence and change landscapes, environments and the climate; and how human activity relies on effective functioning of natural systems (KS3)

Fieldwork - Trent Park

How are humans having an impact on our local forest?

Quadrat Sampling:

Count flora

Count fauna

Vegetation type - height, cover, girth of trees etc

Erosion

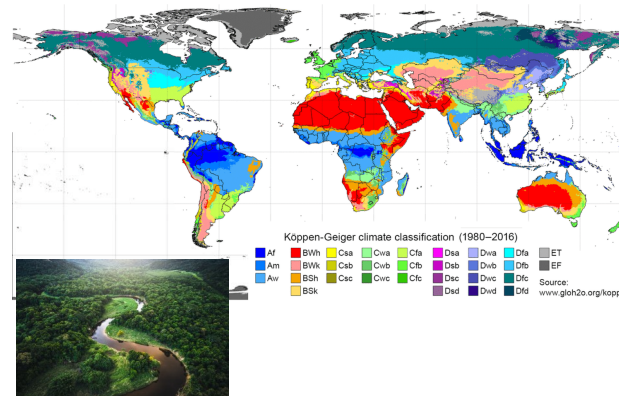
Litter

Mapping of the area

Collecting data - tally charts, tables, graphs

Comparing data with other area

Analysing data and concluding



Y5/Y6 Assessment Benchmarking:

- Children have a more detailed and extensive framework of knowledge of the world, including globally significant physical and human features and places in the news
- Children understand in some detail what a number of places are like, how and why they are similar and different and how and why they are changing. They know about some spatial patterns in physical and human geography, the conditions which influence those patterns and the processes which lead to change. They show some understanding of the links between places, people and environment
- Children are able to carry out investigations using a range of geographical questions, skills and sources of information, including a variety of maps, graphs and images. They can express and explain their opinions and recognise why others may have different points of view

Suggested End of Unit Task:

Children present their findings in their own way.