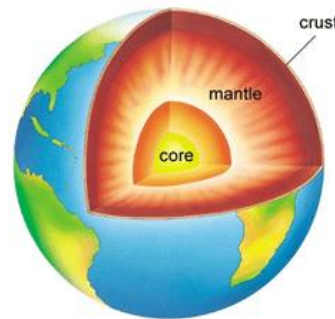


Year 4 Unit 3: Amazon – Rivers and Rainforests, Teacher Subject Knowledge Guide

How did continents come to be?

Three Layers

The Earth formed 4.6 billion years ago from a great, swirling cloud of dust and gas. The continuous smashing of space debris and the pull of gravity made the inside of Earth heat up. As the heat increased, some of Earth's rocky materials melted and rose to the surface, where they cooled and formed a crust. Heavier material sank toward Earth's centre. Eventually, the earth came to have three main layers: the **core**, the **mantle**, and the **crust**.

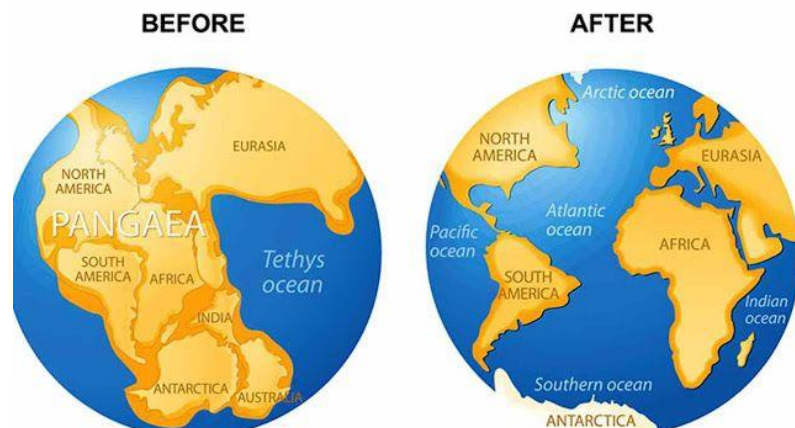


Tectonic Plates

The crust and the top portion of the mantle formed a rigid shell around the earth that is broken up into huge sections called **tectonic plates**. The heat from inside the earth causes the plates to slide around on the molten mantle. Today, tectonic plates continue to slowly slide around the surface, just as they have been doing for hundreds of millions of years. Geologists believe the interaction of the plates, a process called plate tectonics, contributed to the creation of continents.

Pangaea

The continents have not always been where they are today. About 480 million years ago, most continents were scattered chunks of land lying along or south of the Equator. Millions of years of continuous tectonic activity changed their positions, and by 240 million years ago, almost all of the world's land was joined in a single, huge continent. Geologists call this supercontinent Pangaea, which means "all lands" in Greek. By about 200 million years ago, the forces that helped form Pangaea caused the supercontinent to begin to break apart. The pieces of Pangaea that began to move apart were the beginnings of the continents that we know today. Gradually, the different landmasses moved to their present locations.



South America: Country or Territory?

Different websites credit a different number of countries to the continent of South America. The mainland of South America is divided into 12 different countries and one territory – so 13 in total. A territory is a piece of land, or a country that is ruled by another country. French Guiana is in South America but is actually ruled by France.

In addition to the countries on the mainland, the continent of South America contains the Falkland Islands. These islands are also a territory within South America and are ruled by the United Kingdom.



Which towns and cities are in the Amazon Rainforest?

There are several towns and cities within the Amazon Rainforest and some of those cities are quite large. The largest city is Manaus. It is a city of 2 million in total and is surrounded by the rainforest. It is home to the National Institute of Amazonian Research – the most important centre for scientific studies in the Amazon region and for international sustainability issues. The city is also known as the 'Heart of the Amazon' and the 'City of the Forest'. Despite being located in the Amazon Rainforest, Manaus is densely developed and populated. There are very few green areas in the city.

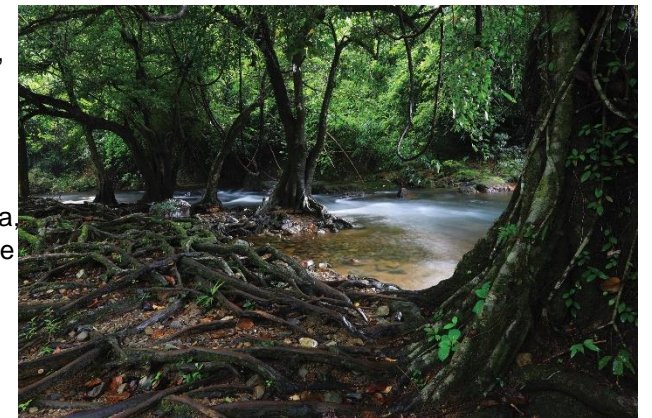


Iquitos is the largest city in the Peruvian section of the Amazon – it is known as the 'capital of the Peruvian Amazon'. The city is surrounded by water on one side and thick rainforest on the rest. You can only reach the city by flying or by boat. If you try and reach Iquitos by boat, it takes a week to travel there along the river. It is the largest it in the world that is inaccessible by road. Other large cities are Santarem and Belem in Brazil, Puerto Maldonado in Peru and Leticia in Columbia.

Are there other types of rainforest?

A rainforest is an area of tall, mostly evergreen trees and a high amount of rainfall. They thrive on every single continent except Antarctica and fall into two separate groups. Rainforests can be tropical or temperate.

Tropical rainforests are found along the equator, in Central and South America, western and central Africa, western India, Southeast Asia, the island of New Guinea, and Australia. Temperate rainforests, on the other hand are located in the mid-latitudes where the temperatures are much milder. They can be found on the coasts of the Pacific Northwest in North America, Chile, the United Kingdom, Norway, Japan, New Zealand, and southern Australia.

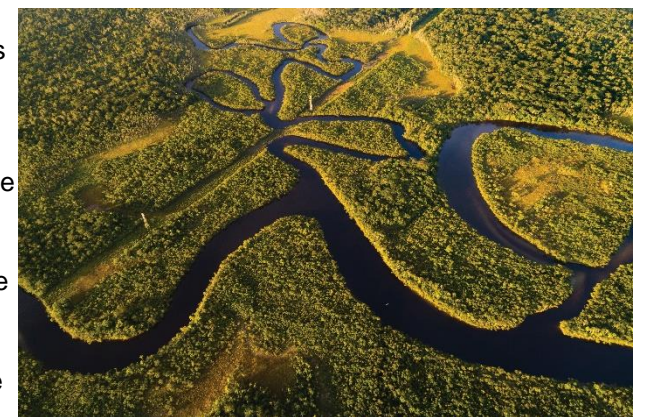


As their name implies, temperate rainforests are much cooler than tropical rainforests. They are also much less sunny and receive much less rainfall. The rainfall in these forests is produced by warm, moist air coming in from the coast and being trapped by nearby mountains. The animals of the temperate rainforest are large mammals and small birds, insects, and reptiles. These species vary widely between rainforests in different world regions.

Why do rivers meander?

Virtually every river in the world meanders and some more dramatically than others. The reason for the meander in a river is the erosion and deposition caused by flowing water.

As the water flows, the force of the water erodes and undercuts the riverbank on the outside of the bend where water flow has most energy due to decreased friction. At the same time, on the inside of the bend, where the water flow is slower, that silt (or sediment) is deposited because there is more friction.



Over time the horseshoe becomes tighter, until the ends become very close together. As the river breaks through, e.g. during a flood when the river has a higher discharge and more energy, and the ends join, the loop is cut-off from the main channel. The cut-off loop is called an oxbow lake.

