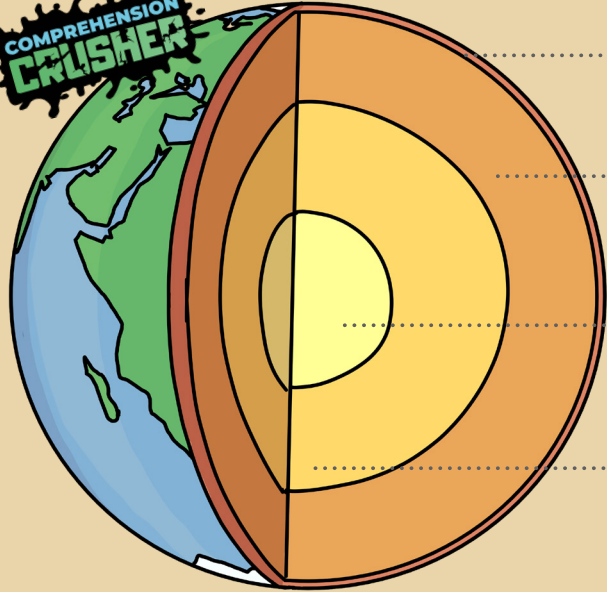


PLATE TECTONICS

COMPREHENSION
CRUSHER



CRUST

5 to 25 miles
(8 to 40 kilometres)

MANTLE

1,800 miles
(2,900 kilometres)

INNER CORE

800 miles
(1,300 kilometres)

OUTER CORE

400 miles
(2,250 kilometres)

There are four layers of our planet's centre called the crust, mantle, outer core and inner core. We will be looking at the lithosphere, which is the crust and the top part of the mantle.

Although it might feel like we live on solid ground, planet Earth's crust is like a spherical jigsaw puzzle! The individual pieces that fit together are called tectonic plates and they sit on top of the mantle. Even though it has the properties of a solid, the mantle flows like a liquid. Because of this, the tectonic plates move! This can cause many interesting things to happen. What happens in the mantle is very important to scientists who study earthquakes and volcanoes. Read on to learn more!

TECTONIC THEORY

Plate tectonics can actually help us to understand the history of our planet. Alfred Wegner studied the particular shapes of the continents and he found that they looked like they once fitted together. Have a look for yourself on the illustration below.

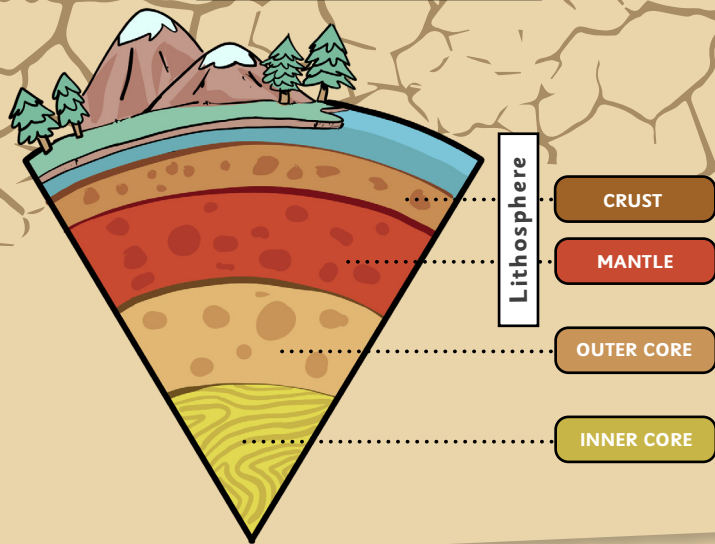
If the shapes are arranged together, it is possible to imagine them as a single landmass that later broke apart. Evidence of the same ancient land animals has

been found across these boundaries. As these animals couldn't swim across the sea, it is believed that they walked. This strengthened the idea that the pieces of land were once connected.

Described as a supercontinent, this single landmass was named Pangea. During the age of the dinosaurs, Pangea slowly broke apart and the plates were carried to their new positions on top of the mantle.



Non-chronological report



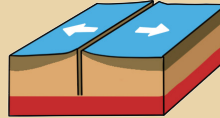
HOW DO THEY MOVE?

Sometimes, extreme heat from beneath the Earth or moving ocean water puts pressure on the tectonic plates and they move! Usually, they move between 1 and 10 cm per year.

Type
of plate
boundary:

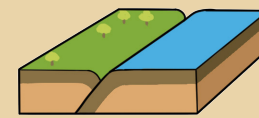
Outcome:

DIVERGENT



Heat from below pushes upwards and forces the plates apart. This might create a valley (gap) in the land, or molten rock called magma might escape and erupt through it! When the magma cools, it creates mountains, volcanoes or even islands.

CONVERGENT

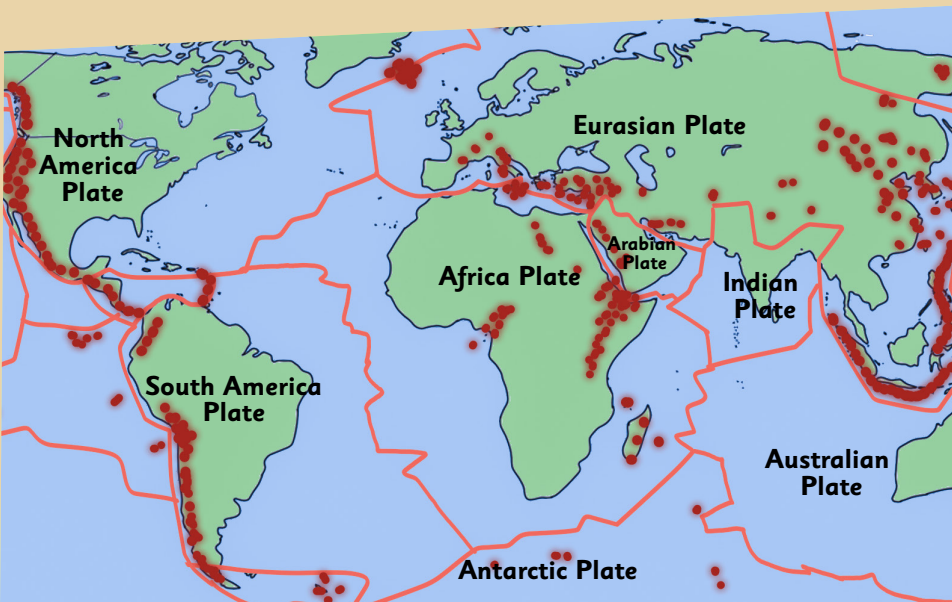


If tectonic plates crash into one another, two things could happen. Firstly, the two edges may pile up and form a mountain. Secondly, they could overlap, so the heavier plate might be forced to slide under the other. This pushes down the liquid magma causing it to spill out through new or existing volcanoes.

TRANSFORM



Plates travelling in different directions might rub against each other. The stress this creates doesn't cause major damage to the crust or form mountains. However, it does create faults in the land where earthquakes often occur!



EXTREME REACTIONS!

The world map above shows Earth's tectonic plates and where they meet one another. The red spots mark the world's volcanoes. There is strong relationship between the two. Plate tectonics are responsible for some earth-shuddering and explosive natural disasters!