KS3 Geography: Explain this...

Plate tectonics

Earth is divided into four layers: the inner core, the outer core, the mantle and the crust.

The solid inner core is made of iron and nickel and is as hot as the surface of the sun. The outer core is also made of iron and nickel but in liquid form. It's also extremely hot. The mantle is made up of magma, or molten rock. And the crust is this layer of solid rock that we live on. It's very thin. If Earth was the size of an egg, the Earth's crust would be as thin as the eggshell. And, like an eggshell, the crust has cracked and split into many different pieces called *tectonic plates*.

These plates can be oceanic, meaning they're found mainly under the ocean, or continental, and mainly found under land. And they are moved around, constantly fuelled by energy from the very hot mantle below.

Where the movement of currents and the mantle converge, like this, plates are pushed together. This is called a *destructive* or *convergent* plate boundary. When the plates collide, the denser plate, usually the oceanic one, is forced underneath the continental plate. The force of this collision is so great that mountains are created.

Earthquakes are very common at this type of boundary as the mountains are pushed upwards by the force of the plates' movement. Tall, steep volcanoes can also form as a result of the denser rock melting and the magma being forced up to the surface.

South America has a great example of a convergent plate boundary. As the Nazca Plate collides with the South American Plate, it's forced underneath it creating the ever-changing Andes Mountains.

Where the movements of the currents in the mantle separate, like this, plates move apart. This is called a *constructive* or *divergent* plate boundary. These are usually found under oceans. As the plate moves apart, magma rises to the surface and cools, forming shallow-sided volcanoes.

The Mid-Atlantic Ridge on the floor of the Atlantic Ocean, where the Eurasian and North American Plates are moving apart, is the perfect example of this.

Plates can also move past each other, like at the San Andreas Fault in the USA, which forms the tectonic boundary between the Pacific Plate and the North American Plate. These are known as *transform faults*. As the plates scrape past each other, pressure builds up and is released suddenly, causing an earthquake.

The plates of the Earth's crust are constantly moving at about the same speed as your fingernails grow, so the map of the world will continue to change, but just very, very, very slowly.