

Connected Learning Team Primary

Year 6

Science Package

**Tectonic Plates
Earthquakes**

2 weeks

EARTH AND SPACE

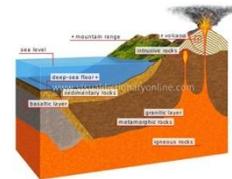
Lesson 1

We are **learning** to (WALT):

Identify what the Tectonic plates and the Ring of Fire are.

I am **successful** when (WILF):

I can **demonstrate** my understanding and knowledge by recording and illustrating.



Tectonic plates

Earth is constantly moving. However, as it only moves between one to six inches per year, it takes millions of years for the land to move a significant amount.

The part of the land that is moving is the Earth's surface called the Lithosphere. The Lithosphere is made up of the Earth's crust and a part of the upper mantle. The Lithosphere moves in big chunks of land called Tectonic plates. Some of these plates are huge and cover entire continents.

Most of the Earth is covered by seven major plates and another eight or so minor plates. The seven major plates include the African, Antarctic, Eurasian, North American, South American, India-Australian, and the Pacific plates. Some of the minor plates include the Arabian, Caribbean, Nazca, and Scotia plates.

Tectonic plates - Ring of Fire

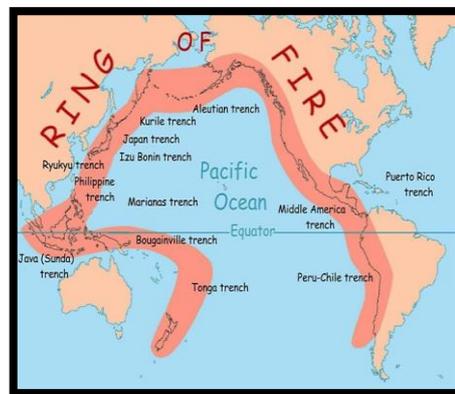
Earth's outer layer is about 35 km deep and made up plates, called Tectonic plates that fit together like an irregular jigsaw puzzle. All of Earth's land and water sit on these **plates**. The **plates** are made of solid rock. Under the **plates** is a weaker layer of partially melted rock. The plates are like giant rafts that slowly move around due to the heat below them in the mantle. The plates can; **slide next to, collide with** or **be forced under each other**. The joins between the plates are called 'Fault lines'



Ring of Fire

The Ring of Fire is a 40,000 km horseshoe-shaped area of intense volcanic and seismic, earthquake activity that follows the edges of the Pacific Ocean.

It stretches from New Zealand, along the Eastern edge of Asia, through Japan and along the coasts of Northern and Southern America.



****Roughly 90% of all earthquakes occur along the Ring of Fire, and the ring is dotted with 75% of all active volcanoes on Earth****

Earth - Tectonic plates - Ring of Fire

Using the information from the text:

- a)** Write a short summary of what you have learned.
- b)** Write dot points relating to what you have learned.
- c)** Draw labelled drawings describing what you have learned.

Earth

Tectonic plates

Ring of fire

Reflection: What level of effort would you give yourself in achieving the WALT and WILF for this task and why? _____

EARTH AND SPACE

Lesson 2

We are **learning** to (WALT):

Identify Earthquakes as a Natural Disaster and the cause for occurrence.

I am **successful** when (WILF):

I can **demonstrate** my understanding of how Earthquakes occur using household materials.



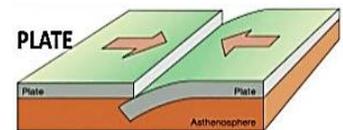
Earthquakes

Earthquakes are the shaking, rolling or sudden shock of the earth's surface. They are the Earth's natural means of releasing stress. More than a million earthquakes rattle the world each year. Earthquakes can be felt over large areas although they usually last less than one minute. Earthquakes cannot be predicted - although scientists are working on it! They are classified as Natural Disasters.

There are about 20 plates along the surface of the earth that move continuously and slowly past each other. When the plates squeeze or stretch, huge rocks form at their edges and the rocks shift with great force, causing an earthquake.

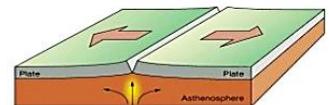
Convergent

Convergent plate movement is when the pressure build up causes the two plates to push together.



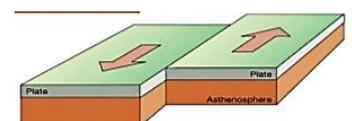
Divergent

Divergent plate movement is caused by the pressure building up in the middle of the Earth pushing the two plates apart.



Transform

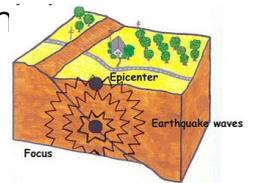
Transform plate movement happens when plates move past each other in opposite directions or



move in the same direction but at different speeds. The plates are pushed together so strongly that a lot of pressure builds up. When this pressure is released an earthquake happens.

Epicentre

The shock waves from an earthquake are the strongest at the epicentre, the land directly above the plate movement. This is where the most destructive force occurs with the waves weakening as they move away from the epicentre.



For weeks after a major earthquake, aftershocks of less intensity may be felt. These can cause further damage to buildings and services already damaged by the original earthquake.

After reading the above text, can you write the definitions which explain clearly the following terms?

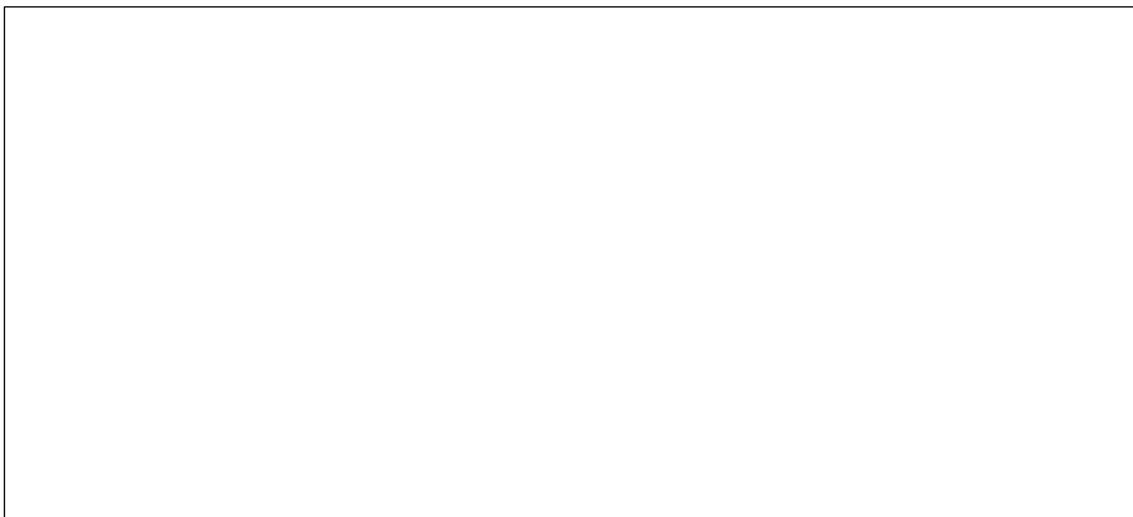
1. Convergent:

2. Divergent:

3. Transform:

4. Epicentre:

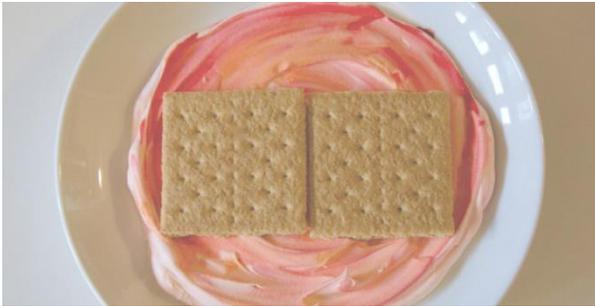
Explain how the movement of Tectonic plates causes an earthquake. Draw a labelled diagram to illustrate.



ACTIVITY

Have fun doing this Earthquake activity using crackers or two slices of lightly toasted bread.

In a plate put some cream with colour in to simulate Earth's crust. Put some crackers or slices of bread and create the tectonic plate movements.



Transform (grind together)



Divergent (pull apart)



Convergent (push against)

Reflection: On a scale of 1 to 4 (1 being the lowest rating and 4 being the highest), how would you rate your understanding of how Earthquakes occur? Explain your reasoning, please.