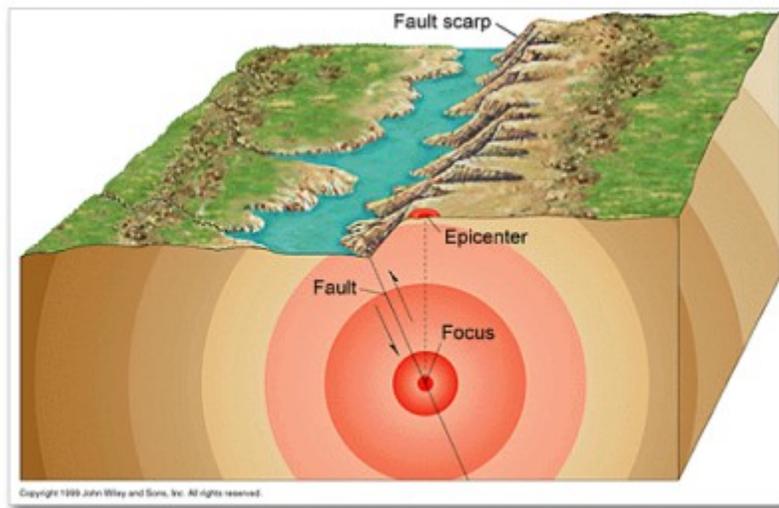


Student Notes: Unit 4- From Continental Drift to Plate Tectonics
Part 4 - Earthquakes

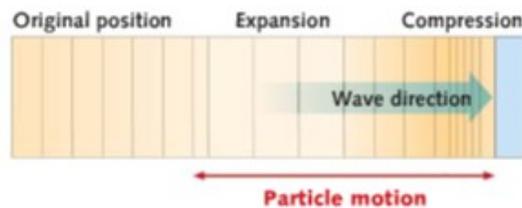
What is an earthquake and how are they made?

- An earthquake is the shaking of earth's crust caused by a release of energy.
- They are caused by the following:
 - as a result of a volcanic eruption
 - due to the collapse of a cavern
 - due to the impact of a meteor
 - due to the build-up of strain along faults or boundaries between lithospheric plates ***most common***
- An earthquake is formed due to plates being prevented from moving which causes a buildup of strain and friction. Eventually the strain becomes so great the plates break at the point where they are being prevented from moving. This area where the two plates break the stress is called the focus. Just above the focus where the waves of energy are released is called the epicenter.

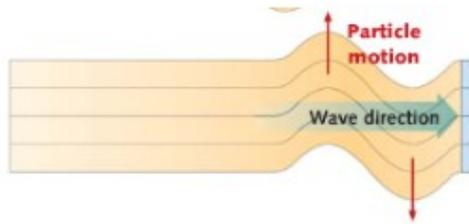


Energy Waves

- The energy that is released from an earthquake travels through the earth's crust in body waves leaving the focus and traveling through the material of the Earth's body.
- There are two types of waves:
 - P Waves or primary waves which squeeze and stretch rock material and can travel through all types of material found within earth's crust.



- S Waves or secondary waves cause rock material to move at right angles and can travel through earth's materials that are solid, but not through liquid or gas materials.



- Eventually when P and S waves reach the earth's surface we refer to them as surface waves.

***Make sure you have your own notes on the following results of earthquakes:**

- Ground movements
- Aftershocks
- Fires
- Tsunamis

Where are Earthquakes found?

- Earthquakes can be found at all types of boundaries.
- Most earthquakes are found at a boundary; however there are many fault lines that are buried deep beneath sediment deposited that may have been old fault lines that may form earthquakes.
- The worst earthquake recorded to date is a 9.5 magnitude in Chile on May 1960.
- The most significant earthquake was off the coast of Japan which reached a magnitude of 9.0 on March 2011.

Pacific Ring of Fire

- An area that is approximately 40, 000 km and takes on the shape of a horseshoe that runs along the boundary line of the Pacific Plate.
- It is an area where there are a large number of volcanoes and earthquakes occurring.
- There is currently 452 (75%) of the world's active volcanoes found here as well as 90% of the worlds earthquakes occurring.