

HOMework

- Review for Unit 4 Test
(Remember Link will be sent)
- Pull Study Materials from teamwebsite
mccarthyandoakes.weebly.com

******THIS SHOULD BE BOOKMARKED**

Come to office hours today if you need help 😊

Unit 4 Review Jeopardy

Unit 3

Review Jeopardy



Objectives:

RULES:

- Students will work through questions, using study guide if needed to answer
- Students will keep track of their points
HAVE PAPER AND PENCIL HANDY
- Students will ask questions if needed!



JEOPARDY!

ARE YOU READDDDDDDYYYYY?





**KEEP
CALM
AND
BELIEVE
YOU ROCK**

Categories

- The Continental Drift
- Tectonic Plates
- Plate Boundaries
- Plate Motion
- Seafloor Geography
- Stress
- Earthquakes and Volcanoes

The Continental Drift

- Continental Drift - the slow movement of continental plates over earth's surface
- Pangaea - the name scientists gave to a supercontinent that once existed on earth
- Theory of Continental Drift - the theory that the continents were previously joined together, and over time broke up and slowly drifted apart to their present positions

Evidence

- Fossils
 - Animals that would not have swam across an ocean but may have walked across a land bridge
- Mountain Chains
 - Appalachian Mountains
- Rock Layers
 - Evidence of glaciers in warm areas, tropical swamps in cold.



100 Points

- The theory of the continental drift says that a huge meteor smashed the earth and caused them to move.

- True



- False

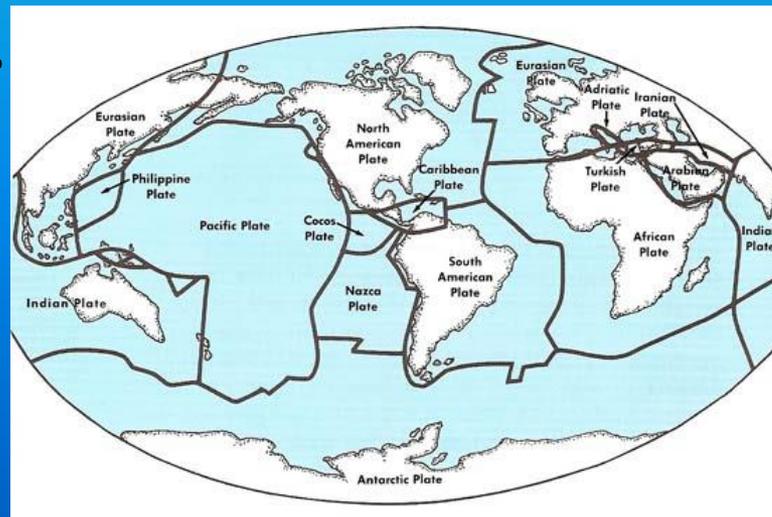


200 Points

- Which is evidence that supports the theory of the continental drift?
 - A. Erosion of coastlines
 - B. Matching fossils of different continents
 - C. Mountain chains
 - D. Both B and C

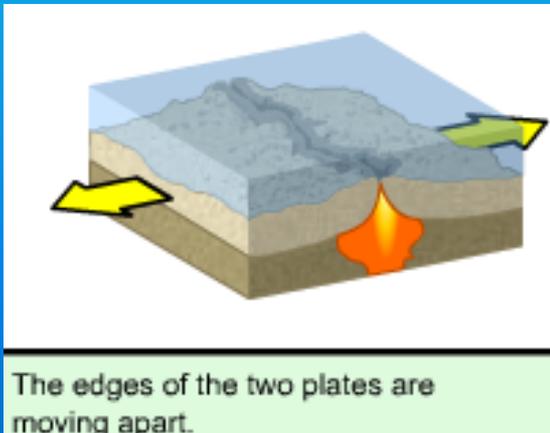
TECTONIC PLATES

- Earth is composed of many plates – all are different sizes and shapes.
- The discovery of Earth's plates helped explain the movement of the continents, as well as the cause of earthquakes and volcano eruptions.

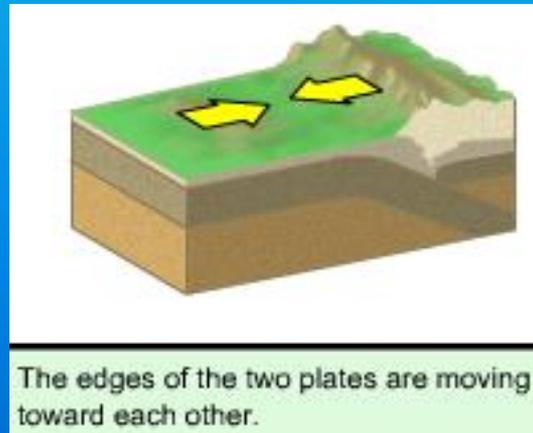


Three Kinds of Plate Motion

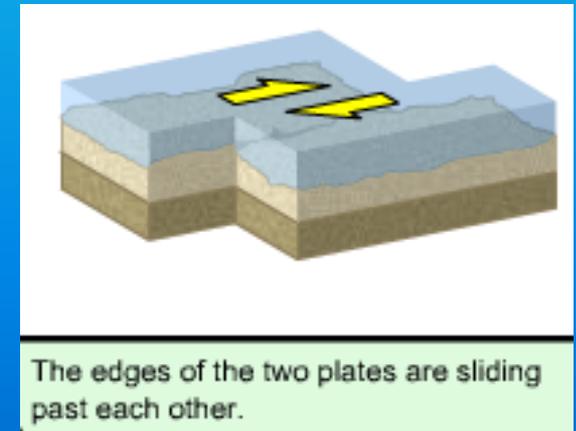
1. Mid-ocean ridges occur at divergent plate boundaries where plates are moving apart and magma is surfacing.
2. At convergent plate boundaries, one plate pushes on the edge of another plate, forming mountains for continental-continental plate collisions and deep-sea trenches for ocean-continental plate subduction.
3. Earthquakes occur at transform plate boundaries. Here, plates move in opposite directions alongside each other.



1.



2.



3.

100 Points

- Define Convergent Plates:
 - A. Plates that move beside each other in the same directions at the same speed
 - B. Plates that come together, move towards each other or collide.
 - C. Plates that move in opposite directions

200 Points:

- Define Divergent Plates:
 - A. Plates that move beside each other in the same direction at the same speed.
 - B. Plates that collide.
 - C. Plates that are moving apart in opposite directions

300 Points

Define Transform Plates:

- A. Plates move in opposite directions and slide past each other
- B. Plates that collide and form mountains
- C. Plates that move side by side in the same direction at the same speed.

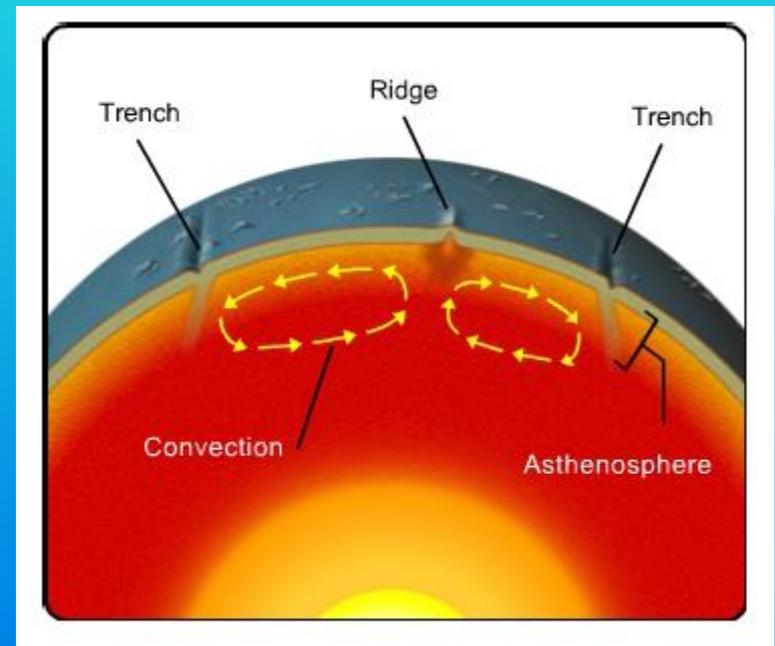
PLATE MOTION:

- The theory of plate tectonics explains that earth's continents move as part of plates in the lithosphere. Scientists have identified about a dozen major tectonic plates as well as some smaller ones.

What moves plates?

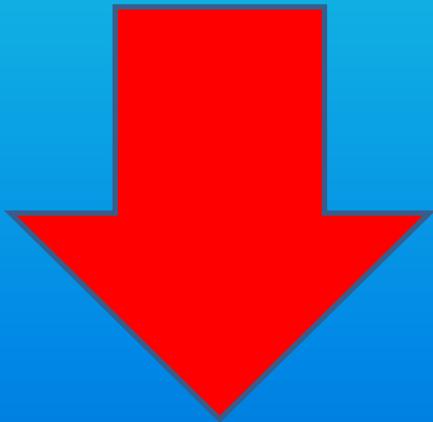
Two forces are the cause of plate motion:

- Gravity and
- Convection – the transfer of heat by the circulation or movement of the heated parts of a liquid or gas.
 - Occurs because of differences in density.
 - Heat from inner layers of the earth provides energy
 - This heat causes rocks to melt and makes the mantle flow



Transferring Heat

Eventually these areas cool again – and the process continues. It results in a circular motion/ current – or convection.



Temperature Cools



Density Increases

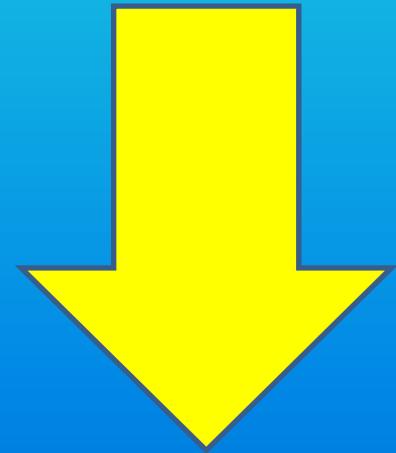
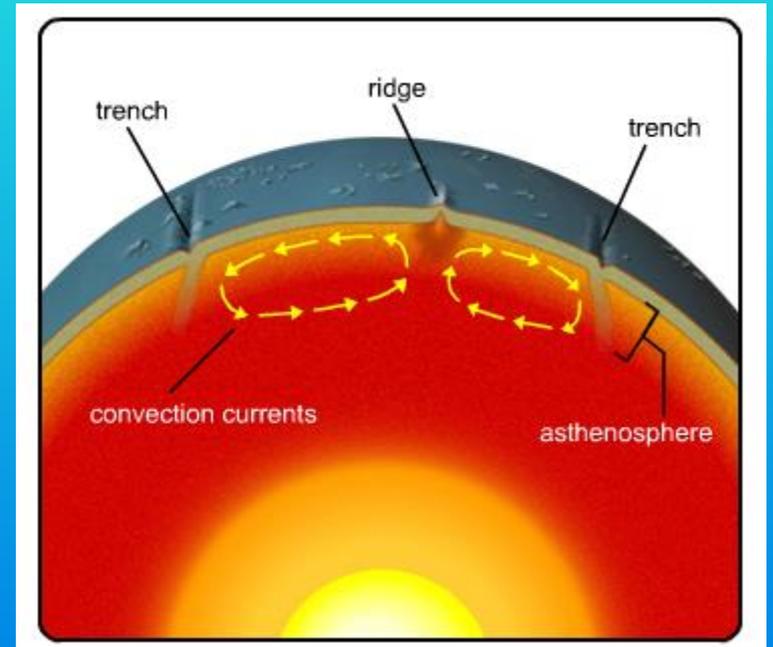


Plate Sinks

Transferring Heat : Convection

The cycle of convection is shown with the yellow arrows.

The process of convection is very slow



When Plates Converge (Collide):

- Oceanic and Continental:
 - SUBDUCTION- the oceanic plate is thinner and slides UNDER the continental crust

Continental and Continental:

- Push and fold up and crumpling can cause mountains to form

100 Points

Subduction is when a plate slides under another plate.

TRUE



FALSE



200 Points

Convection does not causes tectonic plates to rise and fall as the heat and cool.

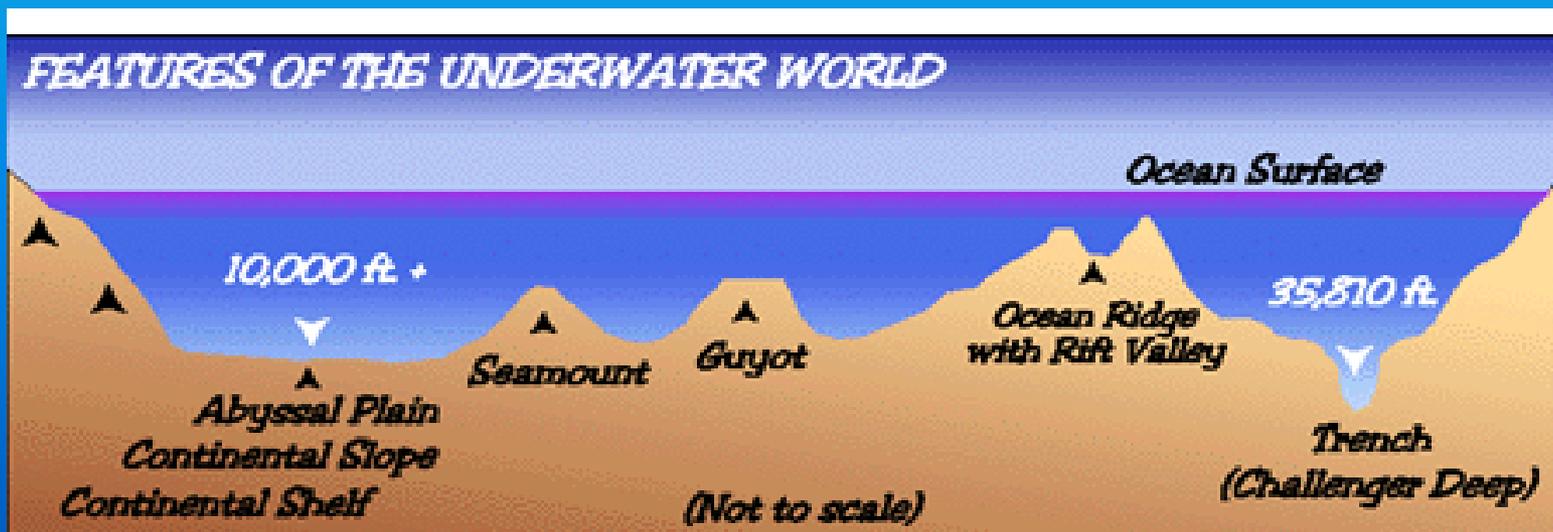
TRUE



FALSE

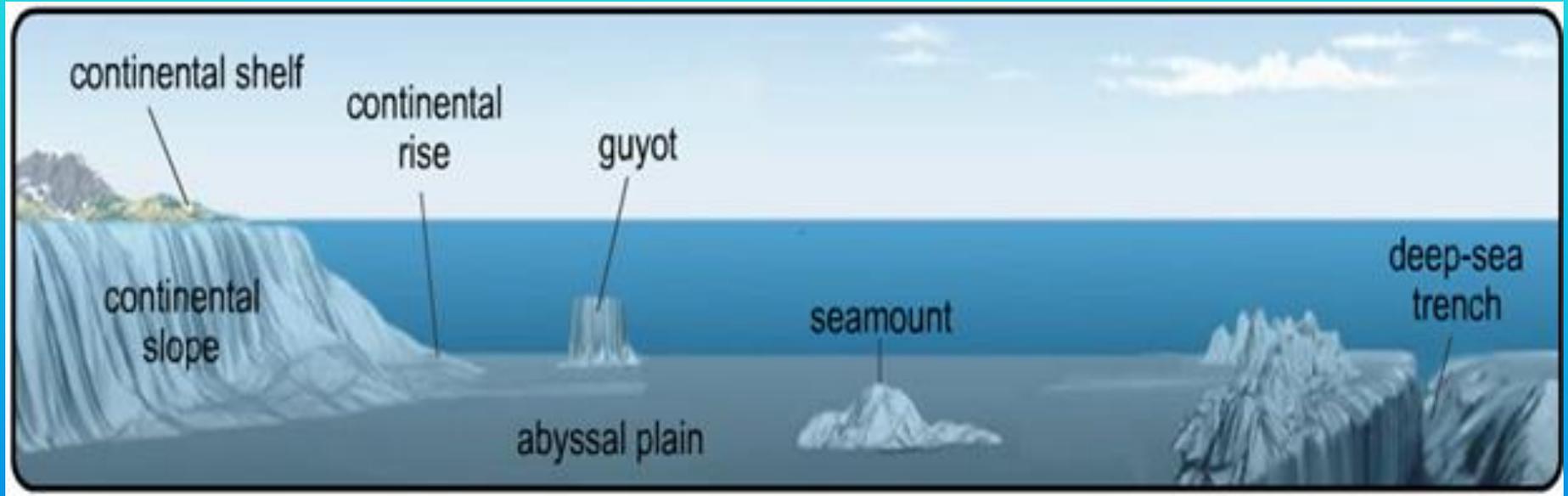


Seafloor Geography and Spreading



Vocabulary

- Abyssal Plain - a flat expanse of ocean floor
- Bathymetric - a type of data collected from measurement of the depths of oceans, seas, or other large bodies of water
- Continental Rise - a region of gentle slope between the continental slope and the main ocean floor
- Continental Shelf - a shelf of undersea land reaching a depth of about 200 meters (656 feet), extending out from the shoreline
- Continental Slope - the relatively steeply sloping undersea land extending from the outer edge of the continental shelf
- Guyot - a seamount with a flattened top
- Mid-ocean Ridge - a long, raised area in the ocean, with a depression or valley running along its top
- Seamount - a volcanic mountain that rises from the ocean floor and has its peak underwater
- Submarine Canyon - a deep channel on the ocean floor, in the outer continental shelf, in the continental slope, or in the continental rise
- Paleomagnetism - magnetic qualities “frozen” into rocks when they are formed, including the direction of the magnetic field



100 Points

Seafloor spreading came from a simple idea: magnetism

TRUE



FALSE



200 Points

The ocean floor has many qualities and formations similar to those found on the continental crust.

TRUE



FALSE



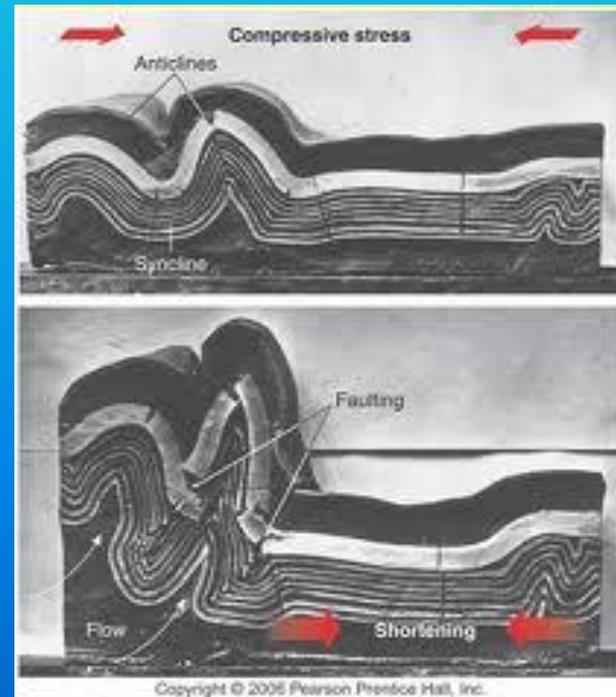
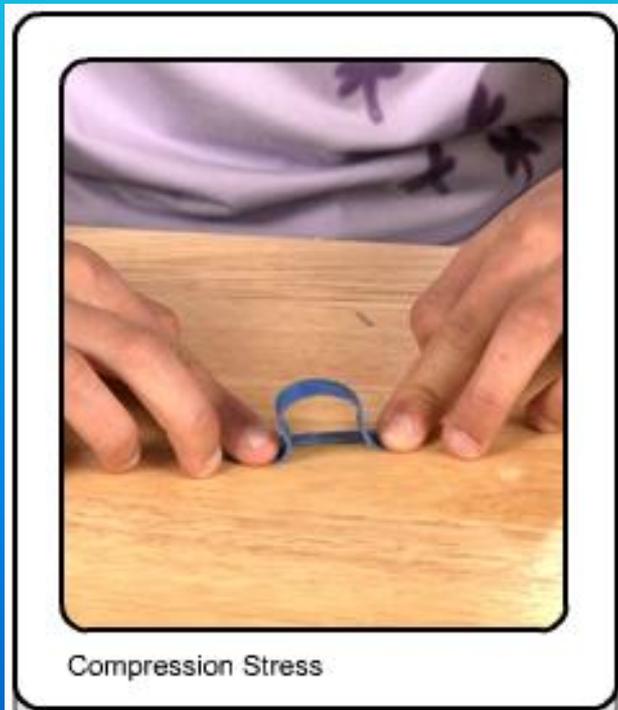
Stress on Plates

Earth's plates fit together snugly, and many are quite large. If one plate moves or a force is exerted on part of it, it may push on other plates or push or pull on another part of the same plate. This may cause three different types of stress on plates: Compression, Tension and Shear



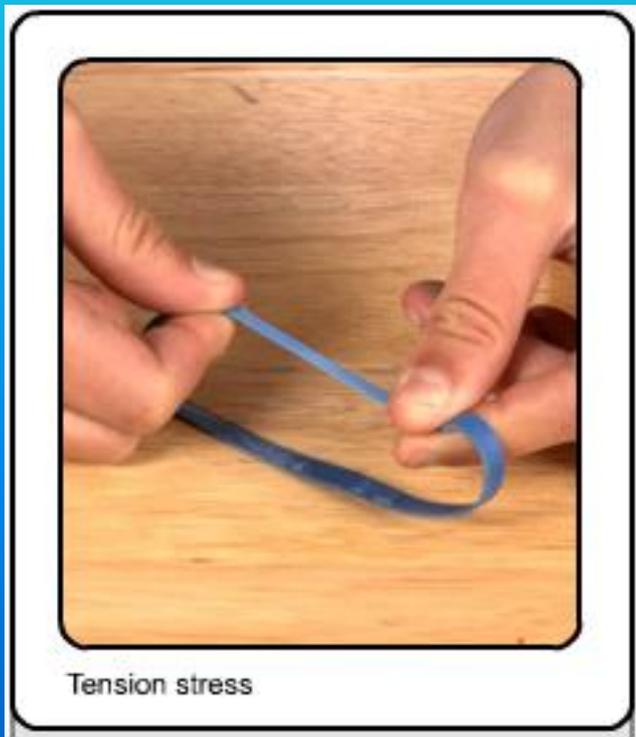
Compression

squeezing the rocks of the crust



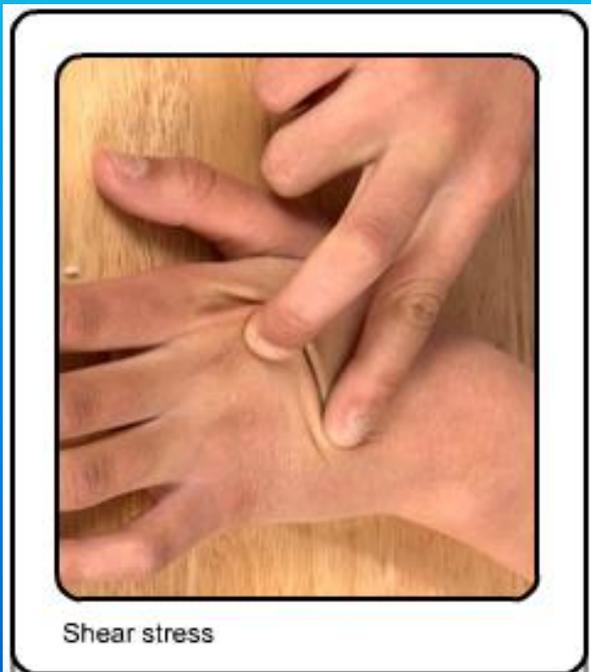
Tension

pulling the rocks and causing them to stretch or pull apart over a large area



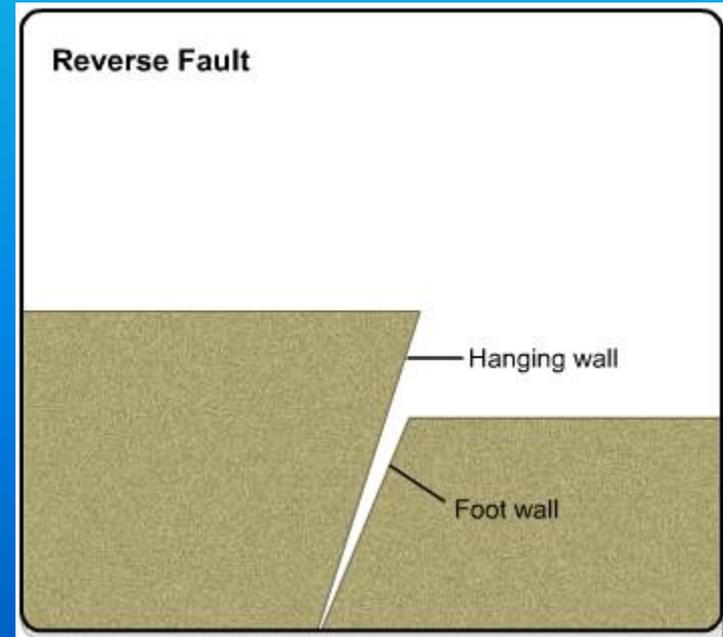
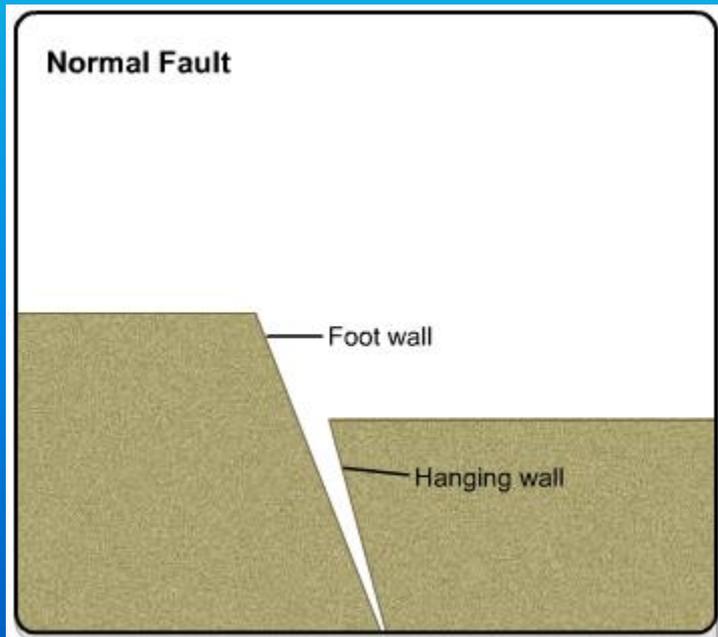
Shear

pushing the rock of the crust in two opposite directions alongside one another, resulting in a simple bend or break



Faults

- When movement happens faults, or breaks in the rock, can develop. The line the rock breaks along is called the fault line.
- The rock that leans on the top of the fault line is called the *hanging wall*. The rock block that is being leaned on is called the *foot wall*.
- The terms *foot wall* and *hanging wall* come from mining. Imagine a miner in a mine underground along the crack of the fault line. The foot wall is the sloping wall on which a miner could most easily rest his or her foot. The hanging wall is the one that would be hanging over the miner.



100 Points

When the hanging wall of a fault rises about the foot wall, it is called a reverse fault.

TRUE



FALSE



200 Points

Compression is a type of stress where the crust moves in opposite directions.

TRUE



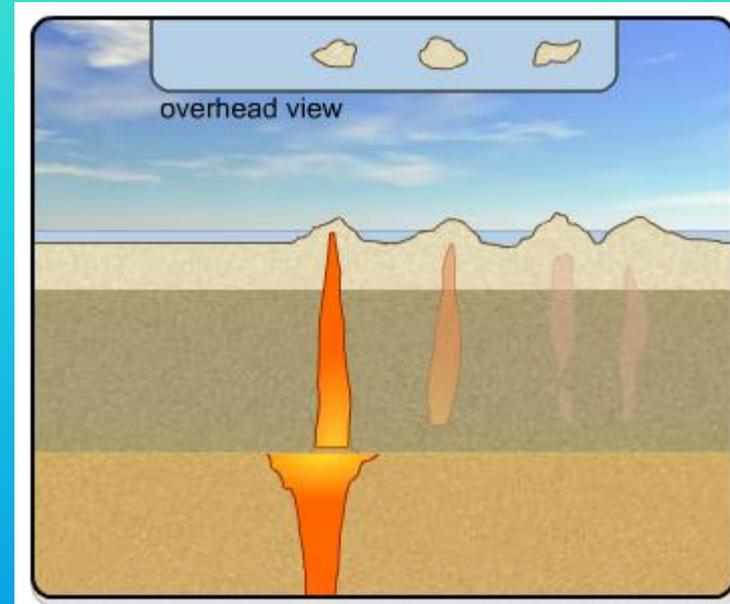
FALSE



EARTHQUAKES AND VOLCANOES

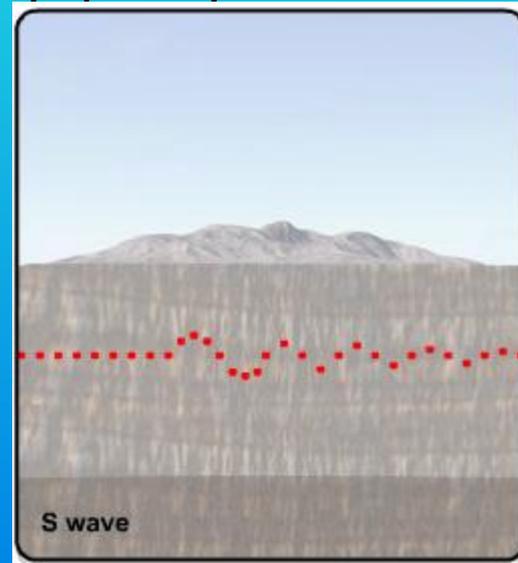
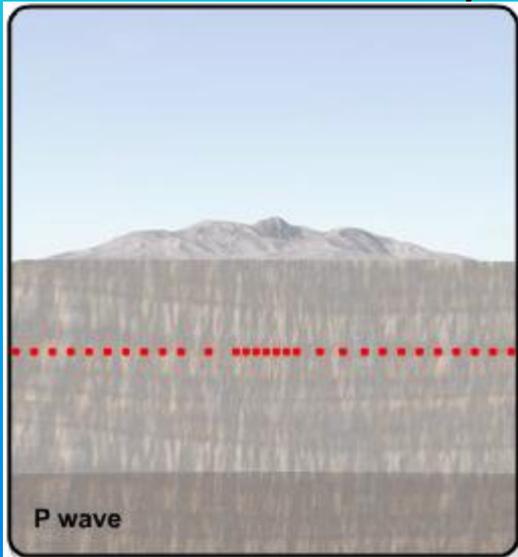
Hot Spots

Hot springs and geysers occur over hot spots, where rock from the mantle transfers heat to water near the surface of the earth. Many hot springs are a few degrees warmer than the surrounding air. Other hot springs contain water that is almost at the boiling point. In geysers, water boils below the surface and then forces a fountain of water up into the air – like Yellowstone's Old Faithful.



Making Waves

Earthquakes produce two types of seismic waves, which travel in different ways. The first are pressure waves, or *P waves* for short. They contract and release as they move very quickly.

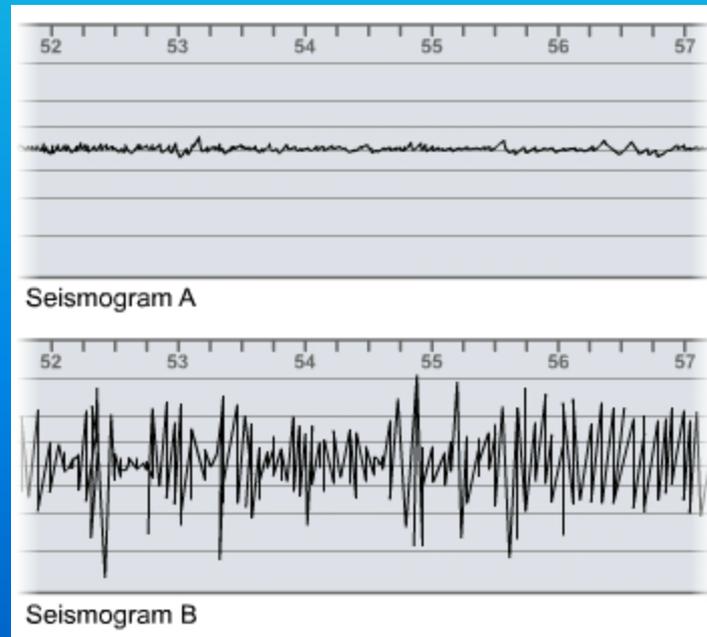


The second type of seismic wave is an *S wave*.

S waves move more like a rope. That means they move sideways and back and forth compared to the direction the wave is traveling. They do not travel as fast as P waves.

Seismographs!

Sensitive instruments are able to detect very slight movements in the earth's lithosphere. A seismograph is an instrument that can detect vibration in the earth. As seismic waves move through the earth, a seismograph detects the vibrations, and then represents them with a line drawn on paper, called a seismogram. Below are two sample seismograms. Which one do you think was produced during an earthquake?



100 Points

- What is a hotspot?

200 Points

What are the two types of seismic waves?

- A. High and Low
- B. P and S
- C. X and Y
- D. A and S

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