

Earthquakes

Rocks Move along Faults

An earthquake is a shaking of the ground caused by the sudden movement of large blocks of rock along a Fault. Earthquakes occur along Faults.

A Fault is a fracture or break, in Earth's lithosphere, along which blocks of _____ move past each other.

Earthquakes

A sudden _____ in the lithosphere causes an earthquake.

The waves travel in all _____.

Earthquakes _____ until all the _____ is used up.

TSUNAMIS Earthquakes on the Ocean floor causing waves to become greater than 20 meters high.



Handwritten notes on the right side of the page, partially obscured by the diagram. The text is difficult to read but appears to include terms like 'Fault', 'Ocean floor', and 'waves'.

Occurrence of Earthquakes

About 80 percent of all earthquakes occur in a belt around the edges of the _____

In the United States, the best-known fault in this belt is the _____ in California.

San Andreas Fault - This is a _____ that runs from the Gulf of California through the San Francisco area.

Kinds of Faults

The three main types of faults are:

- 1) Normal
- 2) Reverse
- 3) Strike-slip

Stress that pulls rocks _____ causes normal faults. An example is the _____

Stress that presses rocks _____ causes reverse faults. An example is the _____

Stress that pushes blocks of rock _____ causes earthquakes

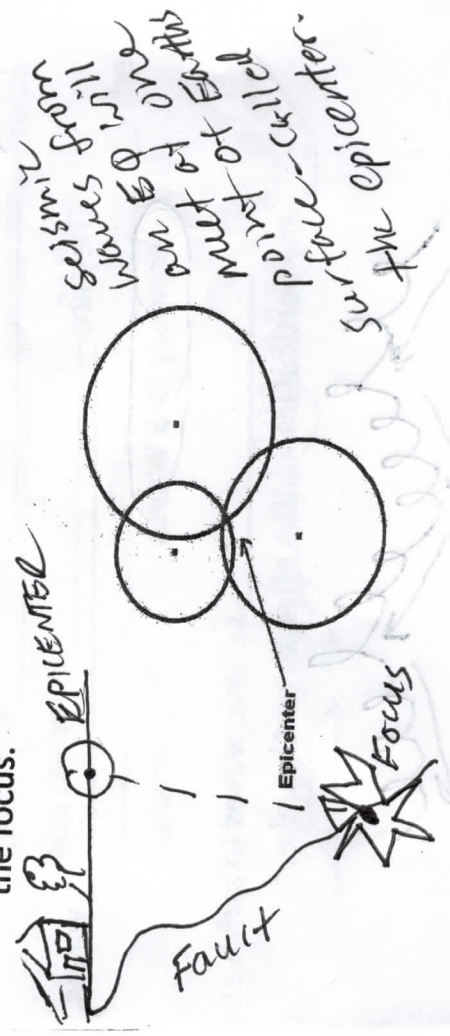
along strike-slip faults. An example is the _____

Seismic Waves

Energy from earthquakes travels through Earth. The energy travels as seismic waves which are vibrations caused by earthquakes.

Focus and Epicenter

The focus of an earthquake is the point under ground where rocks first begin to move. Seismic waves travel outward from the earthquake's focus. The epicenter is the point on Earth's surface directly above the focus.



Seismic Waves

Earthquakes produce three types of seismic waves:

primary, secondary, and surface waves. Each type moves through materials differently. The waves can also bend as they pass from one layer into another.

Scientists learn about Earth's layers by studying the paths and speeds of seismic waves traveling through Earth.

Primary or P Waves

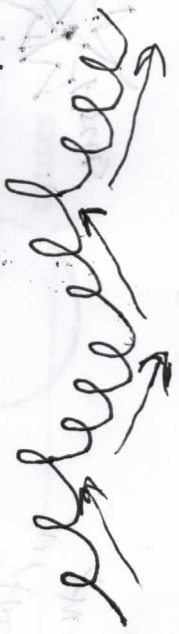
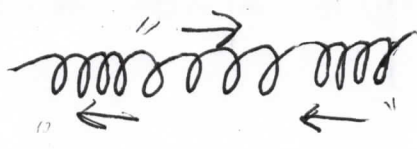
Primary waves are the (5) km/sec or 3mi/sec) and arrive first at the _____.

Primary waves can travel through _____ and _____.

They are _____ waves.

Secondary or S Waves

The _____ seismic waves to arrive at any particular location after an earthquake.



They travel through Earth's _____ at about _____ the speed of primary waves.

They can travel through solids, but NOT through _____ or _____.

They move in an _____ motion.

Surface or L Waves

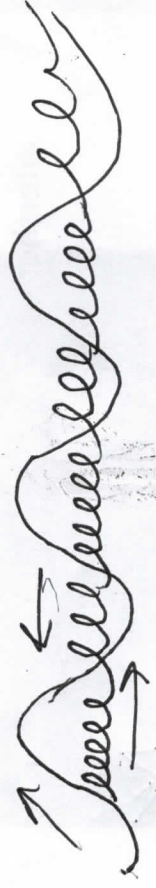
Seismic waves that move along Earth's _____, not through its _____.

Make the ground roll _____ or shake from _____.

_____ moving seismic waves.

Travel _____ Earth's surface.

Cause the _____ ground movements and the most _____ as they _____ the surface.



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Measuring Earthquakes

Seismograph - an instrument that constantly records ground movements

Seismogram - paper record of waves also used to determine an earthquake's magnitude or strength

Seismologist - scientists who study earthquakes

Richter Scale - a scale that allows scientists to determine earthquake strength based on many readings. 1-10 are levels at which an earthquake is measured based on amount of damage caused; levels above 7 are destructive. Each increasing number has 32 times more energy.

Aftershocks

An aftershock is a _____ earthquake that follows a more _____ earthquake in the same area. Sometimes structures _____ by an earthquake _____ during shaking caused by aftershocks.

the same area

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Liquefaction

Earthquakes can cause Liquefaction, a process in which shaking of the ground causes the soil to act like a _____. For a short time, the soil becomes like a thick soup. Liquefaction occurs only in areas where the soil is made up of loose _____ and silt and contains a large amount of _____. As the shaking temporarily changes the wet soil, structures either _____ into the soil or _____ away with it.

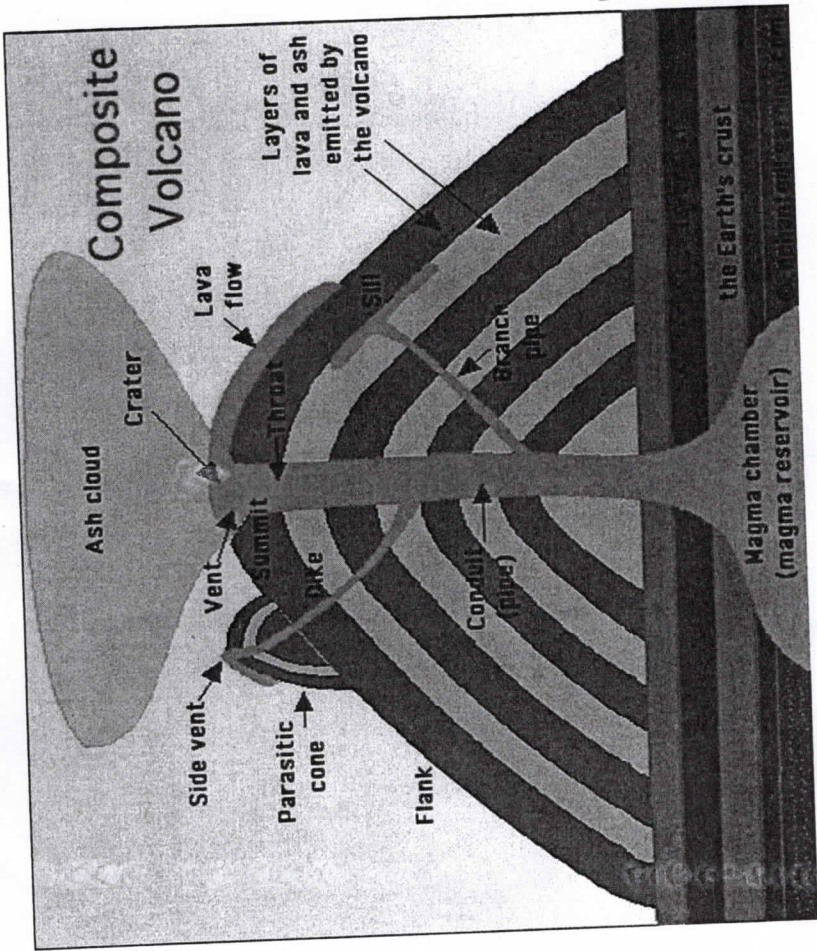
Tsunamis

A special type of wave which can make water rise more than the height of a _____. This wave is a water wave triggered by an _____ or _____. Tsunamis are sometimes called _____.



A Volcano is a crack in Earth's crust where magma leaks through.

- When magma cools it forms solid
- _____ (new crust)

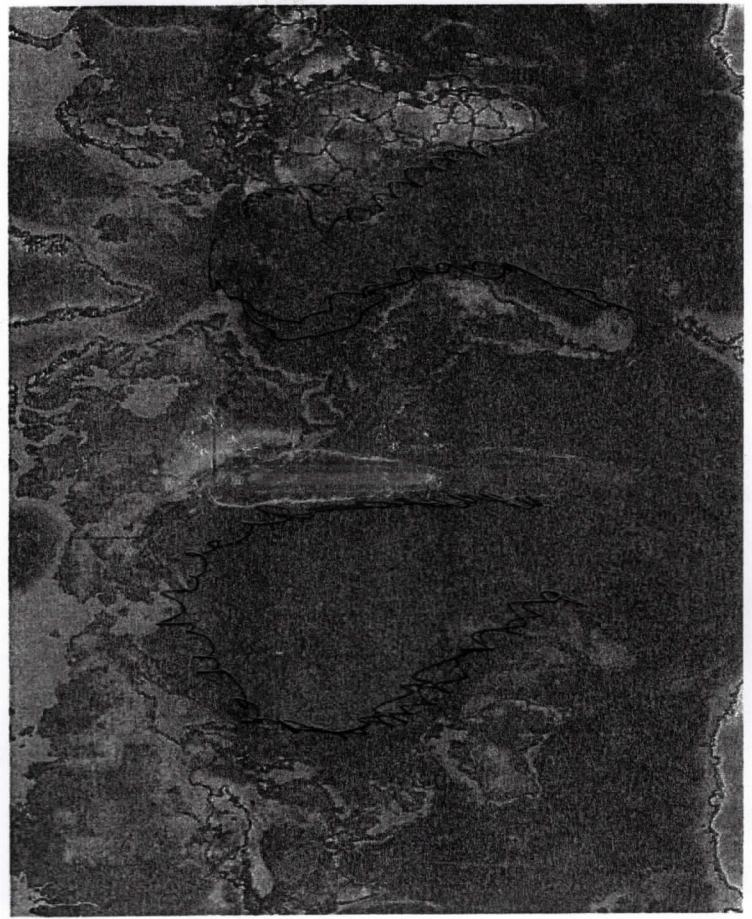


- Most Volcanoes form along _____ and _____ boundaries. (called subduction zones)

One major volcano belt is called the Ring of Fire which rims the Pacific Ocean.

_____ can also form where _____ erupts through the _____ away from boundaries, called hot spots. (like the Hawaiian Islands)

Ring of Fire (most volcanoes form here. Why?)



A: Plate movement at boundaries & mid-ocean ridges 9