Earthquakes Modified

Plate Tectonics

Recall that the earth's crust is broken into large pieces called _____.

These slowly moving plates _____each other,

_____each other, or _____from each other.

This causes much _____ on the rocks.

Plate Boundaries

The _____is an area bordering the _____

Ocean where many earthquakes and volcanoes occur.

_____and _____

result in movement along fault lines causing earthquakes and volcanic

eruptions

Stress on Rocks

_____ – rocks move together

_____ – rocks move away from each other

_____– rocks slide past each other

Faults

A _____ or zone of fractures between two blocks of rock.

These blocks _____ relative to each other.

A quick movement along fault lines results in an _____.

There are _____ main types of faults.

Earthquakes Modified

Normal Fault

_____-rocks move away from each other

Hanging wall moves _____relative to the foot wall.

Reverse Fault

_____– rocks move toward each other

The hanging wall _____ relative to the footwall.

Strike-Slip Fault

_____shearing – rocks slide past each other

Rocks are displaced mainly in a _____, parallel to the fault line.

Example: San Andreas Fault in California

Earthquakes

Occurs when the _____ built up along a fault line becomes so great that the rocks on either side of the fault suddenly _____.

This pent-up pressure is released as _____.

Energy radiates out in the form of _____ waves.

Earthquakes (cont.)

This energy results in _____, which sometimes causes great destruction.

Small earthquakes happen frequently, but large ones are more _____ and difficult to _____.

Smaller _____ occur after the main event.

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Layers of the Earth Review

Crust – _____ outer layer

Mantle – plastic-like _____

Outer Core - _____

Inner Core - _____

Seismograph

An_____that measures and records details of earthquakes.

Determines the _____ and the _____ of an earthquake

_____ – the record produced by the seismograph

_____ – a scientist who studies earthquakes.

Seismic Waves

P Waves (_____)

_____ waves to arrive at the seismic station (fastest)

Can move through the _____ and _____ layers of the earth

Considered a "_____" wave

Shakes the ground back and forth (_____)

Seismic Waves

S Waves (_____)

_____ than P Wave

Can move through the _____ layers (crust and mantle) of the earth –

also considered a _____wave

Moves rock particles _____or _____

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P Wave/S Wave Graph

A graph is sometimes used to determine either the _____ or

_____ of seismic waves.

These type of graphs help scientists determine where earthquakes

_____.

Seismic Waves

Surface Waves

Travel only through the _____

Arrive _____ P and S Waves

Almost entirely responsible for the _____ and

_____ of an earthquake.

_____ types of Surface Waves (see diagram)

Focus and Epicenter

_____ – the point within the earth where the earthquake originates

_____ – the point on the earth's surface directly above the focus.

Determining the Epicenter

Scientists use a method called _____.

It takes _____ seismographs to locate the _____.

You must determine the _____ each station is from the earthquake

and draw a _____ around each using the distance as the _____.

Where the ____ circles intersect, is the _____.

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Measuring Earthquakes

_____measures the strength or magnitude of an earthquake.

Numbered from _____

Each increase in magnitude is actually_____ times greater in

_____- than the previous magnitude

Measuring Earthquakes

Mercalli Scale measures the _____ or severity of an earthquake.

Numbered from _____

Describes what you might _____during an earthquake in

addition to the type of destruction.

Tsunami

A powerful series of _____ generated by an earthquake or

landslide _____.

Huge amounts of seawater are _____.

Can travel at an average of _____in open ocean

Can be very destructive to _____

Japan 2011

More than _____ killed

Earthquake _____ triggered a giant tsunami

_____ were overwhelmed, creating new problems for

people in the middle of destruction

Earthquakes Modified

Earthquake Prediction

Currently there is no way to _____ an earthquake.

Scientists can identify _____ most likely to experience earthquakes (close to _____).

_____ seems to have a sixth sense in predicting earthquakes, but that hasn't been scientifically proven.

Earthquake Preparedness

Emergency Kit

Determine a way of _____ with family members

Attach _____ to walls and put _____ stuff on bottoms Shelves

Get _____ doorways or outside away from buildings

_____are the killers.