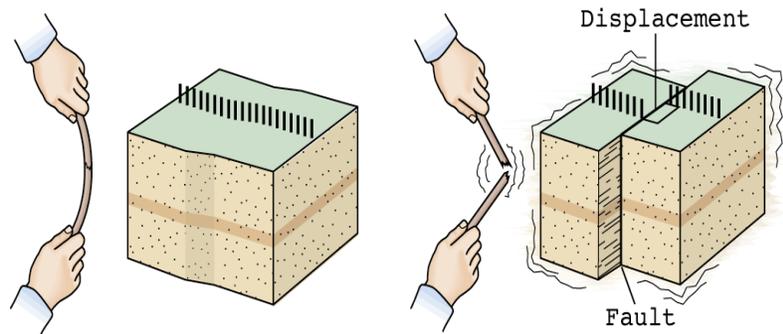


18.2 Earthquakes – Inquiry activity

Name: _____

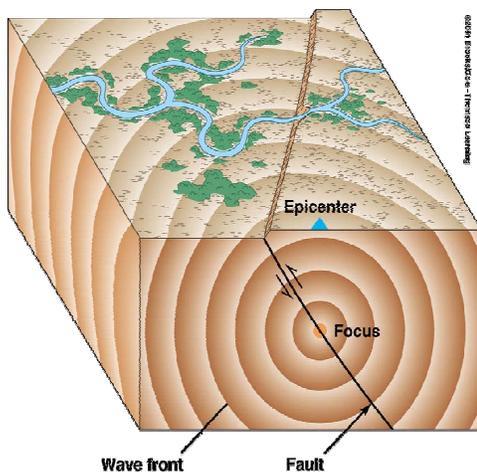
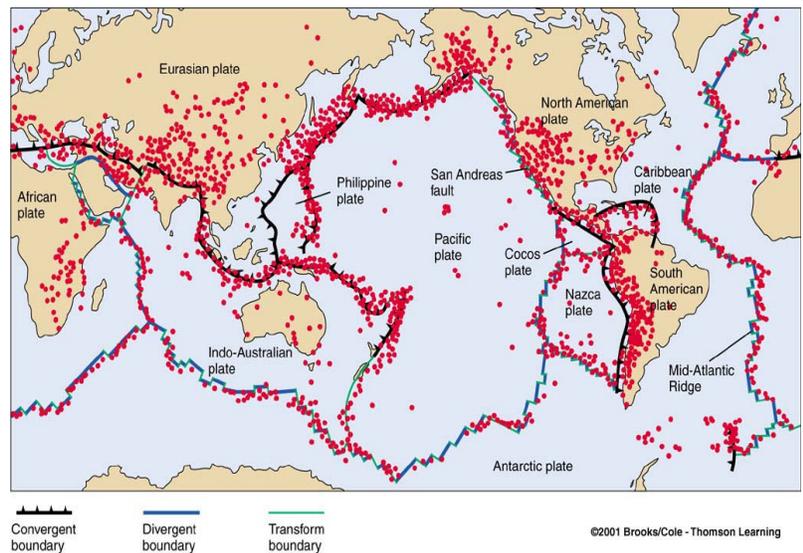
1. What is an earthquake?
2. What are aftershocks?



http://earthquake.usgs.gov/learn/animations/animation.php?flash_title=Elastic+Rebound&flash_file=elasticrebound&flash_width=300&flash_height=350

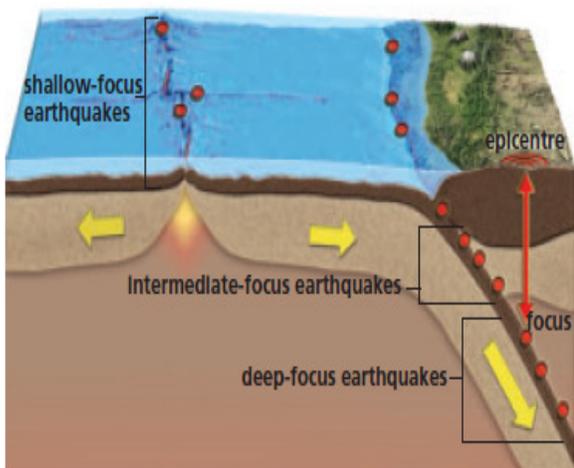
Using the diagram to the right:

3. Where do earthquakes typically occur?



Based on the diagram to the left:

1. What is the focus? Where is it?
2. What is the epicenter? Where is it?



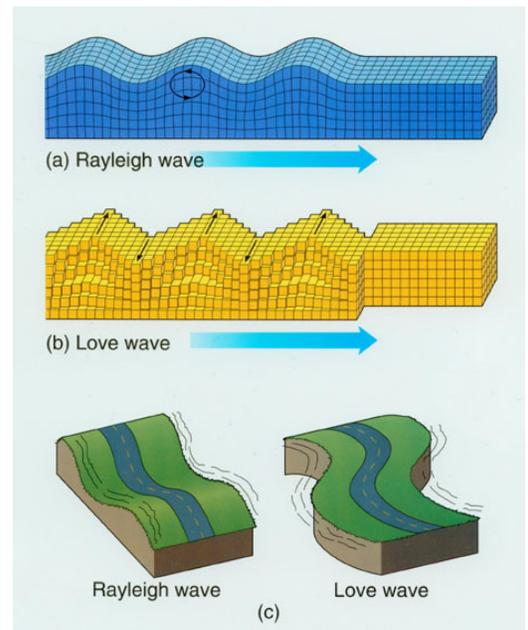
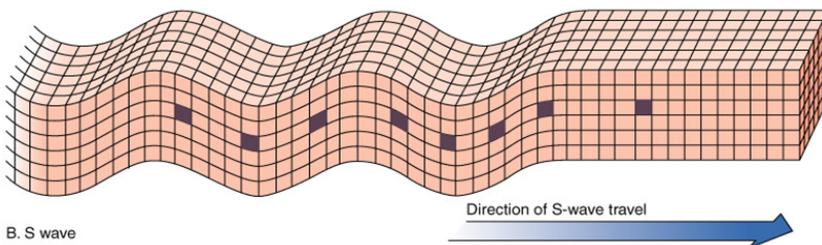
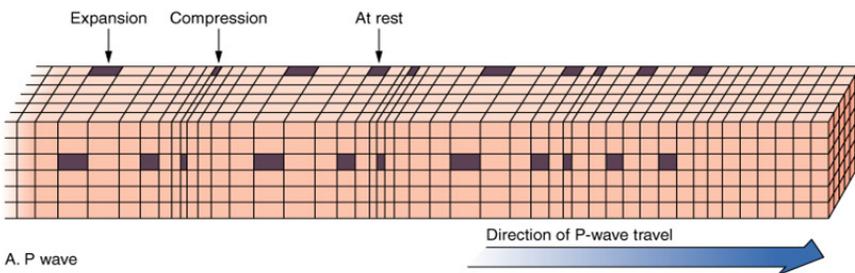
3. Earthquakes can be one of three types. Based on the diagram to the left– name them and describe where they are found.

4. What are seismic waves?

There are two major types:

1. **Body waves** (of which there are also two types – P and S waves). Using the diagram below and slinky demo – describe them.

	P - wave	S - wave
Description		
Slink demo – draw it		
Which one is faster? Which one will arrive at the seismograph first		
Types of materials that they travel through		
What layers of the earth will they travel through?		

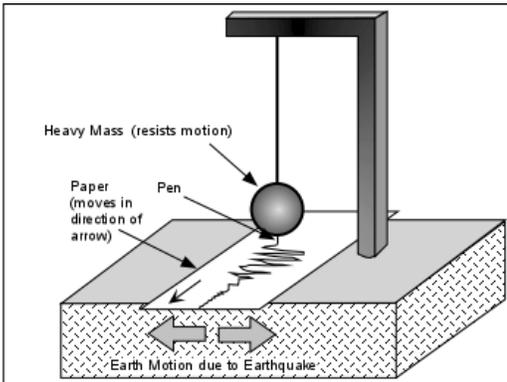


2. Surface waves

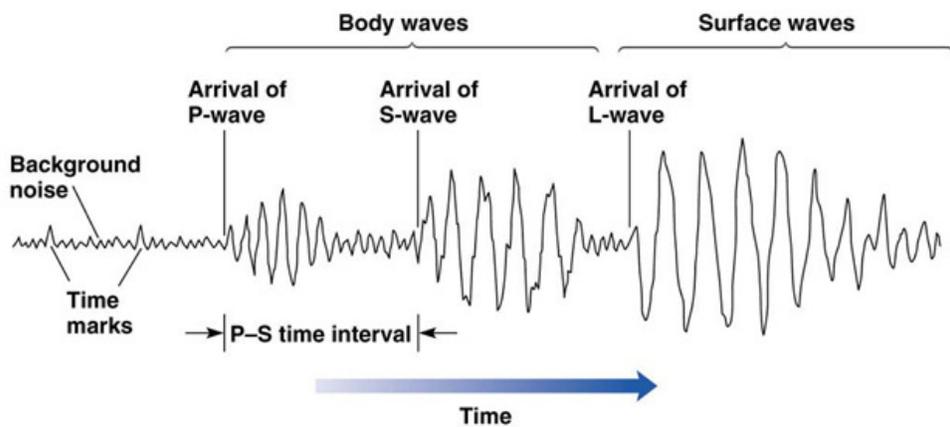
- Where do you think they travel?
- Do you think they cause more or less destruction?

Applications of Seismology:

Name: _____



Seismographs record earthquake events



Referring to the diagram above:

1. What is the P-S interval?

Virtual Geology Lab:

Now, we are going to use information recorded from 3 seismographs to find the epicenter of an earthquake.

Go to the following website: <http://www.sciencecourseware.com/virtualearthquake/>

A. Choose one of the regions to generate a set of seismographs for an earthquake.

1. Which region did you choose? _____

B. Then view the seismographs.

1. What was the first seismograph station _____ and how much time passed between the arrival of the p and s wave? _____ sec
2. What was the second seismograph station _____ and how much time passed between the arrival of the p and s wave? _____ sec
3. What was the third seismograph station _____ and how much time passed between the arrival of the p and s wave? _____ sec

C. Convert P-S interval

Station	Distance to interval (km)

D. Find the epicenter

1. What city is it nearest too? _____
2. Were you accurate or just close? _____

E. View the true epicenter – what is it? _____

F. Now compute the Richter scale magnitude (you will have to read a few pages first)

Station	Magnitude (mm)

G. Then calculate the magnitude

1. What is your estimate? _____

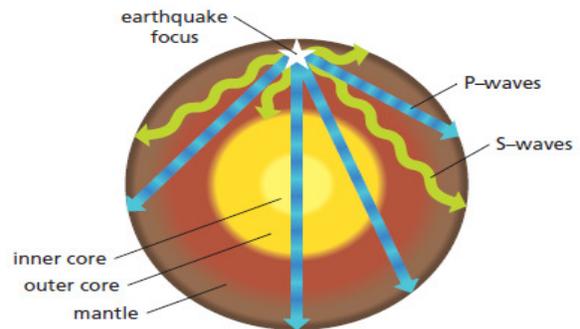
H. Confirm the magnitude

1. How close were you?

Seismic waves and layers of the earth:

Refer to the diagram to the right:

1. How can we detect earthquakes on the other side of the earth?



2. Which waves travel right through the core? Which do not?

3. Based on our understanding of those waves (table above)– what does that tell us about the properties of the core?

<http://www.pbs.org/wnet/savageearth/animations/earthquakes/main.html>