Name_____ **Close Read Annotation Instructions**

Read the material—one paragraph at a time. Do the following for each paragraph.

1. "Chunk" the paragraphs (draw a line between each one and number them) 1. _____

2. Circle 3-7 key works in each paragraph.

3. Put a cloud around words you don't know.

4. Put a box around the main idea of each paragraph.

5. Underline and number two supporting details in each paragraph.

   #1 **#2**

6. Summarize each paragraph in 10 words or less in the margin.

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Name_____ **How Does a Seismograph Work? Reading and Worksheet**

Taken from http://science.howstuffworks.com/environmental/earth/geophysics/question142.htm

A **seismograph** is the device that scientists use to measure earthquakes. The goal of a seismograph is to accurately record the motion of the ground during a quake. If you live in a city, you may have noticed that buildings sometimes shake when a big truck or a subway train rolls by. Good seismographs are therefore isolated and connected to bedrock to prevent this sort of "data pollution." The main problem that must be solved in creating a seismograph is that when the ground shakes, so does the instrument. Therefore, most seismographs involve a **large mass** of some sort. You could make a very simple seismograph by hanging a large weight from a rope over a table. By attaching a pen to the weight and taping a piece of paper to the table so that the pen can draw on the paper, you could record tremors in the Earth's crust (earthquakes). If you used a roll of paper and a motor that slowly pulled the paper across the table, you would be able to record tremors over time. However, it would take a pretty large tremor for you to see anything. In an actual seismograph levers or electronics are used to **magnify the signal** so that very small tremors are detectable. A big mechanical seismograph may have a weight attached that weighs 1,000 pounds (450 kg) or more, and it drives a set of levers that significantly magnify the pen's motion. The **Richter scale** is a standard scale used to compare earthquakes. It is a logarithmic scale, meaning that the numbers on the scale measure factors of 10. So, for example, an earthquake that measures 4.0 on the Richter scale is 10 times larger than one that measures 3.0. On the Richter scale, anything below 2.0 is undetectable to a normal person and is called a **microquake**. Microquakes occur constantly. Moderate earthquakes measure less than 6.0 or so on the Richter scale. Earthquakes measuring more than 6.0 can cause significant damage. The biggest quake in the world since 1900 scored a 9.5 on the Richter scale. It rocked Chile on May 22, 1960!	Summarize each paragraph in this area.

How Does a Seismograph Work? What is the Richter Scale? Pg 2

Look at paragraph two of the reading. It gives you a “word picture” of how a seismograph looks. On this page, draw a picture of what you think a seigmograph will look like based on the description given.

Name_____ **Day One Homework**

1. What is the relationship between the tectonic plates and earthquakes?
2. How do you know?
3. Defend your answer with the evidence from your map.

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Name_____ **Day Two Homework**

1. Describe the different parts of a seismograph and explain why each one's job is important.
2. Explain the difference between a 3.2 magnitude earthquake and a 7.3 magnitude earthquake.
3. Why do you think we should measure earthquakes?

Name_____ **Engineering Design Process**

1. Ask:
What is the problem you are trying to solve?

2. Imagine:
What are all of your ideas?

3. Plan:
Sketch out your idea. Be sure to label the parts of the seismograph in your picture!

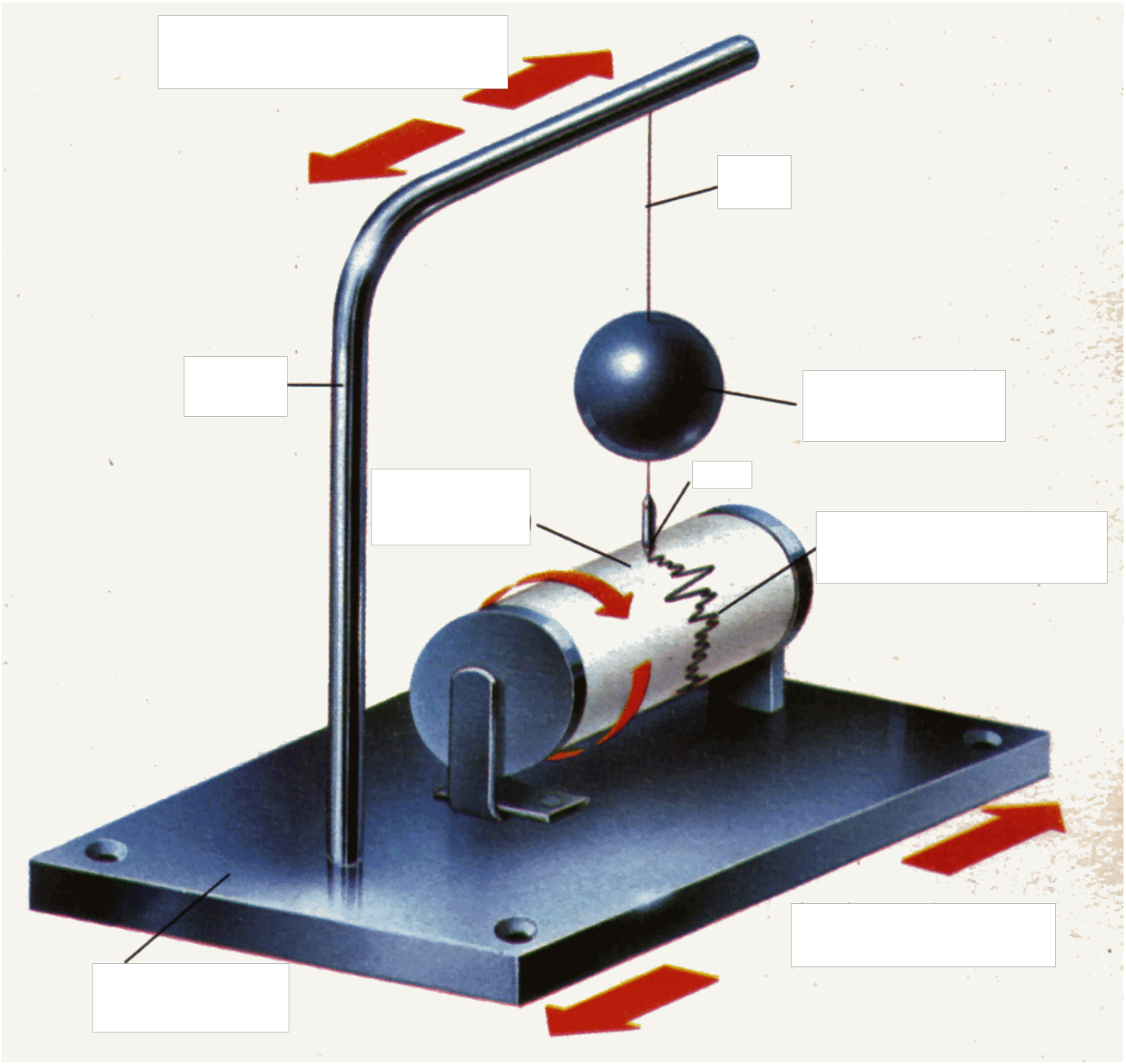
Engineering Design Process pg 2

4. Create:
Build it. What are the problems you're having while you're building it?

5. Improve:
Did your seismograph do it's job (recording the movement of the ground underneath it)? What evidence do you have to prove it? How would you improve your seismograph if we did this project again? Why would you change it?

Name_____

Glimpse of a Seismograph
Label the parts



Google Images
http://www.geographypods.com/uploads/7/6/2/2/7622863/925219978_orig.gif?337

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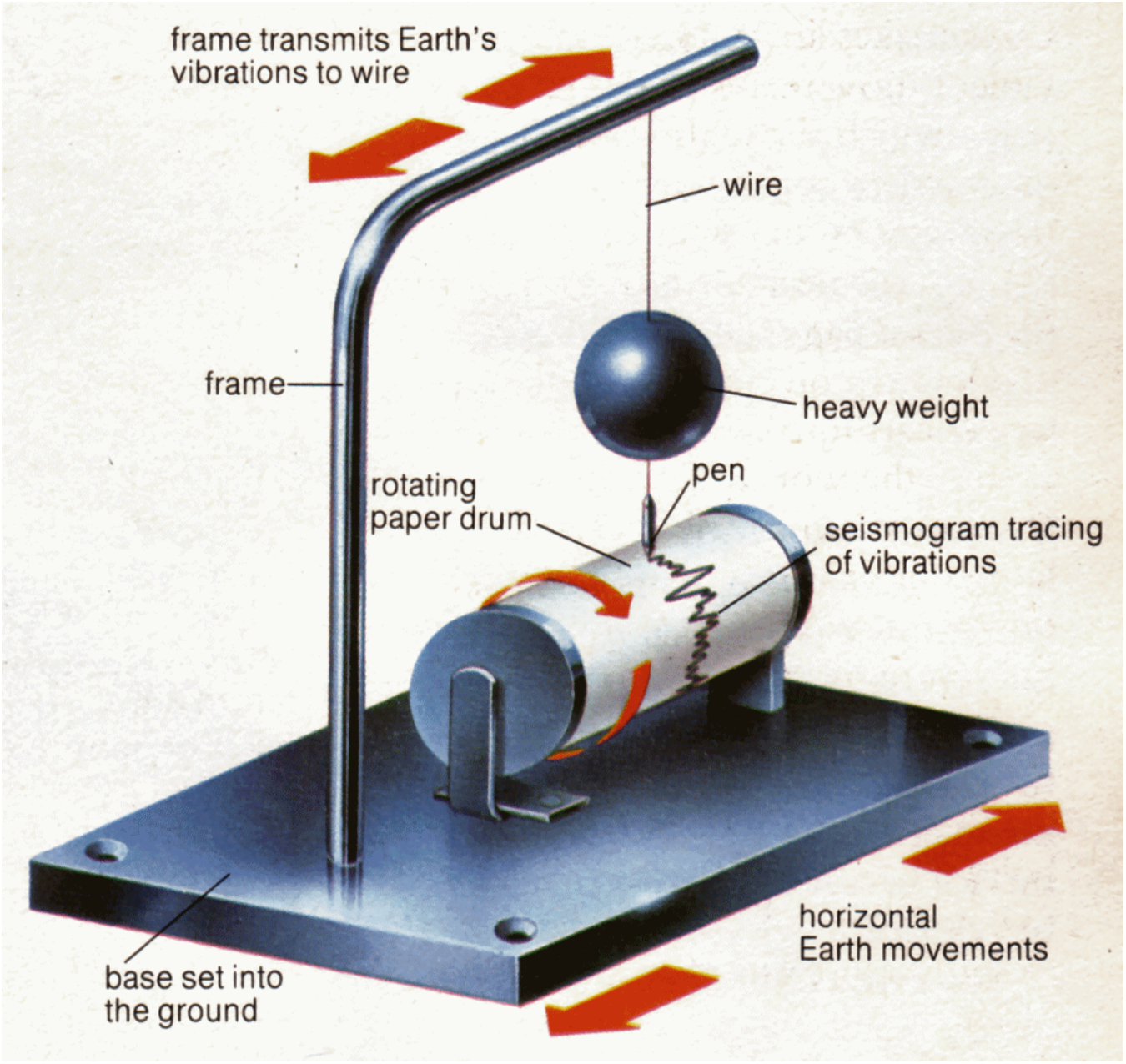
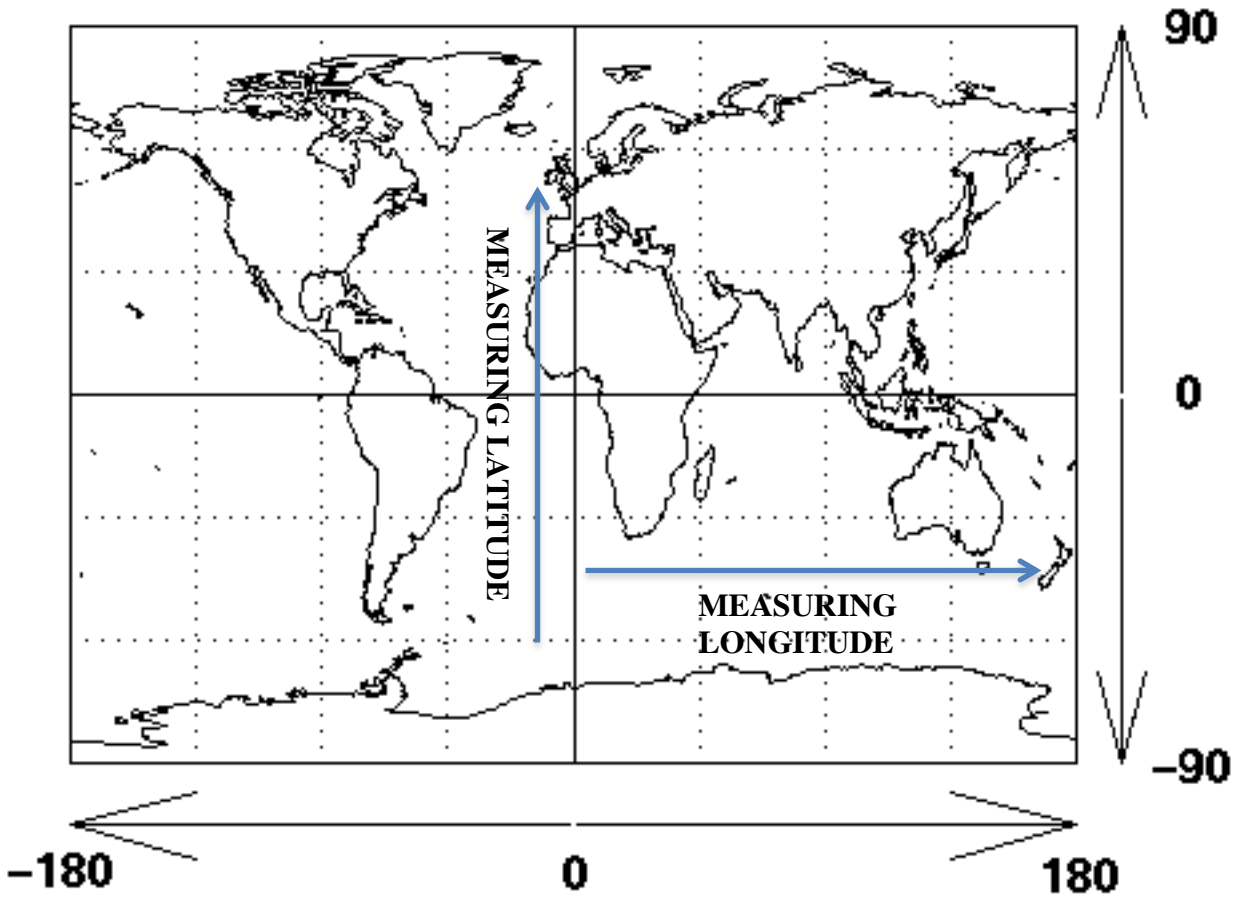
Glimpse of a Seismograph KEY



Understanding Positive and Negative Latitude and Longitude

Image from: http://www.csgnetwork.com/gpscoordconv.html



Positive Latitude and Longtude can be confusing.

First, it is important to remember that ***your LATITUDE is your Y coordinate.*** You're finding out how far North or South you need to move. ***Your LONGITUDE is your X coordinate.*** You're finding how far East or West you're moving.

LONGITUDE: East of the Prime Meridian (to the International Dateline) is *Positive*; West of the Prime Meridian (to the International Dateline) is *Negative.*

LATITUDE: North of the Equator is *Positive;* South of the Equator is *Negative*.

Name_____ **Final Assessment**

You are a seventh grade geography teacher giving a lecture to your students on how earthquakes happen everyday. Your lecture needs:

- An introduction stating that earthquakes occur everyday. (5 pts)
- To explain the role of tectonic plates. (10 pts)
- Actual information from the last 30 days of earthquake data. (5 pts)
- To decribe how a seismograph is built and what is its function. (10 pts)
- To include how the intensity of an earthquake is measured. (5 pts)
- A conclusion. (5 pts)