Map Basics

Geology/Earth Science Mr. Traeger

Name: _____ Period: _____ Date: _____
Partnerôs Name: _____

Purpose
The purpose of this activity is to become acquainted with the basic concepts of maps, namely latitude and longitude.

Materials
- ñPlace Matòmap of the world
- Chapter 3 in your textbook.
- Metric Ruler & Pencil

Part A: Map Basics
Answer the questions that follow.

1. What is a map?

2. Are maps as accurate as a globe? Why or why not?

3. Draw the four cardinal directions below. Hint: **N**ever **E**at **S**oggy **W**affles. Also give compass numbers in degrees.

4. **Geology only**: Discuss the advantages and disadvantages of the 3 main types of map projections.

Projection Type	Advantages	Disadvantages
Mercator Projection		
Gnomonic Projection		
Polyconic Projection		

5. What is a hemisphere?	If you look at a globe, how many hemispheres are there on the Earth?

6. In mapping, what is a degree? How many kilometers are equal to a degree?	How many minutes in a degree?	How many seconds in a minute?

7. What is latitude?	What axis would you use to measure latitude if you were in math class? *x* or *y*?	How many degrees of latitude are there on the Earth north or south of the equator?

8. What is longitude?	What axis would you use to measure longitude if you were in math class? *x* or *y*?	How many degrees of longitude are there on the Earth east or west of the prime meridian?

9. Where is the equator?	What is the latitude at the equator?	What is the longitude at the equator? Careful here: tricky question

10. Where is the prime meridian?	What is the latitude at the prime meridian? Careful here: tricky question	What is the longitude at the prime meridian?

Part B: Finding Yourself Using Latitude and Longitude Coordinates
Use the ñplace matòmap on your desk to find yourself. Fill in the blanks as necessary.

City or Place	Latitude (° North or South)	Longitude (° East or West)
1.	34° North	118° West
2. Anchorage, Alaska		
3. Auckland, New Zealand		
4.	30° North	90° West
5.	90° South	60° East
6.	90° North	60° West
7. Seoul, South Korea		
8. Honolulu, Hawaii		
9.	32° South	150° East
10. London, England		
11.	0° North	80° West

12. **Geology**: Imagine it is the 18th century and you are trying to find your position (latitude and longitude) while lost at sea. Write a short essay (on a separate sheet of paper) describing how you might find your position for both latitude ***and*** longitude. All you have available is a compass, a sextant (an instrument used to measure the angle of the sun and stars), and a clock. NO GPS in these days! Divide this question up by tackling the problem of latitude first. Then, do longitude.