

Map Basics

Geology

Mr. Traeger

Name: _____ Period: _____ Date: _____
 Partner's Name: _____

Purpose

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

Materials

- Google Earth®
- 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: **Never Eat Soggy Waffles**. Also give compass numbers in degrees.

4. 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? |
| | | |

Map Basics

Geology

Mr. Traeger

| | | |
|----------------------|---|--|
| 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 Google Earth® to find the following locations/coordinates. Fill in the blanks as necessary.

| Place Name/City | Latitude (+ = ° North/ - = ° South) | | | Longitude + = ° East/ - = ° West) | | |
|--|-------------------------------------|----------------|----------------|-----------------------------------|----------------|----------------|
| | <u>Degrees</u> | <u>Minutes</u> | <u>Seconds</u> | <u>Degrees</u> | <u>Minutes</u> | <u>Seconds</u> |
| 1. | + 34 | 11 | 34.96 | - 118 | 10 | 42.38 |
| 2. The Louvre Museum/ Paris, France | | | | | | |
| 3. | + 35 | 21 | 45.08 | + 138 | 43 | 49.91 |
| 4. | -33 | 51 | 25.23 | + 151 | 12 | 54.75 |
| 5. | + 40 | 41 | 21.68 | - 74 | 02 | 45.54 |
| 6. Half Dome, Yosemite NP, CA, USA | | | | | | |
| 7. | +29 | 58 | 44.22 | +31 | 08 | 04.51 |
| 8. Galapagos Islands, Ecuador | | | | | | |
| 9. Kilauea Crater, Hawaii, USA | | | | | | |
| 10. | +51 | 28 | 55.88 | 0 | 00 | 00.00 |
| 11. South Pole | | | | | | |

12. You walk 30 Km due south, 30 Km due east, and 30 Km due north. You find that you arrive at the same place where you started from. Where are you? (1° of latitude = 111 Km = 69 miles)