Name: _____

Coordinates of Awesome Geologic Formations

In part 1, use Google Earth to discover what is located at the following coordinates. In part 2, find the coordinates for the listed areas. To open Google Earth with latitude and longitudinal lines, click the "view" option and then select "Grid," or hit CTRL and L keys at the same time. Make sure you have your Parks and Recreation Areas and the Gallery options checked under the more section under the Layers on the left hand side of the screen. To make it easier, zoom in and out to see what features there are. In the bottom right side of Google Earth shows your altitude.

1. What prominent features are found at the following locations?
    a. 46°N, 122°W, zoom out to about 59 miles
    b. 36°N, 112°W, zoom out to about 35 miles
    c. 35°N, 109°W, zoom out to about 106 miles
    d. 44°N, 110°W, zoom out to about 300 miles
    e. 24°N, 77°W, zoom out to about 35 miles
    f. 32°27'14"N, 139°46'12"E
    g. 42°57'N, 122°06'W
    h. 48°47'N, 113°38'W, zoom out to about 1 miles
    i. 37°50'N, 119°33'W, zoom out to about 154 miles
    j. 35°01'30"N, 111°01'13"W
2. What are the coordinates for each of the following locations?
    a. Giants Causeway, Northern Ireland
    b. Eye of the Sahara, Mauritania or Richot Structure
    c. Monument Valley, AZ
    d. The Great Blue Hole, Belize
    e. Victoria Falls, Zimbabwe
    f. Moraine Lake, Canada
    g. Moeraki Boulders Beach, New Zealand
    h. Antelope Canyon, USA
    i. Valley of the Moon, Argentina or Mirador Valle Encantado
    j. Salar De Uyuni, Bolivia
3. Why would it be important to be minutes and seconds not just degrees when giving locations on a map?

Answer Key

1. What prominent features are found at the following locations?
    a. **46°N, 122°W, zoom out to about 59 miles**
        i. Mt. St. Helens
    b. **36°N, 112°W, zoom out to about 35 miles**
        i. Grand Canyon
    c. **35°N, 109°W, zoom out to about 106 miles**
        i. Petrified forest
    d. **44°N, 110°W, zoom out to about 300 miles**
        i. Yellowstone
    e. **24°N, 77°W, zoom out to about 35 miles**
        i. Johnny Depp Island
    f. **32°27'14"N, 139°46'12"E**
        i. Aogashima Island
    g. **42°57'N, 122°06'W**
        i. Crater Lake
    h. **48°47'N, 113°38'W, zoom out to about 1 miles**
        i. Glacier National Park
    i. **37°50'N, 119°33'W, zoom out to about 154 miles**
        i. Yosemite National Park
    j. **35°01'30"N, 111°01'13"W**
        i. Meteor Crater
2. What are the coordinates for each of the following locations?
    a. **Giants Causeway, Northern Ireland**
        i. 55°14'31"N, 6°30'54"W
    b. **Eye of the Sahara, Mauritania or Richot Structure**
        i. 21°07'N, 11°19'59"W
    c. **Monument Valley, AZ**
        i. 36°59'N, 110°05'W
    d. **The Great Blue Hole, Belize**
        i. 17°18'44"N, 87°32'2"W
    e. **Victoria Falls, Zimbabwe**
        i. 17°55'30"S, 25°51'36"E
    f. **Moraine Lake, Canada**
        i. 51°19'30"N, 116°10'12"W
    g. **Moeraki Boulders Beach, New Zealand**
        i. 45°20'42"S, 170°49'46"E
    h. **Antelope Canyon, USA**
        i. 36°51'54"S, 111°22'12"W
    i. **Valley of the Moon, Argentina or Mirador Valle Encantado**
        i. 30°41'24"S, 68°30'W
    j. **Salar De Uyuni, Bolivia**
        i. 20°13'S, 67°42'W
3. **Pick one of the areas from problem 1 and describe the location.**
    a. Varies
4. **Pick one of the areas from problem 2 and describe the location.**
    a. Varies
5. **Why would it be important to be minutes and seconds not just degrees when giving locations on a map?**
    a. Part of this assignment was to show the importance of minutes and seconds. If you just give the degrees then you are actually looking at a very huge area. If one give the minutes and then even the seconds you can pinpoint an exact location.

Teacher Reflection, Instructions, and Procedures

- The purpose of this assignment is for students to get practice understanding what coordinates are. As they practice this, they also get a dose of awesome geologic formations that they might not ever get a chance to hear or read about again, so this is good exposure.
- I first have the students read the first section on this website and then we discuss the vocabulary words to make sure they understand them.
    - http://http://earthscience.xyz/Maps
- I give them this paper and a link to a Google doc that contains the assignment. I don't make them use the Google doc, but I have found that if they copy and paste the coordinates, they are less likely to make mistakes typing it in and not get too frustrated. You can click on this link and it will take you to the Google Doc version.

  Link will be provided after purchase

- In section 1 the struggle is to find out what object I am actually wanting them to locate. I added instructions about zooming out on a few to a specific distance so that they have an easier time. Make sure that they understand that they can find their altitude by looking at the lower left of Google Earth.
- In section 2, I accept answers that are just the degrees and minutes, however after answering question 3 they should understand that if the object they are looking for is relatively small, then using seconds would be the best solution.
- After students are all done with this activity I show them a visual presentation of some of these locations and discuss some of the cool geology that has happened there. You can show this presentation to your students at the following link.
    - http://http://earthscience.xyz/PointsOfAwesomeGeology
- You can download Google Earth Pro now for free. It is great. If you use the online version of Google Earth, then you won't be able to view the Earth with latitudinal and longitudinal lines. It isn't possible as of the time I published this document. I hope that someday they do get the coordinate lines as this helps solidify comprehension of latitude and longitude. Also the problem as of this date with the online version is that they don't have as many layers and points of interest.
- I let my students divide and conquer at getting this assignment done. They can work at their table groups. Even splitting up the work it can take the full class time and sometimes spill into the next day, which is fine for me.