**Museum Field Trip**

*This experience is designed to help you consolidate the “big picture” of the introductory geology course. It is meant to be carried out towards the end of the course.*

*For this experience you will visit the museum of natural history, Smithsonian Institution.*

*http://naturalhistory.si.edu/*

*Your visit will start on the second floor, entering the Harry Winston Gallery and walk to the next room:*

**The National Gem Collection**

1. Examine the large Topaz crystals in the central cases, what are the large bubbles in the

crystals?

2. Explain how a crystal becomes a gemstone.

3. How many types of minerals are cut into gemstones?

4. How are they weighted? a. Where does this term come from?

5. DIAMONDS—list how colored diamonds become colored.

6. Take a few minutes to examine the jewels showcased in this room. Describe your favorite Jewel (make a sketch or take a picture!): What is the main gemstone? How many carats does it weigh? Is it set with other gems? What are they?

*Proceed to the* **Eberly Mineral Gallery**

 *follow the wall of minerals***.**

*The Gallery is organized by themes regarding minerals, the themes are:*

**Shape, Color, Diversity, Amazing Gems, Growth and Pegmatites.**

7. Choose one of the themes and in one paragraph, summarize the main point if the theme, describe the arrangement of samples. Include a photo of the display.

8. Take a picture – or make a sketch – of your favorite mineral—with its chemical composition. What group does it belong to?

*Go around the wall from the Arkansas Quartz and find* **SILICATE FAMILY**  find the zeolites. Zeolites are important silicates

9. What is their structure (chain, sheets, 3Dframework?)

10. Why are zeolites so important?

Once you leave the mineral gallery you will enter the **MINE exhibit.** Choose one of the mines: Morefield, Bisbee or Franklin (choose this one if you like fluorenscent minerals). For the mine you choose describe:
11. How did the mine formed?

12. What mineral is mined there**?**

*Exit the MINE exhibit and you will enter in* **the Rock Gallery.**

13. You are now in a large room with a window facing the US Capitol. Here the displays

are organized in 4 themes: Rocks Made to order, Rocks tell stories, Water recycle

rocks and Rocks build city. Choose one theme and briefly explain about it, make either a sketch or take a picture.

14. The gallery continues into the igneous and metamorphic rocks in display. Can you find one of these rocks containing garnets? Take a picture of the specimen!

**Plate Tectonics and Earthquakes section**

After the rock exhibit, you will find a seating area where a short movie on plate tectonics plays continuously. You can watch it (it is very good). And then progress to the volcano display, after you will enter the plate tectonics section.

*To start, fine the display with volcanic activity at divergent plate boundaries. The displays are on the sides, at the center is a huge model of the lithosphere with the plate boundaries.*

15. What specimen in this display come from the East Pacific Rise?

16. How did it form?

*Beyond the Seafloor spreading exhibit is the convergent boundary volcanism.*

17. Look for the “water in” “water out” display. What does this refer to? How does water affect

volcanic eruptions?

*Continue to the* **Seismology wall***. Watch the seismographs recording earthquakes and thevideo display that is updated every 10 minutes.*

You will notice a large granite block with bulls eye targets. Tap on the targets: there is a 3-component set of sensor in the block that record the energy you released by tapping the rock.

18. Describe what you see on the monitor as you tap on top with increasing strength.

19 . Now try to hit the block on different sides, but use the same strength every time, does the seismogram change shape?

20. Now stand near the block and jump. Look at the monitor. Then step a few feet from the block and jump again! Repeat by jumping at greater distance. How does the signal change?

**Meteorites**

21. Proceed to next exhibit, to the meteorites. Find the tiny piece of Mars and touch it! How do we know it is from Mars?

*The activity ends here, but the Museum has so many more interesting things to look at, continue to explore!!!!*