

The Legacy of Apollo: Geology of the Moon

Geology 1P

Mr. Traeger

Name: _____ Period: _____ Date: _____

Purpose

The purpose of this activity is to use the Google Moon® and the Lunar and Planetary Institute Apollo Mission website to discover more about the Apollo moon landings and the geology that was investigated during our trips to the Moon.

Procedure

Go through the Apollo mission website and the Google Moon® website linked from the Internet Investigations page on the class website and find the answers to the following questions.

Part 1: Lunar Geology Basics

1. Load Google Moon®. Look at the images shown. How does the side of the moon facing the earth compare to the side of the moon facing away from the earth? How might the differential density of lunar crust (mascons) explain why only one side of the moon always faces Earth?
2. Go to Google Moon® and click on the Visible tab. Dark areas are called maria and lighter areas are called highlands. How are these surface features different in terms of their geological origins?
3. Go to Google Moon® and click on the Elevation tab. Where are the lowest areas of elevation? Where are the highest areas of elevation?
4. What are rilles? How are they similar to lava tubes formed by Hawaiian volcanoes?
5. Go to Google Moon® and click on the Elevation tab. Where do you see the greatest evidence of rilles? Are they in the maria or the highlands? Why might this be so?
6. What is basalt? What areas of the moon do you find basalt at?
7. What is anorthosite? What areas of the moon do you find anorthosite at?
8. What is breccia? What areas of the moon do you find breccia at?
9. What is regolith and how does it form? What is the most likely area of the moon to find it? Look at the sample under the microscope and describe what you see.
10. How many impact craters would you estimate cover the surface of the moon?
11. What are lunar rays and how are they formed? How many of the craters would you estimate exhibit ray patterns?

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Part 2: Apollo Missions and Discoveries

1. What was the initial reason for the Apollo missions going to the moon? What were the motives of the Apollo missions towards the end of the program?

2. Pick one Apollo Mission of your choosing in addition to Apollo 17 to research. Apollo 17 is important because it was the first (and last) mission with a Ph.D. geologist named Harrison Schmitt aboard. Answer the following about each mission landing.

Mission	Mission Overview	Landing Site Geology	Surface Operations Conducted	Science Experiments Conducted	Lunar Samples Retrieved
<u>Apollo ?:</u> _____					
<u>Apollo 17</u>					

3. Why is Apollo 13 not listed in Google Earth®?

4. If you were to design a mission going back to the moon, what would you choose as your mission objective(s)? How would you find funding for your mission given that President Obama just canceled the Constellation Program to take the United States back to the Moon? Write this in essay format on a separate piece of paper and attach.