

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 image shown. Is the whole surface of the moon shown as seen from the Earth? If not, how might the differential density of lunar crust (mascons) explain this?
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?
10. How many impact craters would you estimate cover the side of the moon you are looking at?
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. Answer the following about each mission landing.

Mission	Mission Overview	Landing Site Geology	Surface Operations Conducted	Science Experiments Conducted	Lunar Samples Retrieved
<u>Apollo 11</u>					
<u>Apollo 12</u>					
<u>Apollo 14</u>					
<u>Apollo 15</u>					
<u>Apollo 16</u>					
<u>Apollo 17</u>					

3. Why is Apollo 13 not listed here?

4. If you were to design a mission going back to the moon, what would you choose as your mission objective? Why?