



crater:

a round or oval hole in the ground made by something that has fallen on it or by an explosion

Mars Rover Model Celebration – Lesson Plan

Introduction:

One of the new vocabulary words for this unit is “crater”. A crater is “a round or oval hole in the ground made by something that has fallen on it or by an explosion”. Crater also has a second meaning, “the open top part of a volcano”. In both cases, a crater is round (or oval) and has a depression or low part in the middle, and it is surrounded by higher crater walls.

Let’s look at a picture that will help us understand the meaning of “crater”. This picture shows a large crater on the moon. You can clearly see the depression in the soil where a meteorite hit the moon. You can also see the higher wall around the crater and the ejecta all around the outside of the crater. The ejecta is the material blown out of the crater hole on impact. If you look carefully at the picture you can see hundreds of smaller craters. There are even craters within craters. Craters can help scientists know what kinds of rocks and minerals are under the surface of a planet or moon.

Example:

You might wonder what happened to the meteors that cause craters. The meteors are moving very fast, so when they impact with a planet or moon, they break up into pieces. A meteor impact will also produce a lot of heat, so part of the meteor will actually melt. This is why you do not see large meteors still inside craters. Part of the meteor is still there, but in small pieces. Some of the meteor can be thrown out of the crater just like ejecta and will land far away.

Reflection:

I am going to read some sentences. If the description I give is one of a crater, I want you to put your thumbs up and say CRATER. If the description is not one of a crater, put your thumbs down and say JUST A HOLE.

- A person digs a very deep, round hole to build a fence. (thumbs down—just a hole)
- The rabbit hole was round and went very far under the tree. (thumbs down-just a hole)
- The fireworks malfunctioned, exploded, and blew a big, round hole in the soil. (thumbs up-crater)
- A large meteor hit the moon leaving a big hole. (thumbs up-crater)

Make it personal:

Think about your Mars Rover project. How might the craters on Mars impact your rover or your mission? Are craters good for your rover, a problem, or both? I will give you some time to consider these questions. When I tell you, turn and share your thoughts with your neighbor. Then, I will ask some of you to share your thinking. (Give students about 30 seconds to think before asking them to share. If necessary, give the students additional prompting, such as “Why might a crater be dangerous for your rover? What kinds of things would be good to look for near a crater?”)