

Moon Craters

Concept: Craters are formed by meteorites

Materials:

- large, rectangular box (at least 5 inches deep)
- dry sand
- marbles and golf balls

Thinking and Predicting Questions:

- What are craters? How are they formed?



What to do:

Fill the pan with sand. Smooth out the sand with your hand to create a flat surface. The sand should be about three inches deep. Hold a marble two or three feet above the sand and release. Try the same thing with the golf ball. Observe what happens.

What will happen:

The marble and golf ball will create craters in the sand.

Why this happens:

The marble and golf ball represent meteorites. When they crash into the surface of a planet, they force their way into the ground, pushing soil and rock out of their way. This creates a depression called a crater.

Safety:

Have students wear safety goggles if they're near the sand box. Grains of sand may fly out of the box when "meteorites" hit the sand. You don't want them to get in your students' eyes.

Discussion:

Why does the moon have more craters than Earth? (Atmosphere causes objects to burn up as they enter a planet. Because the moon has no atmosphere, more meteorites hit the ground.)

Are all craters the same size? Why not? (Different sized meteorites make different sized craters. Also, the speed at which it hits the planet has an affect as well.)

Name: _____

Making Our Own Moon Craters

Directions:

Fill a pan with dry sand. Smooth out the sand with your hand to create a flat surface. The sand should be about three inches deep. Hold a marble two or three feet above the sand and release. Try the same thing with a golf ball. Observe what happens.

Wear safety goggles so you don't get sand in your eyes!



What is the difference between a meteor and a meteorite?

Craters are all different sizes. Name two variables that could cause meteorites to form different sized craters.

Why does the Moon have more craters than the Earth?

Name: _____

Moon Craters: Vocabulary Match

- | | |
|---------------------|---|
| _____ 1. crater | a. an object made of rock or ice that flies through space and burns up when it enters a planet's atmosphere |
| _____ 2. meteor | b. an object made of rock or ice that lands on (or crashes into) the surface of a planet |
| _____ 3. meteorite | c. Object that orbits the Earth; It has many craters |
| _____ 4. comet | d. a bowl-shaped depression on a planet or moon |
| _____ 5. atmosphere | e. Air that surrounds a planet, causing objects to burn up as they enter a planet from space |
| _____ 6. moon | f. an object made of rock or ice that flies through space in an oval-shaped orbit |
| _____ 7. collision | g. What happens when two objects crash into each other |

Name: _____

Making Our Own Moon Craters - ANSWERS

Directions:

Fill the pan with sand. Smooth out the sand with your hand to create a flat surface. The sand should be about three inches deep. Hold a marble two or three feet above the sand and release. Try the same thing with the golf ball. Observe what happens.

Wear safety goggles so you don't get sand in your eyes!



What is the difference between a meteor and a meteorite?

A meteorite is an object made of rock or ice that crashes into the surface of a moon or planet. A meteor burns up when it enters a planet's atmosphere and never hits the ground.

Craters are all different sizes. Name two variables that could cause meteorites to form different sized craters.

The speed at which a meteorite is traveling and the size of the meteorite both affect the size of a crater.

Why does the Moon have more craters than the Earth?

The Moon has more craters than Earth because the Moon has no atmosphere. Most objects that enter Earth's surface burn up because of our atmosphere. The moon has no atmosphere, so more meteorites hit the ground.

Name: _____

Moon Craters: Vocabulary Match - **ANSWERS**

___**d**___ 1. crater

___**a**___ 2. meteor

___**b**___ 3. meteorite

___**f**___ 4. comet

___**e**___ 5. atmosphere

___**c**___ 6. moon

___**g**___ 7. collision

a. an object made of rock or ice that flies through space and burns up when it enters a planet's atmosphere

b. an object made of rock or ice that lands on (or crashes into) the surface of a planet

c. Object that orbits the Earth; It has many craters

d. a bowl-shaped depression on a planet or moon

e. Air that surrounds a planet, causing objects to burn up as they enter a planet from space

f. an object made of rock or ice that flies through space in an oval-shaped orbit

g. What happens when two objects crash into each other