



Junior at Home Moon Craters

Supplies

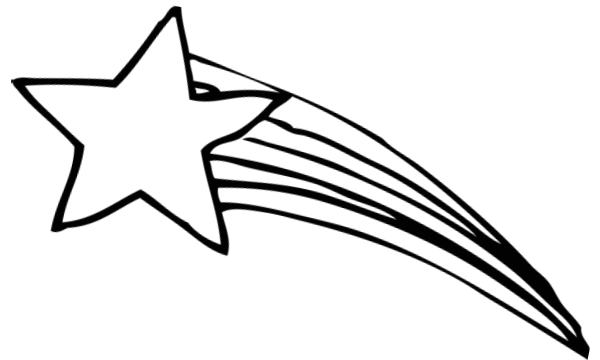
- A box or plastic bin, approximately 12x15 inches.
- Flour.
- Hot cocoa powder or other colored (non-white) powder.
- Marbles (or rocks) of various sizes, small enough to fit in the palm of your hand.

Scientific Concepts

Take a look at the [moon's surface](#). What are those circular patterns, and how did they get there?

Those are impact craters! They come from collisions between the moon and large space rocks called asteroids.

Some asteroids have elliptical orbits—long and skinny, like a squashed circle. This means that sometimes they cross the path of another object, like the moon.





Junior at Home Moon Craters

Instructions

1. Evenly distribute the flour into the box or bin. It should be between three quarters of an inch and an inch thick at minimum.
 2. Next, sprinkle the cocoa powder over the top of the flour. This layer should fully cover the flour, but doesn't need to be thick. These two layers together is your moon surface.
 3. Choose a medium to large marble (or rock). This is your asteroid!
 4. Make a prediction: What do you think will happen when the asteroid hits your "moon"?
 5. From a standing height, drop the asteroid into the flour. What do you notice? Are you surprised about where the flour ended up? Was your prediction correct?
- The long, thin lines that appear are called rays. They are a characteristic feature of impact craters, and can be longer or shorter depending on the manner of impact.
6. *Carefully* remove the marble and reset your moon surface by gently shaking the bin back and forth until the hole fills in. You may also need to add a little more cocoa powder.
 7. Next, choose a question to investigate! Maybe you want to know: what happens if the asteroid hits at an angle? Or: what happens if it hits at a higher or lower speed? Or: what manner of impact makes longer rays? Or come up with your own!

Virtual Troop Meeting Ideas



Text or voice chat. Have your Girl Scouts complete this activity on their own. Then, have everyone swap questions from part 7 with a partner. Each Girl Scout repeats the experiment with their partner's question. Then, compare results! Did both partners come to the same conclusion? Why or why not?

Photo share. Have everyone research something about asteroids or craters on their own and make a poster or other graphic about what they find. Share photos of the final results so that everyone can learn something!