



MOON CRATERS

EXPLORE!

How can you create a crater on the moon? Can you make different shapes and sizes of craters?

MATERIALS NEEDED

- Aluminum pie pan or cake pan
- Flour
- Rainbow sprinkles
- Cocoa powder
- Spoon or sifter
- Paper towels or newspaper
- 2–4 small rocks or balls of different sizes and shapes (impactors)

INSTRUCTIONS

1. Spread about an inch of flour into the pan. The flour represents part of the Moon's crust.
2. Add a layer of rainbow sprinkles on top of the flour. The sprinkles represent rocks and minerals buried under the surface of the Moon.
3. Add a thin layer of cocoa over the top by sprinkling it with a spoon or sifter. The cocoa represents the surface layer of the Moon.
4. Place your pan on the floor or flat surface where you can safely and easily drop a rock or ball into the pan. You may want to put down newspaper or paper towels under the pan to catch any of the materials that might spray out of the pan.
5. Simulate a rock impacting the Moon by holding a rock or ball above the pan and dropping it into the pan. Observe the pattern made by the ejected materials created by the impact (ejecta pattern rays). Did any of the sprinkles get ejected out of the crater?



6. Remove the rock or ball. What do you observe? Is the crater shallow or deep?
7. Try dropping different size rocks or balls from different angles and heights. How do the craters differ? What do you observe in the patterns of the ejected material?

QUESTIONS TO MAKE YOU WONDER

- How does the shape of the rock or ball affect the shape of the crater?
- How does the size of the rock or ball affect the size of the crater?
- How does the angle of impact affect the spray of materials?
- What do craters on the Moon look like?
- What is the largest crater on the Moon?
- Are there craters on the Earth?

HOW DOES THIS WORK?

Impact craters are formed when a meteorite strikes the surface of a moon or planet. Craters can be found throughout the solar system on all the terrestrial planets, on the Earth's Moon, and on most satellites of planets.

Impact craters are formed by the transfer of energy (kinetic energy) from a meteorite (moving mass) to a planet (stationary body).

CONTINUE EXPLORING

- Lunar Craters and NASA's Lunar Reconnaissance Orbiter – https://www.nisenet.org/sites/default/files/exsci_space_craters_info1.pdf
- Craters Across the Solar System – https://www.nisenet.org/sites/default/files/exsci_space_craters_info2.pdf
- Make a Moon Crater – <https://www.jpl.nasa.gov/edu/learn/project/make-a-moon-crater/>
- Exploring the Moon – <https://www.nasa.gov/stem-ed-resources/exploring-the-moon.html>
- What is an impact crater? – <https://spaceplace.nasa.gov/impact-crater/en/>
- Meteor Crater Arizona – <https://www.meteorite.com/meteor-crater/>