



GREATER CRATERS

Determine how craters form and what they can tell us about the object that made them.

Materials

- A large, shallow container
- Flour
- Cinnamon or cocoa powder
- 3 round objects (small, medium and large)
- Ruler
- Paper
- Pencil
- Sieve or sifter (optional)



Procedure

- Fill container $\frac{2}{3}$ full with flour. Gently shake or sift cinnamon or cocoa powder to create a thin layer on top of the flour. This activity may get messy, so set up your container in an area that's easy to clean.
- Take your smallest round object and drop it into the container from about 2 feet directly above the container. Measure the resulting crater with your ruler and record the data on your paper.
- Without removing the previous object, repeat the experiment with the other round objects you collected. Start with the medium sized object and then drop the largest object last. Measure the craters and record your data on your piece of paper.
- How did the objects change the surface of your container? How far did the powder spread from the object? Did the object create a specific shape on the surface of your container? Try changing up the height and direction of your falling objects to see how many different craters you can create.

Results

Larger objects create larger craters. The impact from the object pushes surface materials away from the crater in a unique starburst shape.

Why?

Impact craters are round, bowl-shaped holes formed when an object smashes into a surface. The appearance of impact craters is affected by the size and speed of the object, as well as what materials the impacted surface is made of.

Real impact craters are made when a meteorite crashes into a planet or moon. To make an impact crater on such a large solid object, a meteorite needs to be travelling extremely fast—many thousands of miles per hour! Some meteorites immediately vaporize when they hit the surface and create enormous shockwaves that melt and recrystallize rock. The Earth's moon is covered with impact craters. Impact craters are not unique to the Moon. They are found on all the terrestrial planets and on many moons of the outer planets. On Earth, impact craters are not as easily recognized because of weathering and erosion.

This activity was adapted from Space Buddies.