

# Craters – NISEnet

## Materials:

- 12-inch by 9-inch shallow container
- 3 lb white play sand
- Iron filings in container
- Whitener powder detergent (such as OxyClean™) and MDS sheet
- Safety goggles
- Marbles (3) in three sizes (small, medium, large)
- Angular gravel pieces (3) in three sizes (small, medium, large)
- Ultraviolet flashlight (optional)
- Tongs
- Magnetic applicator tool



## Resources:

<http://www.nisenet.org/catalog/exploring-solar-system-craters-2018> Activity guide, table sign, facilitator guide & info sheets. This activity requires preparing the materials beforehand.

<http://teacherlink.ed.usu.edu/tlnasa/units/PlanetaryGeology/7.pdf> This similar activity guide has a geometry extension for older students.

<https://spaceplace.nasa.gov/craters/en/> Explanation of why the moon has craters.

## Learning Goals:

- Studying the surface of a planet or moon can reveal its history and composition.
- Impact craters form when a meteorite collides with the surface of a moon or planet (or other body in space).
- Scientists use tools to find and observe craters and learn more about the geologic processes on planets, moons, asteroids, and other worlds.

## Steps:

1. Make some craters! Drop a marble from one meter (about 3 feet) above the sand mixture. What do you observe?
2. Now experiment by dropping more marbles and oddly shaped pebbles into the bucket. Do pebble craters look different from marble craters? Try dropping them from different heights and different angles, too!
3. (Optional) Use a special tool to make even more observations. Shine the UV light into the bucket. Do you see anything new?

**Reflection** (throughout): What do you know about craters? Where can you find craters? What planets or moons have craters?

**Relevance:** Why does the moon have so many more craters than Earth? What other ways are craters formed?