Meteor Shower

Turn your eyes to the sky tonight in hopes of spotting a meteor and explore crater formation to celebrate National Meteor Day.

Materials:

- Balls of different sizes and weights, such as marbles, pin-pong and tennis balls
- Aluminum foil
- Tray or bin with tall sides
- Flour
- Ruler

Prepare the materials.

1. Wrap the balls with aluminum foil to give the surfaces some texture. As you wrap, make sure you keep the shape as spherical as possible. These will be your meteors.
2. Place the tray or bin on a surface that is easy to clean and fill it with flour so there is a layer about 1" thick. This will be the surface of a planet or moon.
   Hint: If you don't have a tall-sided container or are worries about a mess inside, try this activity outside where flying flour will be easier to clean!

Explore crater formation.

3. From a set height, drop the meteor balls, one at a time, into the flour and observe what happens.
4. Use a ruler to measure the depth and diameter of the craters that were formed. Which balls created larger craters? Which balls created deeper craters?
5. Remove all the meteor balls and level out the flour. Drop the balls from different heights. Does this change the size of the craters?
6. Remove all the meteor balls and move the flour around to create a landscape with hills and valleys. Drop the balls on to the different formations. What happens to the craters?

How does it work?

Craters are excavated holes that occur on a planet's or moon's surface due to a meteorite impact. The force of the impact creates a shock wave that spreads through a solid surface, fracturing, and sometimes even melting rocks. The shape and size of a crater will depend on the surface, and the weight and velocity of the meteorite. Circular craters are most common, even though meteorites tend to have a spherical shape. Large and fast meteorites will form more prominent craters.

What's the difference?

Meteoroids, Meteors, Meteorites? They all lack an atmosphere, are made of minerals and rocks, and originate in space. So, what makes them different? Sometimes smaller asteroids, called meteoroids, have their orbits altered enough to bring them close to Earth.

When a meteoroid enters the Earth's atmosphere, it usually burns up and vaporizes, and the beautiful trail of light it creates is called a meteor. Meteor showers occur when many meteoroids strike the Earth all at once. Occasionally, a meteoroid withstands its entrance through the atmosphere and land on Earth's surface, which is then called a meteorite.