



# The Moon, Craters and Meteorites

## Activity

### Equipment

Large tray (minimum 4 centimetres deep), flour or sand, newspaper, plasticine (or else different-sized spherical objects, e.g. marbles, balls, beads), drinking chocolate powder, metre stick, cm rulers, sieve.

### Suggested class level

1st – 6th

### Preparation

This activity may be best done outdoors as it is quite messy!

### Background information

The dark circles which you can see on the Moon (with your naked eye, or better with binoculars) are craters. A crater is a hollow on the surface of the Moon.



These craters were formed millions of years ago when meteorites hit the Moon's surface. The impact of the meteorites caused the hollows to form and some of the surface to be thrown up and out around the crater. This is called ejecta (because it was ejected from the surface). Meteorites are bits of rock in space, which people think may have been left over from the start of the solar system (the planets and moons).



This activity models how these craters were formed.

### Trigger questions

Have you ever heard of a crater? (The children may know about a crater being the hollow at the top of a volcano – it is important to emphasise that the two types of crater are completely different).

*Do you know of any other type of crater?*

*Have you any idea what might cause them?*

*What happens if you drop something heavy onto soft sand on the beach?*

*Is it the same as dropping something onto a wooden floor?*

### Content strand

Forces, Environment

### Skills

Observing, measuring, investigating (what do we keep the same? What do we change?)



# The Moon, Craters and Meteorites

## Activity

### Cross-curricular links Activity

### History, Geography, Maths (measuring)

Spread the newspaper onto the floor, put the tray on the newspaper and put some flour onto the tray, until it is about 5 or 6 centimetres deep. Make the flour as smooth as possible without packing it down. Hold the sieve over the flour and put some drinking chocolate into it and shake it until you get a thin brown layer on the flour.

Make different sized balls from plasticine (these are the 'meteorites').

#### Younger children:

Drop one of the balls onto the moon's surface.

Draw what happens.

Drop a different ball onto the moon's surface.

Does it make a bigger or smaller crater?

Drop some more balls and draw a moon surface.

| HEIGHT OF BALL | SIZE OF CRATER |
|----------------|----------------|
|                |                |
|                |                |
|                |                |
|                |                |

| SIZE OF BALL | SIZE OF CRATER |
|--------------|----------------|
|              |                |
|              |                |
|              |                |
|              |                |

#### Older children:

1) Drop one ball and measure the diameter of the crater. Now drop the same ball from different heights; each time carefully remove the ball and measure the size of the crater. How do different heights change the size of the crater?

2) Drop different sized balls from the same height onto the flour. How do different balls change the size of the crater?

3) Does it make a difference if you measure to the furthest splash of flour from the impact?

(Tip: the easiest way of measuring the diameter of the ball is to put a ruler on either side of the ball and use another ruler to measure the distance between them).

4) Form conclusions about how to make craters of different sizes.

Some flour may fly up when the balls are dropped from a height. The children should stay at a safe distance so the flour does not get into their eyes.

Use 'meteorites' of different weight and note if there is any difference in the craters.

Throw the 'meteorites' (gently!) at different angles onto the flour and notice if the craters are any different shape.

Throw the 'meteorites' at different speeds to see if that makes any difference to the size of the crater.

What happens if we change the shape of the meteorite (easy if it is made of plasticine)?

What happens if the meteorite disintegrates on impact? Try mudballs instead of hard balls.

What happens if the surface is wet? Try dropping the meteorite onto dry, moist and wet surfaces.

### Safety

### Follow-up activity