

YOU COULD BE A...

# PLANETARY GEOLOGIST



**This sessions story**  
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<https://bit.ly/3EAUZFG>

**What did you think of the story?**

A planetary geologist is someone who studies how other planets (and moons and asteroids and comets and whatever else is floating out there) are made and change over time.

We like to study the Moon because we actually have samples of rocks and soils from the moon which helps planetary geologists understand it better, let's learn some more about it in our story.



**CREATIVITY**

**CURIOSITY**

**OBSERVANT**

**KEY SKILLS**

## MAKE A MOON CRATER

The moon is the easiest thing to spot in the night sky, on clear nights you can even see the craters on its surface. There are also lines coming from the craters, these are "ejecta rays" made from material blasted out of the crater. These craters formed when rocks or comets from space smashed into the surface of the Moon.

### PLANETARY GEOLOGIST KIT

- Trays
- Flour
- Cake sprinkles
- Cocoa
- Sieve
- Spoon
- Newspaper/table cover
- 2-3 small rocks of different sizes and shapes

### STEPS

**Create the Moon's crust:** Sprinkle 3cm of flour into your cake pan. The flour represents the part of the Moon's crust that an impactor (rock) will pulverize and blast out.

**Add in rocks and minerals:** Sprinkle a layer of cake sprinkles to represent rocks and minerals

buried under the surface. (You do not need to completely cover the flour layer.)

**Create the surface layer:** Add a thin third layer by sprinkling cocoa over the top with a spoon. You can also use a sieve for a more even coating. The cocoa represents the surface layer on the Moon.

**Secure the site:** Put down newspaper or a towel on a flat surface. Then place your tray on top. This will help protect your floor.

**Impact time!** Drop one of the small rocks it into the cake pan. Look at the "ejecta pattern" created by the impact. Did any of the sprinkles get ejected out of the crater? Gently remove the rock.

**Experiment:** Try dropping different size rocks from different angles and heights. How does the ejecta pattern differ from one impact to the next?

# BECOME AN ANCIENT PLANETARY GEOLOGIST

If you did the session in the library this is the at-home activity

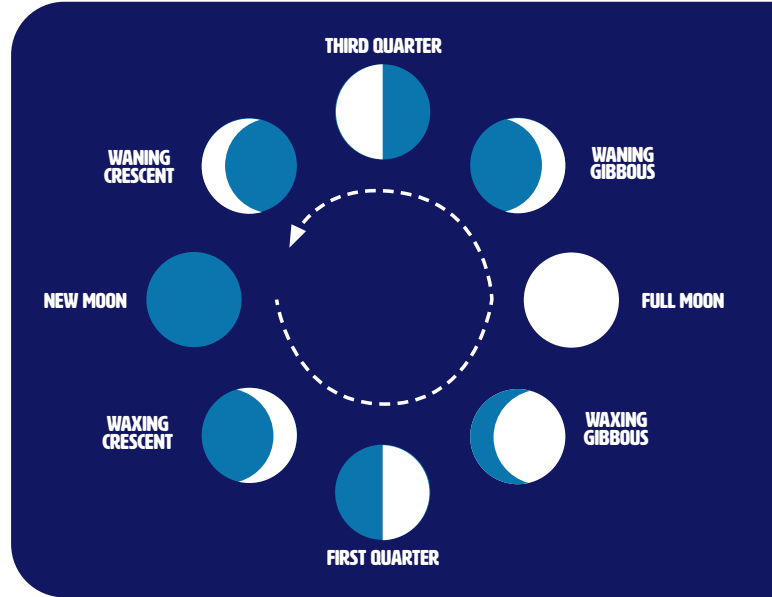
It takes the Moon 27.3 days to make a complete orbit around the Earth, but because the Earth is moving around the sun at the same time, it takes the moon 29.5 days to go through its eight different 'phases' – a lunar month. Let's see if you can spot all the phases over the next month!

## STUDY THE PHASES.

Have a look at the moon phases using the picture below, which is your favourite?

## IT'S MOONH TIME!

Every night for a month shade in what part of the moon you can see. After the month, see how many of the phases of the moon you can identify. It might be cloudy some nights so you can always look up on the internet and see what the phase is. Did you know humans were recorded to have been studying the phases of the moon as long ago as 4000 years ago.



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## HOW DID YOU FIND THE ACTIVITIES? DO YOU THINK YOU USED THE THREE SKILLS?

**Congratulations!** You have successfully completed your planetary geologist training but what if you wanted to explore even bigger and brighter objects in space? **Turn over to find out more...**

