How did the Moon get there?
Scientists still aren’t sure about how the Moon was made – but we can measure “Moon Quakes” to understand what it’s made of.

**Write a poem about how you think the Moon was made!**

**Moon fact**
The biggest moonquakes Apollo astronauts ever recorded registered 5.5 on the Richter scale and lasted for more than 10 minutes. As this is enough to damage buildings here on Earth, any future Moon base will need to be super-sturdy.

**Write your poem here!**
Why does the Moon look like that?

Giant impacts created oceans of molten rock that formed the Dark Maria.

Rings on the surface are formed by hundreds of impact craters.

Matter ejected from impacts creates long "rays" around some craters.
People first thought that the dark patches on the Moon were seas and oceans!

**What would you name the features of the Moon?**

*Moon fact*

The 8 kilometre deep South Pole-Aitken Basin stretches across nearly a quarter of the lunar surface. It is the largest and oldest impact basin on the Moon. The violent asteroid crash that made this crater was around a thousand times more explosive than the one that ravaged the dinosaurs on Earth 65 million years ago.

Name the parts of the Moon after your favourite places, people that you like, your pets, sports players... Whatever you like!
Why does the Moon appear to change shape?
As the Moon goes around the Earth (and both go around the Sun), different amounts of the Moon will be in the Earth’s shadow, creating the phases of the Moon.

Find the different phases in the word search!

C R E S C E N T P A
N O G U Z A Q N V G
Q F G N L R F E P I
B U W O F T S W G B
A L A X L H P M W B
H L N R Y U I O P O
N M E V T B N O M U
K O Y A S E D N F S
W O T G H J R K L M
S N V Q W E R W A X

Moon Fact
The Moon’s phases repeat every 29.5 days, but its orbit around the Earth only takes 27. Why? In that time, as our Moon moves around Earth, the Earth also moves around the Sun. Our Moon must travel a little farther in its path to make up for the added distance and complete its phase cycle.

New Moon
Crescent
Quarter
Full Moon
Gibbous
Sun
Earth
Wax
Wane
What are some of the different types of Moon?

- **Super Moon**
- **Blood Moon**
- **Blue Moon**
- **Harvest Moon**
People from all over the world have given names to the Moon linked to how it looks or the time of year. When the Moon is at its biggest, it’s called a Super Moon!

Here is a list of the names of the full moons of the year used by some Native American cultures – see what the moon is called during your birthday month!

<table>
<thead>
<tr>
<th>Month</th>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>January</td>
<td>Wolf Moon</td>
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<tr>
<td>February</td>
<td>Snow Moon</td>
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<tr>
<td>March</td>
<td>Worm Moon</td>
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<td>April</td>
<td>Pink Moon</td>
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<td>May</td>
<td>Flower Moon</td>
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<td>June</td>
<td>Strawberry Moon</td>
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<td>July</td>
<td>Buck Moon</td>
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<td>August</td>
<td>Sturgeon Moon</td>
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<td>September</td>
<td>Corn Moon</td>
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<td>October</td>
<td>Hunter’s Moon</td>
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<tr>
<td>November</td>
<td>Beaver Moon</td>
</tr>
<tr>
<td>December</td>
<td>Cold Moon</td>
</tr>
</tbody>
</table>

**Moon fact**

On average, the same spot on Earth only sees a solar eclipse for a few minutes roughly every 375 years.
How does the Moon affect the Earth?
Lots of different types of animals and plants use the light of the Moon and the rhythm of the tides to guide their behaviour.

**Design a flower that blooms in the light of the Moon!**

What would a Moon Flower look like?

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**Moon fact**

Tides are caused by the gravitational tug from both the Moon and Sun. The biggest tide in the world takes place in the Bay of Fundy in Canada. The difference between low and high tide there can be as much as 16.3 metres.
How did we get there?

The tiny lunar lander is the only part that got to the moon.

Stage 1 burned 20 tonnes a second.

The command module was just 3m long.

The Saturn V reached speeds of 28,000 km/h.
The entire trip to the Moon and back again took over eight days!

What would you pack to take with you on your journey?

Write a list or draw your Moon suitcase and its contents here!

Moon fact
An automatic landing system was guiding the Apollo 11 astronauts on their final descent to the Moon. But Armstrong noticed it was sending them towards a boulder-covered crater. He quickly took manual control to take them safely to a flat area. When they finally landed, there was only 30 seconds worth of fuel left.
How do we know that we went there?

THINGS LEFT ON THE MOON

ASTRONAUTS BROUGHT BACK LUNAR ROCKS

REFLECTORS INSTALLED ON THE SURFACE

IOP My Moon Adventure A4.indd 14
24/06/2019 10:46
Astronauts left lots of things behind on the Moon – including their footprints which could be there for millions of years!

**What would you leave behind to show that you’d been there?**

**Moon fact**
With a powerful telescope you can spot the remnants of the Apollo missions yourself.

What would you leave behind on the Moon for future astronauts to see?
What’s it like to be an astronaut?

BRING YOUR OWN AIR SUPPLY

JUMP 6-TIMES HIGHER

EXTREMES OF TEMPERATURE
Astronauts have to carry everything they need to stay alive on the Moon. What would you add to a space suit to help you explore the Moon?

**What will you add to the space suit to help you?**

Moon fact

The Moon buggies brought by Apollo 15, 16 and 17 were too big to fit in the Saturn V (five) rocket, so engineers designed them to fold in half. Astronauts travelled a total of 88km across the Moon’s surface in these vehicles.

*Draw and colour in!*
How could we live on the Moon?

APOLLO PROPERTIES

POLAR REGION
- Constant solar power
- Ice for water, fuel and air

NEAR SIDE
- Stunning Earth views
- Closer to home

FAR SIDE
- Get away from it all
- Radio silence
One day, there might be a permanent base for people on the Moon!

**What would your Moon-home look like?**

Moon fact
Apollo 17 astronauts Eugene Cernan and Harrison Schmitt hold the record for the longest time on the Moon – 75 hours.
What next for humans on the Moon?

- Permanent settlement
- Mining
- Fuel
- Space tourism
- Orbiting space base
- Base for further exploration
In the future, there might be tourists visiting the Moon or we might be using it as a launchpad for exploring Mars and beyond!

**Design a flag to celebrate the 50th anniversary of the first people to walk on the Moon**

![Flag Drawing]

**Moon fact**
The most recent mission to land on the Moon was the first by a non-profit organisation: SpaceIL. This Israeli spacecraft crash landed on 11 April 2019 after an engine failure during descent.

What will your flag look like?
Colour in!
To find out more about the Moon, download free resources and fun activities for the whole family, visit:

iop.org/moon