

# The Movement of the Moon



# The Moon

Why can we see the Moon in the sky at night?

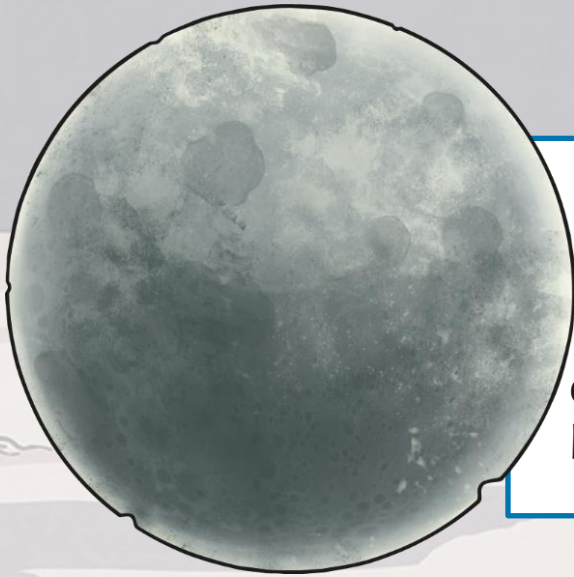
Why does the Moon look different at certain times?

Can the Moon ever be seen in the day?

Talk about it



# What Is the Moon?



Earth's moon is not a planet but is a **satellite** which orbits Earth. It is around a quarter of the size of Earth, with a diameter of 3,476km.

Scientists aren't sure exactly how the Moon was formed, although the main theory is that around 4.5 billion years ago, a body the size of Mars crashed in to Earth. The debris from this crash is believed to have formed the Moon.

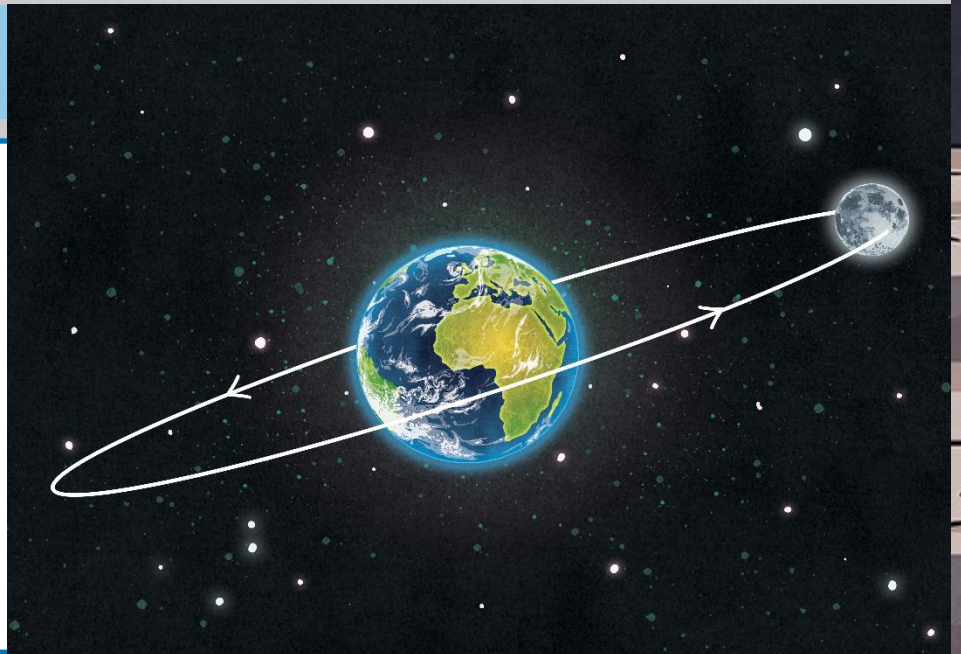
**satellite** – A body in space that orbits a planet.

The Moon has a thick outer layer of hard rock and is covered in regolith, Moon soil.

# The Movement of the Moon - Orbit

The Moon orbits the Earth once every 27.3 days.

The Moon orbits the Earth in an oval-shaped path called an ellipse. Because of this shape, the Moon is sometimes nearer and sometimes further away from Earth. The range of distance is from 364,397 km to 406,731 km.



# The Movement of the Moon - Rotation

Just like the Earth, the Moon rotates on its axis. This rotation is anticlockwise, just like the Earth's.

It takes 28 days for the Moon to rotate once.

Because the Moon spins and orbits at the same rate of time, it appears to be still from Earth. Scientists call this 'synchronous rotation'. The word 'synchronise' means that things happen at the same time.



# The Far Side of the Moon

The Earth and the Moon both rotate for the same length of time. This is called tidal locking. Because of this tidal locking, we only ever see one side of the Moon from Earth.

With a partner, try acting out tidal locking. One of you will be the Earth and the other will be the Moon.

Face each other. The 'Earth' should turn round slowly. The 'Moon' should walk round the 'Earth' at the same speed that the 'Earth' is spinning.

Keep facing each other.



# The Far Side of the Moon

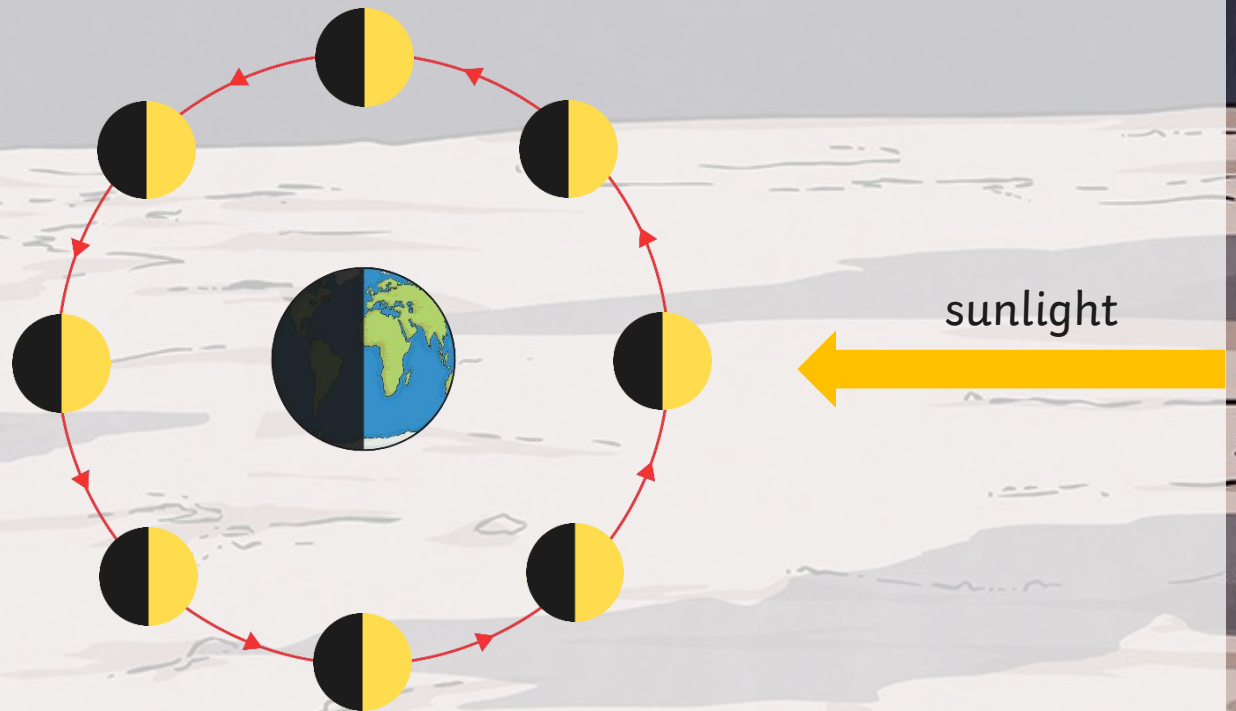
The side of the Moon we can see is called the near side. The other side of the Moon, the side we can't see, is called the far side (although people often refer to it as the dark side of the moon, this is not accurate as there is no side of the Moon which is constantly in darkness). In 1959, the Russian spacecraft Luna 3 took the first photographs of the far side of the Moon. Until that time, no one knew what it looked like.

The far side of the Moon is very different to the near side. It is covered in craters from meteors that have crashed into it.



# The Shape of the Moon

At various times in a month, the Moon looks different. This is because as the Moon rotates round the Earth, the Sun lights up different parts of it.



# Waxing and Waning

The Moon can be described as either waxing or waning. This refers to the amount of Moon we see on sequential days.

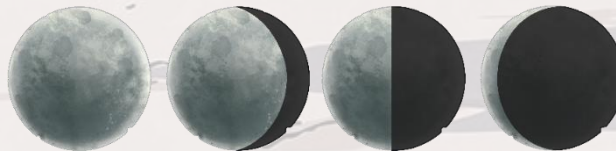
When we are gradually seeing more of the Moon over a number of days, this is called waxing.

waxing



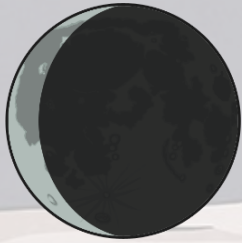
When we are gradually seeing less of the Moon over a number of days, this is called waning.

waning

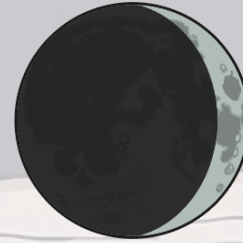


# Crescent and Gibbous

A crescent moon is when we can only see a crescent-shaped area of the Moon.



waning crescent moon



waxing crescent moon

A gibbous moon is when a crescent-shaped area of the Moon cannot be seen.



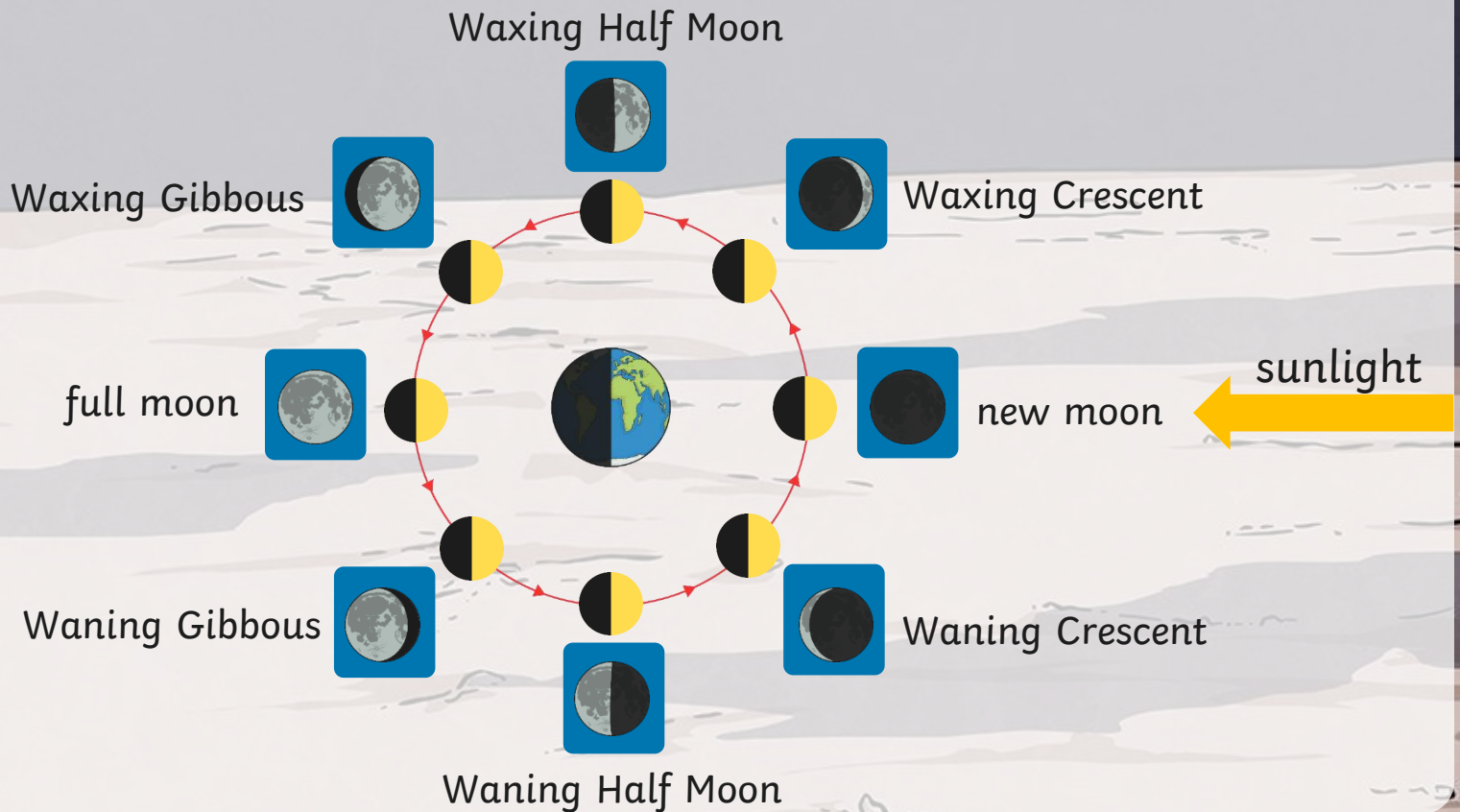
waning gibbous moon



waxing gibbous moon

# Phases of the Moon

The Moon can also be described as a new moon (when none of it is visible from the Earth), half-moon and full moon.



# What Can You Remember?

Can you guess the missing words?

The Moon orbits the Earth once every 27.3 days.

When we can gradually see more of the Moon, it is called waxing.

When we can gradually see less of the Moon, it is called waning.

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