



# How is our Solar System structured?



## Movement of the Planets

As the Sun is the heaviest object in our solar system, all the other planets orbit around it.

The Sun's gravitational force keeps all the planets in orbit.

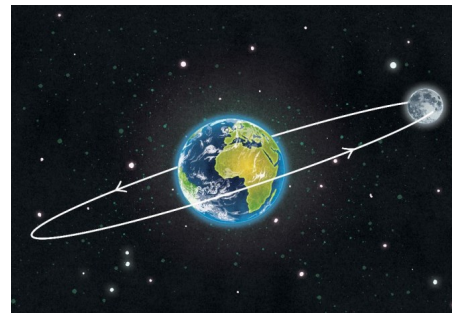
In addition, each planet also rotates on its own axis.

## Movement of the Moon

Earth's moon is not a planet but is a satellite which orbits Earth. The Moon orbits the Earth once every 27.3 days.

The Moon orbits the Earth in an oval-shaped path called an ellipse.

Just like the Earth, the Moon rotates on its axis. It takes 28 days for the moon to rotate once.



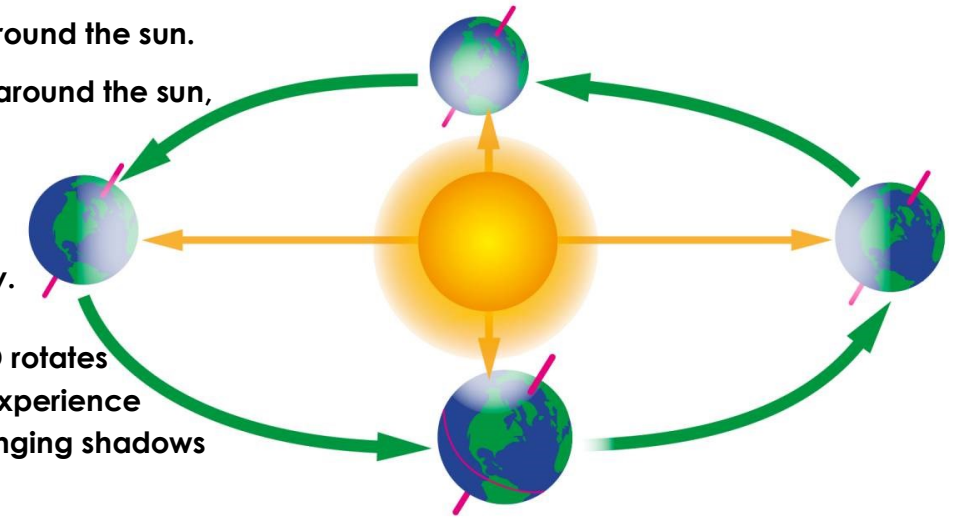
## Earth's movement around the Sun

The Earth's orbit makes a circle around the sun.

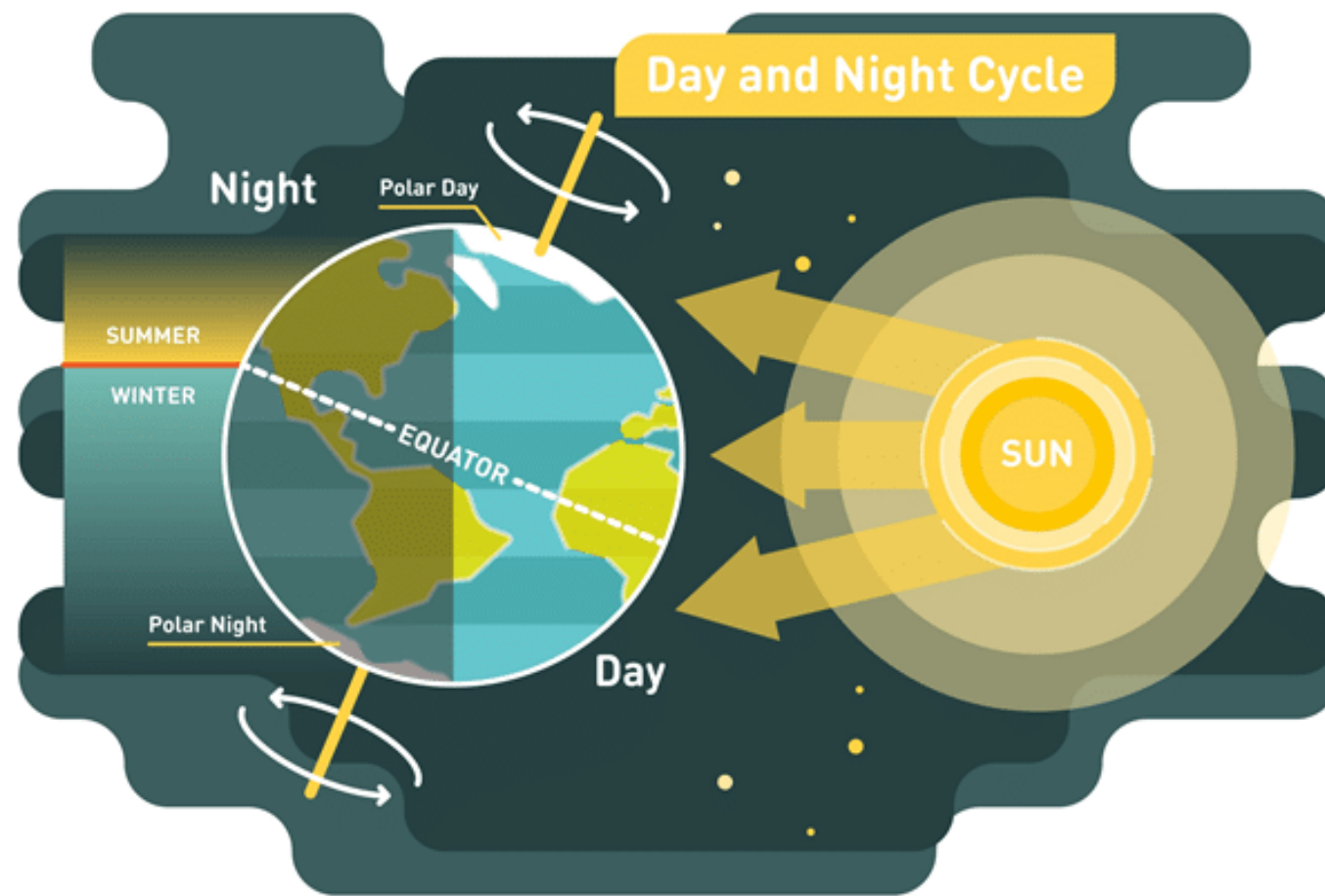
At the same time the Earth orbits around the sun, it also spins.

Earth orbits the sun once a year and rotates on its axis once a day.

Since the Earth orbits the sun AND rotates on its axis at the same time, we experience seasons, day and night, and changing shadows throughout the day.



- 1947 - First animals sent to space
- 1949 - First monkey sent to space
- 1957 - First dog orbited the Earth
- 1961 - Yuri Gagarin, first man in space
- 1963 - Valentina Tereshkova, first woman in space
- 1969 - Neil Armstrong and Buzz Aldrin landed on the moon
- 1991 - Helen Sharman, first British astronaut in space
- 2015 - Tim Peake visited the International Space
- 2030-2040 - Plans to send astronauts to Mars



## Day and Night

Earth rotates on an imaginary line called an axis.

Daytime = your part of the Earth is facing the sun.

Earth rotates, you move away from the sun.

For you, this is now night time, but for the other side of the planet, day has just begun.

The Earth rotates on its axis once every 24 hours.

<b>planet</b>	a celestial body that orbits a star
<b>Solar System</b>	consists of the Sun and everything that orbits, or travels around, the Sun
<b>orbit</b>	the path of an object around a particular
<b>gravitational force</b>	a pulling force that works across space
<b>axis</b>	an imaginary line an object turns around
<b>rotate</b>	to circle around a centre point
<b>Northern Hemisphere</b>	the section of the Earth that is north of the Equator
<b>Southern Hemisphere</b>	the section of the Earth that is south of the Equator
<b>Equator</b>	an imaginary line around the Earth that goes exactly midway between the North Pole and the South Pole and divides it into two equal halves, the Northern Hemisphere and the Southern Hemisphere
<b>the Sun</b>	the star at the centre of the solar system
<b>moon</b>	a large natural object that orbits, or travels around, Earth
<b>spherical body</b>	the flat, low-lying plain that sometimes forms at the mouth of a river from deposits of sediments

## Retrieve

1. What do all of the planets **orbit** around?
2. What is each **planet** rotating on?
3. Earth's **moon** is not a planet - what is it?
4. How often does the **moon** orbit the **Earth**? How long does it take for the **moon** to rotate once?
5. How often does the **Earth** orbit the **Sun**? How often does it rotate on its **axis**?
6. Why do we experience seasons, day and night?
7. What does the **Earth** rotate on?
8. What is facing the Sun during **daytime**? What happens as the **Earth** rotates?
9. What do we call each 24-hour period?
10. Who was the first man in space?
11. When did **Neil Armstrong and Buzz Aldrin** land on the **moon**?

## Dig Deeper

### Night and Day

- Write a paragraph explaining how we get **night** and **day** on **Earth**.

### Planets and the Earth

- Work out the distance of each **planet** from **the Sun** in miles, kilometres and metres.
- Choose a **planet** to research and write a 'Planet Profile'.
- Create a poster showing the names and relative sizes of the **planets** in **the solar system**.

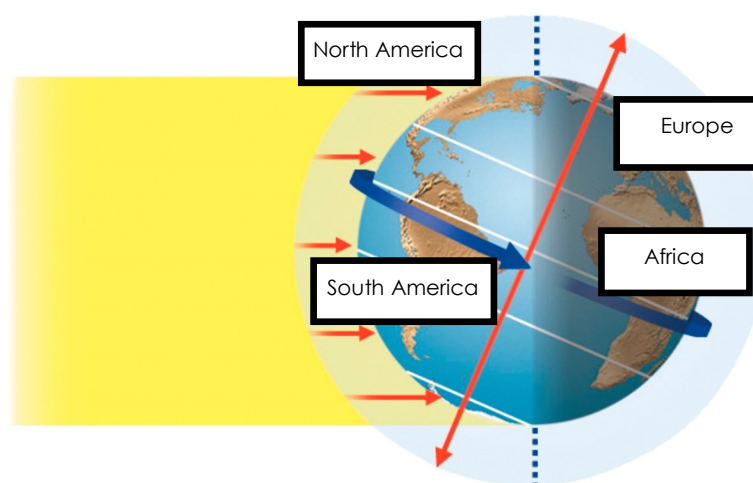
### The Moon

- Write a fact file on Neil Armstrong or another famous **astronaut**.
- Keep a 'Sky at Night' journal for a whole week. Write about everything you can see in the sky. You could draw a picture of the **moon** every night. Does it change over the course of the week?
- Write a newspaper report about the first **moon** landing.

### Space Travel

- Find out and write down 10 amazing facts about **space travel**.
- Create a timeline of **space travel** and exploration events.

## Apply



In this diagram, which continents are experiencing daytime and which continents are experiencing night-time?

How do you know this?

What vocabulary can help you to explain this?

## Create

- Create a painting or drawing of a space scene using your choice of materials
- Make a rocket with a parachute to aid re-entry.
- Create a space mobile to hang in the classroom.
- Create a space-themed board or card game and teach friends or family members how to play.

