# Science Knowledge Organiser

# Year 5 Term 2

| Earth and Space | Year 5 | Main Foci: Physics |
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## What should I already know from Years 3 and 4?

- We have four seasons (autumn, winter, spring and summer).
- The Sun is a source of light but the Moon is not.
- Know that a shadow is caused when an object blocks light from passing through it.
- To know the history of space travel.
- The properties of a sphere.

## Vocabulary

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| asteroid | a rock that **orbits** the Sun in a belt between Mars and Jupiter |
| axis | an imaginary line through the middle of something |
| comet | a bright object with a long tail that travels around the Sun |
| galaxy | an extremely large group of stars and planets. Our galaxy is called the Milky Way. |
| gravity | the force which causes things to drop to the ground |
| leap year | a year which has 366 days. The extra day is the 29th February. There is a leap year every four years |
| meteorite | a rock from outer space that has landed on Earth |
| orbit | the curved path in space that is followed by an object going round and round a planet, moon, or star |
| planet | a large, round object in space that moves around a star |
| shadow | a dark shape on a surface that is made when something stands between a light and the surface |
| Solar System | the Sun and all the planets that go round it |
| sphere | an object that is round in shape like a ball |
| spin | turns quickly around a central point |
| star | a large ball of burning gas in space |
| time zones | one of the areas into which the world is divided where the time is calculated as being a particular number of hours behind or ahead of GMT (Greenwich Mean Time) |
| universe | the whole of space and all the stars, planets, and other forms of matter and energy in it |

## What will I know by the end of the unit?

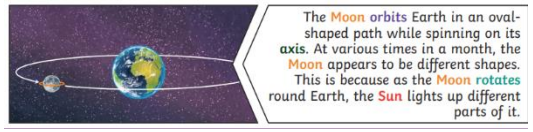
### Are the Earth, Sun and Moon linked? (1)

The movement of the Earth, and other planets, is relative to the Sun in our Solar System

Recognise that the Sun is a star at the centre of our Solar System.

Know that planets orbit the Sun due to its gravitational force.

Understand the difference between the inner and outer solar system




### What causes day and night? (2)

The Earth rotates on its axis anti-clockwise and makes a complete rotation over 24 hours (a day).

This makes it appear as the Sun moves through the sky but the Earth's rotation causes day and night.

Different parts of the Earth experience daylight at different times - this means that it is morning, afternoon and night in different places. This is also the reason why we have time zones.

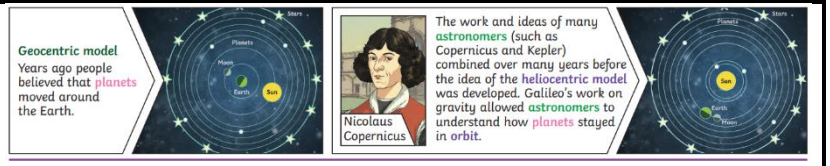
Because of the Earth's tilt, the poles experience 24 hours of sunlight in the summer, and very few hours of sunlight in the winter.

As the Earth rotates, shadows that are formed change in size and orientation.

### Is the Sun at the centre of our Solar System? (3)

There are three models of the solar system: geocentric, heliocentric and a modern model of what we know now.

That theory on how our Solar System works has changed over time.




### Does the Moon move? (4)

The Moon orbits the Earth anticlockwise and takes approximately 28 days.

The Moon spins once on its axis every time it orbits Earth. This means that we only see one side of the Moon.

The Moon has different phases depending on where it is in its orbit.

The Moon's gravity causes high and low tides.

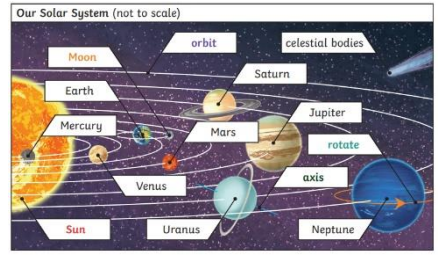
### What is the Solar System? (5)

There are 8 planets in our Solar System (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune). Pluto is a dwarf planet.

They all orbit the Sun, which is a star, and they all have moons.

The first four planets are relatively small and rocky, while the four outer planets are gas giants (Jupiter and Saturn) or ice giants (Uranus and Neptune).

There are also asteroids, meteoroids and comets in the Solar System.

The Solar System is in a galaxy called the Milky Way.

The galaxy is in the universe.