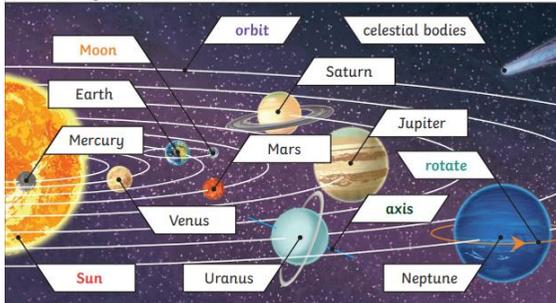


## Out of this World Knowledge Organiser Year 5 Spring Term

### What is in our solar system?

The **solar system** consists of the sun and everything that orbits, or travels around, the sun. This includes the eight planets and their moons, dwarf planets, and countless asteroids, comets, and other small, icy objects. However, even with all these things, most of the **solar system** is empty space.

Our Solar System (not to scale)



### Timeline of events

1947	The first animals (fruit flies) were sent into space.
1949	The first monkey was sent into space.
October 1957	The Russians sent the first satellite into space called Sputnik.
November 1957	The Russians sent the first dog into space. She was the first animal to orbit the Earth.
1959	The Russians and the Americans were racing to see who would be the first nation to send a spacecraft to the moon.
1961	The Russian, Yuri Gagarin become the first person in space.
1963	Valentina Tereshkova was the first woman in space.
1966	A robot spacecraft was sent to the moon to see if it could land safely.
1969	Neil Armstrong and Buzz Aldrin land on the moon.
1973	A Russian probe is sent to Mars.
1991	Helen Sharman won a competition to be the first British astronaut in space.
2001	On 28th April, American millionaire Dennis Tito became the first space tourist in a Russian spacecraft. He paid 20 million dollars for the privilege!
2003	In mid-2003, the 'Nasa Mars Exploration Rover Mission' was launched. This space mission involved two rovers, Spirit and Opportunity. The rovers were given the task of exploring Mars and sending any data back to Earth.

### Vocabulary

<b>Star</b>	A burning mass of gas that makes heat and light.
<b>Planet</b>	An object which orbits a star and does not produce its own light.
<b>Gravity</b>	The force that attracts an object towards a larger object.
<b>Solar system</b>	A star with objects such as planets revolving around them.
<b>Satellite</b>	An object, either natural or man-made, which orbits around a planet.
<b>Asteroid</b>	Irregular shaped rock that orbits the sun.
<b>comet</b>	A mass of ice and dust that has a long luminous tail of gas.
<b>NASA</b>	The National Aeronautics and Space Administration agency responsible for the exploration of space.
<b>Astronomy</b>	The branch of science that investigates space and the physical universe.
<b>Universe</b>	All of space and everything inside it.
<b>Orbit</b>	To move in a regular repeating curved path around another object.
<b>moon</b>	A natural satellite which orbits Earth or another planet.
<b>Rotate</b>	To spin on its own axis.
<b>Space station</b>	These are bases which orbit the

**Planets in our solar system**

The largest planet in the solar system is Jupiter, followed by Saturn, Uranus, Neptune, Earth, Venus, Mars with the smallest being Mercury.

Mercury, Venus, Earth and Mars are rocky planets. They are mostly made up of metal and rocks.

Jupiter, Saturn, Uranus and Neptune are mostly made up of gases (helium and hydrogen) although they do have cores made of rock and metal.



**Did you know?**

Jupiter, the largest planet in our solar system, has 63 moons.

As the Moon orbits the Earth, the Moon's gravity pulls on the sea, giving us the tides.

The Sun is a star – a massive ball of exploding gas. It measures about 1.4 million kilometres.

2004	The first privately funded flights into space.
2015	Tim Peak becomes the first British person to visit the International Space station.
2019	China lands the first space craft on the far side of the moon.

**Key Knowledge**

It appears to us that the Sun moves across the sky during the day but the Sun does not move at all. It seems to us that the Sun moves because of the movements of Earth.

Earth rotates (spins) on its axis. It does a full rotation once in every 24 hours. At the same time that Earth is rotating, it is also orbiting (revolving) around the Sun. It takes a little more than 365 days to orbit the Sun. Daytime occurs when the side of Earth is facing towards the Sun. Night occurs when the side of Earth is facing away from the Sun.

Neil Armstrong



Earth and provide homes for teams of astronauts and scientists. It allows them to conduct experiments in zero-gravity and learn more about how the human body reacts in space. The International Space Station (ISS) is currently in orbit. It was started in 1998 and continues to have sections added to it – it is expected to be completed by 2011. The ISS is a collaborative space project, which brings together the talents of over 100,000 people representing 17 different countries.

<b>Axis</b>	An imaginary line that a body rotates around. The Earth's axis runs from the North Pole to the South Pole.
<b>Black hole</b>	A black hole is an object in space whose gravity is so great that nothing can escape from it, not even light. Scientists believe that black holes form when a star shrinks at the end of its life. The first black hole to be found was Cygnus X-1 in 1971.