

## Key Vocabulary

**Solar system** – the collection of 8 planets and their moons in orbit around the sun, together with smaller bodies in the form of asteroids, meteoroids and comets.

**Planet** – a celestial body moving in an elliptical orbit round a star.

**Celestial body** – a natural body positioned outside of the Earth's atmosphere.

**Elliptical** – an oval shape (e.g. an elliptical orbit).

**Orbit** – the curved path of a celestial object around a star, planet or moon.

**Revolution** – the movement of one object around the centre of another object.

**Rotation** – the movement of one object around the centre of its own axis.

**Season** – each of the four divisions of the year marked by particular weather patterns and daylight hours, resulting from the Earth's changing position with regard to the Sun (winter, autumn, summer and spring).

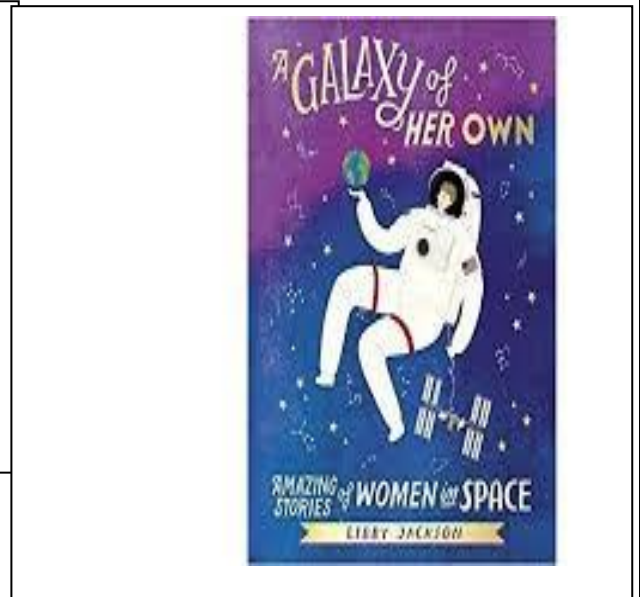
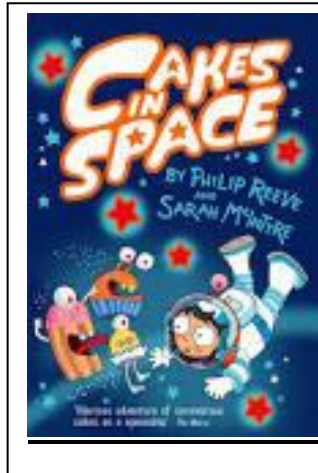
**Eclipse** – the obscuring of light from one celestial body by the passage of another.

**Lunar Eclipse** – an eclipse in which the moon appears darkened as it passes the Earth's shadow.

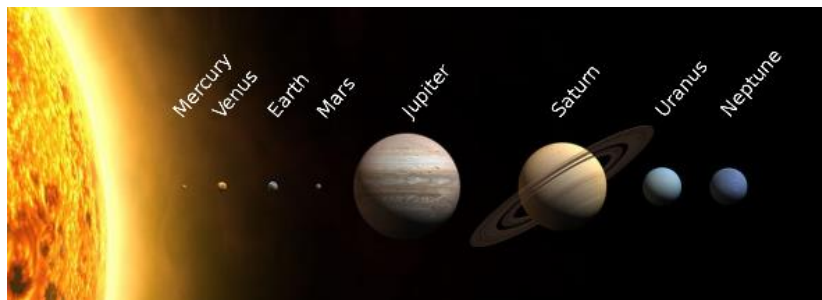
**Solar Eclipse** – an eclipse in which the sun is hidden by the moon.

**Terrestrial planet** – a planet formed of rock;

## Otters Journey through Space

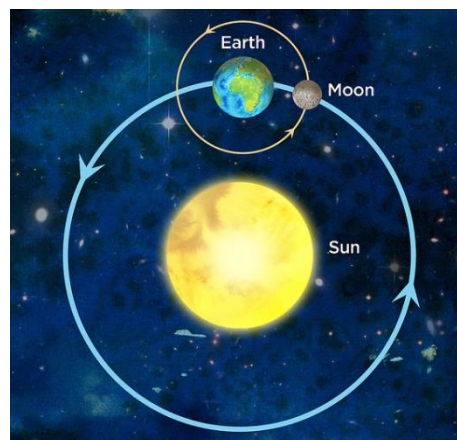


## Our Solar System



My Very Enthusiastic Mother Just Served Us Noodles!  
(Remember – Pluto is no longer classified as a planet.)

## The movement of the Earth and Moon relative to the Sun



- Earth's orbit of the sun: 365 ¼ days
- One full rotation of the Earth: 24 hours
- Moon's orbit of Earth: approximately 27 days

## Timeline of Space Exploration

**1942:** In 1942 the German V2 was the first rocket to reach 100km from the Earth's surface (the boundary of space): sent by USA

**1947:** The first animals were launched into space. Fruit flies were used to study the effects of space travel on animals, and were chosen because they are more similar to humans than you might imagine! They all survived

**1949:** Albert II, was the first monkey in space but he died on return to earth.

**1957:** On 4th October 1957, Russia launched the first satellite into space; Sputnik 1, and the space age had properly begun!

**1957:** In November 1957, the Russian space dog Laika became the first animal to orbit the earth. She unfortunately died due to overheating.

**1959:** Space-probe Luna 2 crash-landed into the moon at a speed that would kill an astronaut if one had been travelling in it! It was ten more years until a human visited the moon's surface.

**1961:** Russian Cosmonaut Yuri Gagarin became the first man in space.

**1963:** The first woman in space was Russian cosmonaut Valentina Tereshkova.

**1963:** US President John F. Kennedy promised the world that the US would land men on the moon before 1970.

**1969:** On 20th July 1969, Neil Armstrong, and then Buzz Aldrin took "one small step" and became the first men on the moon. The first words said on the moon were "the Eagle has landed". Their spaceship, Apollo 11 worked perfectly, flying them 250,000 miles to the moon, and bringing them all the way back safely to earth. Buzz was a childhood nickname - his real name was Edwin!

**1973:** Russian space probe Mars 2 explored Mars, the fourth planet of the solar system. The probe was made of two parts. One part stayed in orbit for a year, sending pictures of Mars back to earth. The other was to land and explore the surface of Mars, but it was destroyed when its parachute failed to open.

**1986:** The MIR space station was built in sections, each piece launched by a rocket and then joined together in orbit. Construction started in 1986, with the last piece being fitted ten years later! MIR was the first consistently inhabited long-term space station. MIR was destroyed in 2001 when it burned up as it crashed back to earth.

**1991:** Helen Sharman entered a competition to become the first British astronaut in space. After 18 months of intensive training, Helen was part of a Russian mission to the MIR space station.

**2000:** In 2000 the first permanent crew moved into the International Space Station (ISS), where crews of astronauts have been living ever since.

**2001:** On the 28th April 2001 American millionaire Dennis Tito became the first space tourist when he paid around 20 million dollars for a ride in a Russian Soyuz spacecraft.

**2015:** Tim was the first British ESA astronaut to visit the International Space Station, launching on a Soyuz rocket on 15 December 2015.

**Looking ahead:** The U.S. National Space Policy of 2010 set out goals for space exploration; to send humans to an asteroid by 2025 and to the planet Mars in the 2030s. Many of the astronauts that will be involved in these exciting missions are only children right now!