

What you might already know:

- ⇒ That the Moon spins (orbits) around the Earth, and possibly that the Earth orbits the Sun.
- ⇒ The names of the planets and perhaps the order of them in our Solar System.
- ⇒ We are in a galaxy called the Milky Way.

Scientist spotlight: Katherine Johnson

One of NASA's human 'computers,' Katherine Johnson performed the complex calculations that enabled humans to successfully achieve space flight.



Our Learning Objectives:

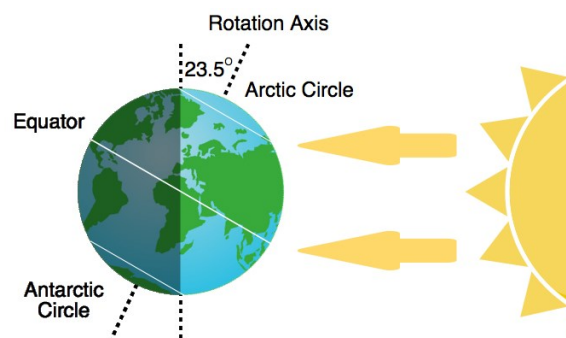
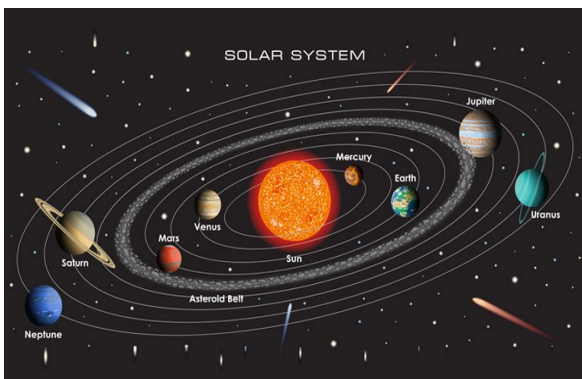
- ◆ To learn how the planets in our Solar System are organised.
- ◆ To use mathematics to model the dimensions of our Solar System.
- ◆ To describe the movement of the Earth and Moon relative to the Sun in our Solar System.
- ◆ To describe the movement of the Moon relative to the Earth.

Fun facts!

- * You are travelling on Earth through space at the speed of 107,218 kph.
- * It is impossible to land on Saturn's ring because it consists of millions of pieces of ice, dust and rocks scattered around the planet.
- * You don't feel the Earth spin because you, the atmosphere, skyscrapers, and everything else are spinning along with the Earth at the same constant speed.

Scientific Core Knowledge:

Our Solar System



- Our Solar System has a large star, the Sun, at its centre, and eight planets which orbit the Sun. The planets are: Mercury, Venus, Earth, Mars, Jupiter Saturn, Uranus and Neptune.
- The vast majority of the system's mass is in the Sun, with most of the remaining mass contained in Jupiter.
- The model of the Solar System has been refined over many centuries. **Aristotle** (384 BC–322 BC) proposed the geocentric model, with the Earth at the centre of the universe. **Nicolaus Copernicus** (1473–1543) made accurate observations of the Moon and the planets. **Galileo** (1564–1642) championed the heliocentric model and used telescopes to show that Jupiter had moons.
- The Earth orbits the Sun once every 365¼ days and spins on its axis once a day.
- One full cycle of the Moon's phases is approximately 28 days.

Scientific Vocabulary:

- Solar System:** a series of planets which orbit a star.
- Sun:** the star at the centre of our Solar System.
- Star:** an astronomical body that produces its own energy.
- Planet:** a celestial body that orbits a star and is round.
- Centric:** situated at the centre.
- Geocentric:** with the Earth at the centre.
- Heliocentric:** with the Sun at the centre.
- Timeline:** a way of displaying according to the date they occurred.
- Night-time:** the time when part of the Earth is in darkness.
- Daytime:** the time when part of the Earth is in daylight.
- Orbit:** the path of a planet or moon around
- Time zone:** a geographical region where the same time is set.

Misconceptions: You might think...

- * There is only one Solar System
- * That the Earth is at the centre of our Solar System.
- * That there are lots of stars in our solar system.
- * That all planets have rocky surfaces.
- * That you need a telescope to see the planets.
- * The sun moves around the earth.
- * Night-time is caused because the Sun goes behind the Earth.