Colney Heath School - Science		
Topic: Earth and Space	**Year: 5**	**Earth Science**

What should I already know?

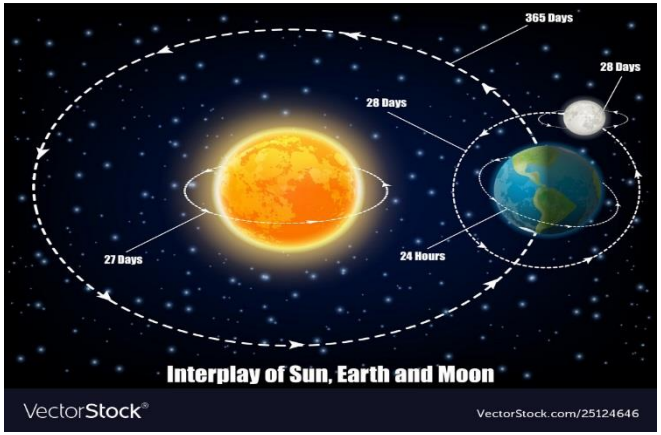
We have four seasons (autumn, winter, spring and summer). Days are longer in the summer and shorter in winter. Weather changes through the year, getting hotter in the summer and colder in the winter. Light is a form of energy. We need light to see things and darkness is the absence of light. Light travels in straight lines. Everything that we can see is either a light source or something that is reflecting light from a light source into our eyes. The Sun is a light source, but the Moon is not and is merely reflecting light from the Sun. A shadow is caused when an object blocks light from passing through it. Many light sources give off light and heat. The properties of a sphere. A force is the pulling or pushing effect that something has on something else.

Vocabulary

Galaxy	An extremely large group of stars and planets. Our galaxy is called the Milky Way.
Comet	A bright object with a long tail that travels around the Sun.
Meteorite	A rock from outer space that has landed on Earth.
Celestial body	A large object in the universe.
Universe	The whole of space and all the stars, planets, and other forms of matter and energy in it.
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).

Diagrams

Earth, Sun and Moon Orbit



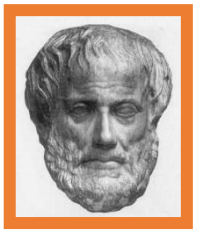
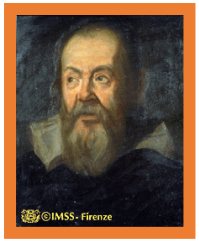
Order of Planets in our Solar System

Day and Night Cycle

Vocabulary

Axis	An imaginary line through the middle of something.
Gravity	The force which causes things to drop to the ground.
Orbit	The curved path in space that is followed by an object going round and round a planet, moon, or star. It takes Earth 365.25 days to orbit the sun. It takes the Moon 27.32 days to orbit Earth.
Leap year	A year which has 366 days. The extra day is the 29thFebruary. There is a leap year every four years.
Planet	A large, spherical 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.
Star	A large ball of burning gas in space.
Solar eclipse	Occurs when the Moon is between the Sun and the Earth, casting a shadow on the Earth.

Satellite	Something that orbits a planet. Moons are natural satellites.		**Lunar eclipse**	Occurs when the Earth is between the Sun and the Moon, casting a shadow on the Moon

Big Picture	**By the end of our project we will know that**
Key Scientists  Aristotle 384 BC – 322 BC Aristotle was an ancient Greek philosopher who proposed that the Earth was at the centre of the Solar System and that all other objects orbited around it.  Nicolas Copernicus 1473 - 1543 Copernicus was the first scientist to suggest that the SUN was at the centre of the Solar System. He was also the first scientist to correctly order the planets.  Galileo Galilei 1564 AD – 1642 AD Galileo Galilei was an Italian scientist. He did much work on improving the telescope. This allowed him to see things that other scientists could not. He was the first person to identify Sunspots. He also was the first person to see the 4 brightest moons of Jupiter. He also noticed that our view of Venus changes in the same way as that of our Moon. Earth science E1: The Earth is one of eight planets that orbit the sun. E2: The Earth is tilted and spins on its axis leading to day and night, the seasons and the climate. E3: The Earth is made up of several layers, including a relatively thin rocky surface which is divided into tectonic plates, and the movement of these plates leads to many geologic events (such as earthquakes and volcanoes) and geographical features (such as mountains.)	The universe comprises all matter and space in existence. A celestial body is a large object in the universe. A star is an exceptionally hot ball of gas, originally made from hydrogen and helium and our Sun is a star. A planet (e.g Earth) is defined as a spherical celestial body that orbits a star and has cleared the neighbourhood of its orbit of other objects, some of which crash into the planet and others become moons of that planet. It was once thought that everything orbited the Earth, but scientists like Copernicus and Galileo used telescopes and measurement to show that the Earth orbited the Sun. There are eight major planets in our solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune. The universe is utterly vast and our solar system makes up a tiny fraction of the universe. A satellite orbits a planet and moons are natural satellites. The Moon orbits the Earth roughly every 28 days. The Moon orbits the Sun, different parts of it are lit up by the Sun, which is why we see a different shape lit up on the Moon as the lunar cycle progresses. Humans have sent man-made satellites into orbit that assist with telecommunication. All the planets in the solar system orbit the Sun and the further away they are from the Sun, the longer their orbit. The Earth spins around an imaginary line through its centre called an axis and this axis is tilted relative to the Earth's orbit. Night and day are the result of the Earth rotating on its axis. The tilt of the Earth towards and away from the Sun's light as the Earth orbits the Sun leads to the seasons as during winter the light is spread over a wider area. A solar eclipse occurs when the Moon is between the Sun and the Earth, casting a shadow on the Earth; a lunar eclipse occurs when the Earth is between the Sun and the Moon, casting a shadow on the Moon.