
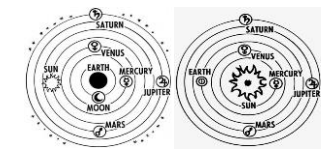




Knowledge

<p>What is a celestial body?</p>	<p>Identifying and Classifying A celestial body (sometimes called a celestial or astronomical object) is any object that exists within the universe. This includes stars, planets and moons, as well as smaller objects such as comets, meteoroids and asteroids. All of these celestial bodies can be found inside galaxies, such as the Milky Way, where our Solar System exists.</p>
<p>How have our ideas about the Solar System changed over time?</p>	<p>Ideas Over Time As our ability to observe the universe has improved with time, we have been able to identify more of the Solar System. The Sun and the first six planets (Mercury, Venus, Earth, Mars, Jupiter and Saturn) were discovered in prehistoric times, with Uranus and Neptune being discovered in the 18th and 19th centuries. Pluto was first identified in 1930 and was reclassified as a dwarf planet in 2006. Additionally, how the planets were believed to be ordered has developed from original teaching by Ptolemy in Ancient Greece to what we know now.</p>
<p>What is the difference between the geocentric and heliocentric models of the Solar System?</p>	<p>Comparative Testing The geocentric model of the Solar System was used from prehistoric times and supported by the church for hundreds of years. It stated that the Earth was at the centre of the Solar System, with the Sun and other planets orbiting around it. The heliocentric model, developed in the 16th century, proved that the Sun was actually at the centre of the Solar System and that Earth and all of the other known planets orbited around it. This was a huge change in thinking and took nearly a century to be accepted by scientists and the church.</p>
<p>Why was Nicolaus Copernicus' work so controversial?</p>	<p>Research Nicolaus Copernicus (1473-1543) https://www.youtube.com/watch?v=M0p6NKANE08 [Biography] https://www.youtube.com/watch?v=s6efb-Lz1N4 [Heliocentric Model] Polish mathematician, astronomer and church leader.</p>
<p>Do different planets have different amounts of moons?</p>	<p>Identifying and Classifying A moon is a celestial body that orbits a planet. Earth has one moon, but other planets have more or less moons than Earth. Another name for a moon is a natural satellite, and each one is given a name from places such as Greek mythology (like the moons of Mars) or characters from the plays of Shakespeare (like some of the moons of Uranus).</p>
<p>Can you identify all the phases in the cycle of the Moon?</p>	<p>Identifying and Classifying</p>  <p>The Moon orbits the Earth in an anti-clockwise direction and takes approximately 28 days, or one lunar month, per orbit. Because the Moon also spins on its axis as it orbits Earth, we only ever see one side of it. Depending on where it is in its orbit, the Moon is visible in 8 different phases: a new moon is closest to the Sun and cannot be seen at all, whilst a full moon is furthest from the Sun and shows the Moon's full side.</p>
<p>How can I use a sundial to help me tell the time?</p>	<p>Observing Over Time The Earth rotates on its axis in an anti-clockwise direction and makes one complete rotation in 24 hours, or one day. This makes it appear as though the Sun is moving through the sky, but in fact it is the Earth's rotation that causes day and night. As the Earth rotates, shadows that are formed change in size and orientation. What would the shadows reveal about the time of day?</p>
<p>Why do some people consider Stonehenge to be an Astronomical clock?</p>	<p>Pattern Seeking Stonehenge was constructed in prehistoric times on Salisbury Plain in Wiltshire. The whole site is built in such a way that it lines up with the sunrise on the longest day of the year and the sunset of the shortest day of the year. Why would this have been important in prehistoric times for working out what season of the year it was?</p>
<p>Does the amount of daylight hours depend upon where you are in the world? Do some countries have daylight, or darkness, for 24 hours?</p>	<p>Comparative Testing 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 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. Using a world atlas and lines of latitude and longitude, is it possible to use this information to predict the number of daylight hours for countries in polar regions? Do you think it would be the same for the whole country or only for certain parts of it? Why?</p>





Vocabulary

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 29 th 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 around 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 around it.
Sphere	An object that is round in shape, like a ball.
Spin	To turn 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.

Hurst Hill Primary School Knowledge Organiser

Science

Space and
Astronomy

Year 5

Summer 1

Chemistry

Physics is the science that understands the nature and properties of energy and matter.

Statutory requirements

Pupils should be taught to:

- describe the movement of the Earth, and other planets, relative to the Sun in the solar system
- describe the movement of the Moon relative to the Earth
- describe the Sun, Earth and Moon as approximately spherical bodies
- use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.