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| **Investigate!** |
| * Compare the time of day at different places on Earth.
* Construct shadow clocks and sundials.
* Keep a Moon diary over the course of a month - what do you notice?
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| **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](https://www.collinsdictionary.com/dictionary/english/bright) object with a long tail that travels around the Sun |
| galaxy | an [extremely](https://www.collinsdictionary.com/dictionary/english/extremely) large group of stars and planets. Our galaxy is called the Milky Way. |
| gravity | the force which causes things to [drop](https://www.collinsdictionary.com/dictionary/english/drop) to the ground |
| leap year | a year which has 366 days. The [extra](https://www.collinsdictionary.com/dictionary/english/extra_1) day is the 29th 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](https://www.collinsdictionary.com/dictionary/english/space) that is followed byan [object](https://www.collinsdictionary.com/dictionary/english/object) [going](https://www.collinsdictionary.com/dictionary/english/going_1)[round](https://www.collinsdictionary.com/dictionary/english/round) and round a planet, [moon,](https://www.collinsdictionary.com/dictionary/english/moon) or [star](https://www.collinsdictionary.com/dictionary/english/star) |
| planet | a large, [round](https://www.collinsdictionary.com/dictionary/english/round) object in [space](https://www.collinsdictionary.com/dictionary/english/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 |
| sphere | an object that is round in shape like a ball |
| spin | turns quickly around a central point |
| star | a large ball of [burning](https://www.collinsdictionary.com/dictionary/english/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 ofhours behind or ahead of GMT (Greenwich Mean Time) |
| universe | the [whole](https://www.collinsdictionary.com/dictionary/english/whole) of space and all the [stars,](https://www.collinsdictionary.com/dictionary/english/star) [planets,](https://www.collinsdictionary.com/dictionary/english/planet) and other forms of matter and energy in it |

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| **What will I know by the end of the unit?** |
| What causesday and night? | * The Earth **rotates** on its **axis** anti-clockwise and makes a complete **rotation** over 24 hours (a day).
* This makes it appear as the Sun moves through the sky but the Earth’s **rotation** causes day and night.
* 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 why 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.
* As the Earth **rotates**, **shadows** that are formed change in size and orientation.
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| Yearlength and the seasons | * The Earth takes 365 and a quarter days to **orbit** the Sun.
* Because of the extra quarter day it takes to **orbit** the Sun, every four years on Earth is a **leap year**!
* It is the Earth’s tilt that causes the seasons.

Image result for what causes seasons |
| The Moon | * The Moon **orbits** the Earth anticlockwise and takes approximately 28 days.
* The Moon spins once on its **axis** every time it **orbits** Earth. This means that we only see one side of the Moon.
* The Moon has different phases depending on where it is in its **orbit**.
* The Moon’s **gravity** causes high and low tides.
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| What is the **Solar System?** | * There are 8 planets in our Solar System (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune). Pluto is a dwarf **planet**.
* They all orbit the Sun, which is a **star**, and they all have moons.
* The first four **planets** are relatively small and rocky, while the four outer **planets** are gas giants (Jupiter and Saturn) or ice giants (Uranus and Neptune).
* There are also **asteroids**, **meteoroids** and **comets** in the **Solar System**.
* The **Solar System** is in a **galaxy** called the Milky Way.
* The **galaxy** is in the **universe**.
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| **Other Diagrams** |
| The Sun, Earth and Moon are approximately **spherical.**The Earth **orbits** the Sun. The Moon **orbits** Earth.Image result for planetsWhen the Moon passes between the Sun and Earth, the**shadow** cast by the Moon falls on the Earth’s surface and we would no longer be able to see the Sun. This is called a **solar eclipse**. |

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| **What should I already know?** |
| * We have four seasons (autumn, winter, spring and summer).
* The Sun is a source of light but the Moon is not.
* Know that a **shadow** is caused when an object blocks light from passing through it.
* To know the history of space travel.
* The properties of a **sphere**.
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| Question 6: Time zones arecaused by.. | Start ofunit: | End ofunit: |
| the Moon’s orbit |  |  |
| the Sun moving across thesky |  |  |
| the Earth’s rotation on itsaxis |  |  |
| the Earth’s tilt as it orbits |  |  |

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| Question 7: The Sun’s keeps the planets orbiting it | Start ofunit: | End ofunit: |
| gravitational pull (gravity) |  |  |
| burning gas |  |  |
| spherical shape |  |  |

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| Question 8: A solar eclipse iswhen… | Start ofunit: | End ofunit: |
| the Moon passes betweenthe Sun and the Earth |  |  |
| the Moon comes out in theday |  |  |
| the Earth stops orbiting theSun |  |  |
| the Sun moves in front ofthe Moon |  |  |

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| Question 4: The SolarSystem includes... | Start ofunit: | End ofunit: |
| the Sun |  |  |
| the planets |  |  |
| asteroids, meteorites andcomets |  |  |
| all of the above |  |  |

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| Question 3: The seasons arecaused by… | Start ofunit: | End ofunit: |
| the weather |  |  |
| the Moon |  |  |
| the Earth’s rotation on itsaxis |  |  |
| the Earth’s tilt as it orbits |  |  |

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| Question 2: How long does it take the Earth to orbit the Sun? | Start of unit: | End of unit: |
| 365 and a quarter days |  |  |
| 28 days |  |  |
| 24 hours |  |  |

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| Question 1: Which of thesecauses day and night? | Start ofunit: | End ofunit: |
| The Sun moves across thesky. |  |  |
| The Earth rotates on its axis |  |  |
| The Earth orbits the Sun. |  |  |
| The Moon comes out atnight. |  |  |

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| Question 9: Jupiter, Saturn, Uranus and Neptune are known as... | Start of unit: | End of unit: |
| the rocky planets |  |  |
| the gas and ice giants |  |  |
| asteroids |  |  |
| dwarf planets |  |  |

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| Question 5: What do the Sun, Earth and Moon allhave in common? | Start of unit: | End of unit: |
| They all move in space |  |  |
| They are the same size |  |  |
| They are all approximatelyspherical |  |  |
| They are all stars |  |  |

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| Question 10: Write the order of the planets fromthe distance of the Sun (with the closest planet beingnumber 1). | Start of unit: | End of unit: |
| Venus |  |  |
| Earth |  |  |
| Jupiter |  |  |
| Neptune |  |  |
| Mars |  |  |
| Saturn |  |  |
| Mercury |  |  |
| Uranus |  |  |