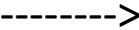
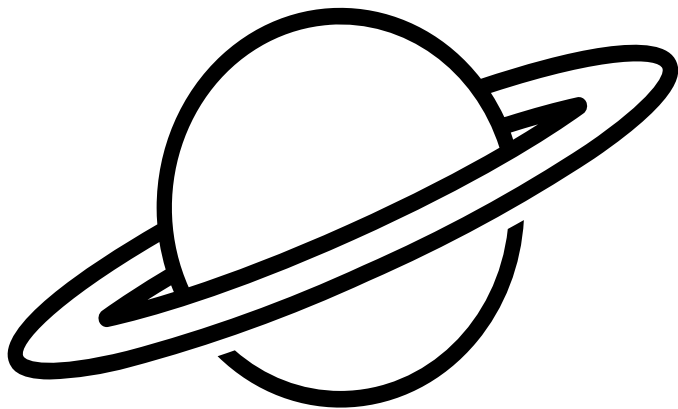
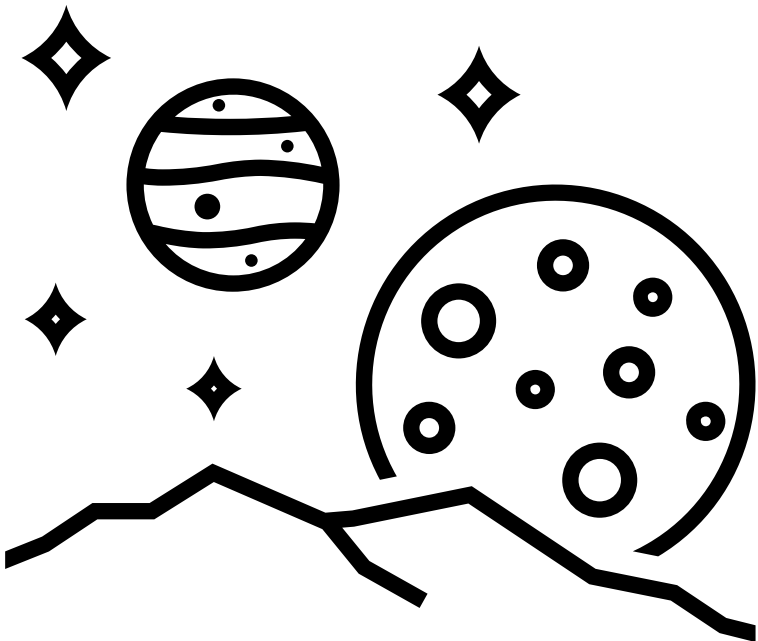


Fold in half at the line



Glue on this side



Universe

1	Describe the objects that you can see in the night sky
2	Describe some similarities and differences between planets in our solar system
3	Explain the motion of the sun, moon and stars across the sky
4	Explain why seasonal change happens on Earth
5	Describe the phases of the moon
6	Explain why you see the different phases of the moon

	Keyword	Definition
1	Heliocentric	Having or representing the sun as the centre on the solar system
2	Geocentric	Having or representing the earth as the centre on the solar system
3	Asteroid	A small rocky body <u>orbiting</u> the sun.
4	Comet	A celestial object consisting of a nucleus of ice and dust.
5	Waxing moon	Any phase of the moon during the lunar cycle between the new moon and the full moon
6	Waning moon	Any phase of the moon during the lunar cycle between the full moon and the new moon
7	Orbit	The curved path of a celestial object or spacecraft round a star, planet, or moon, especially a periodic elliptical revolution.

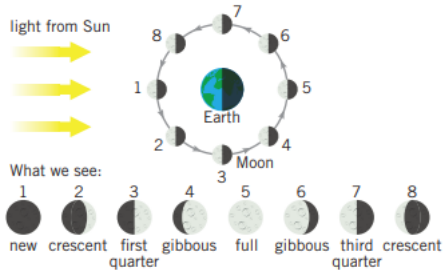
The Moon

The **Moon** orbits the Earth every 27 days and 7 hours.

It takes the same amount of time to spin on its axis, so we always see the same side.

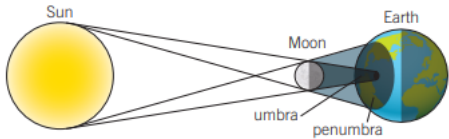
Phases of the moon

As the Moon moves around the Earth different parts are lit by the Sun, so it looks different to us.



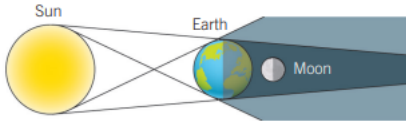
Solar eclipses

The Moon blocks light hitting part of the Earth. The **umbra** is the region of total darkness (like night), and the **penumbra** is where the light is partially blocked.



Lunar eclipses

The earth stops light hitting the Moon.

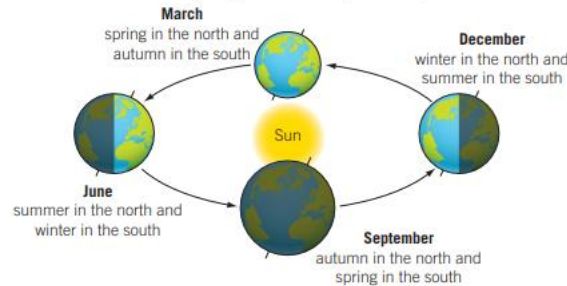


The Earth

The Earth is the only place we have found life in the **Universe**.

It takes a **year** for the Earth to orbit the Sun - 365.2442 days. We add one day every fourth year (a leap year) because of the extra 0.2442 days.

The Earth's **axis** is tilted 23.4 degrees, which causes **seasons** (which have different day lengths and temperatures).



The Earth spins on its axis every 24 hours, giving us **day and night**.

Space

A **galaxy** is a collection of billions of **stars**.

The Earth is in the **Milky Way** galaxy.

Planets are large objects that orbit stars, and do not **produce** light.

Asteroids are rocky objects smaller than planets, that also orbit stars.

Satellites are objects that orbit planets. This includes **natural satellites** (moons) and **artificial satellites** (e.g., the International Space Station).

Meteors are bits of rock which burn up in Earth's atmosphere. They are called **meteorites** once they hit the ground.

The Universe

contains billions of

Galaxies contain billions of

Stars are orbited by

Planets, asteroids, and comets

planets may have

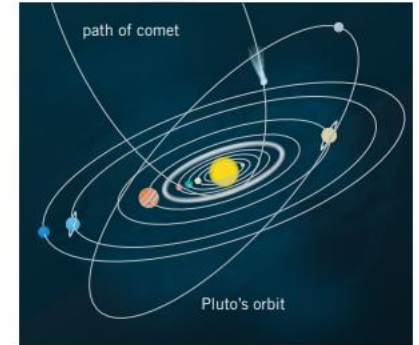
Moons

The Solar System

Our **Solar System** is everything that orbits around the Sun.

This includes:

- Inner planets – the **terrestrial** (rocky) planets
 - Mercury
 - Venus
 - Earth
 - Mars
- Asteroid belt** (Including the **dwarf planet** Ceres)
- Outer planets – the **gas giants**
 - Jupiter
 - Saturn
 - Uranus
 - Neptune
- Kuiper belt objects (such as Pluto)
- Comets** (balls of ice)



The further a planet is from the Sun, the colder its temperature is (apart from Venus, because of its thick atmosphere).






Gravity pulled gas and dust together to form the Sun about 5 billion years ago. The planets then formed from a spinning disc of gas and dust around the Sun.

An exoplanet is a planet that is orbiting a star that is not the Sun.

A group of stars is called a **constellation**. Different constellations are seen in winter and summer because the Earth is moving around the Sun.

Homework Menu Grid

Complete some of the tasks below to reach a total of _____ points over this unit of work – Highlight the box once completed.

Topic	1 Point	2 Points	4 Points	6 Points	10 Points
The night sky 	What is a satellite? What is a manmade one and a natural one?	Create a glossary with all of the keywords from today's lesson	Suggest why astronomers measure distance in light years instead of kilometers	Some of the stars we see at night have already died. Explain why we can still see their light from earth?	Research the life cycle of a star. Create a storyboard using this information.
The solar system 	Create a way of remembering the order of all of the planets in our solar system (in terms of distance from the sun)	Create a poster about our solar system with facts from this lesson	Draw and label a diagram of the solar system, and use this to explain why planets seem to move across the night sky	Research the temperatures of other planets. Find out how the distance from the sun affects temperatures and use this to explain why life on earth is possible.	Research Pluto. Create a fact sheet about it and find out why it is no longer considered a planet.
The Earth 	Create a 140 character "tweet" explaining why the sun rises in the east and sets in the west	Create a glossary with all of the keywords from today's lesson	Draw and label a diagram showing the earth's rotation on its axis	Explain what life on earth would be like, over the course of a year, if the earth's axis was not tilted	Research climate change and the earth's axis. Create an information sheet about what you find out.
The Moon 	Create a 140 character "tweet" explaining what the geocentric model is.	Create a mnemonic to help you remember the difference between the heliocentric model and geocentric model	Draw and label a diagram to show why we see the moon looks different at different points in time	Research the etymology of heliocentric and geocentric and explain where those words came from.	Research the effect that the moon has on the sea's tides. Write down a paragraph based on your findings
Seasons 	Write a definition of what a ceramic is, in a way that people who know very little science could understand it	Create a glossary with pictures of keywords from today's lesson.	Write about two everyday life examples of how ceramics are used	Research the similarities of ceramics to different types of rocks. Create a poster based on your findings	Research how ceramics are formed and draw a storyboard based on your findings.

Careers:
Astronaut
Geologist
Climatologist
FPGA Engineer

Why?
What is more interesting that the solar system and beyond.

Future Learning:
This topic will be explored in detail in the Physics GCSE.

