Manor Primary School Knowledge Organiser –UKS2 Science

Topic: Romans	Phase: Upper KS2	Strand: Earth and space

What should I already know?

You have not done a space related topic yet but you should still know the following from other science topics:

- The sun is a source of light and the suns rays can be dangerous
- Gravity is a force that pulls items together

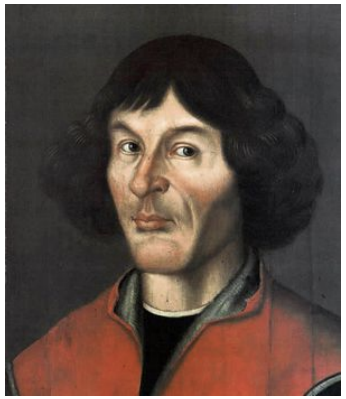
At the end of the unit, I will be able to:

- 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

Nicolaus Copernicus

Nicolaus Copernicus (19 February 1473 – 24 May 1543) was an astronomer. People know Copernicus for his ideas about the sun and the earth. His main idea was that our world is heliocentric (helios = sun). His theory was that the sun is in the middle of the solar system, and the planets go around it.

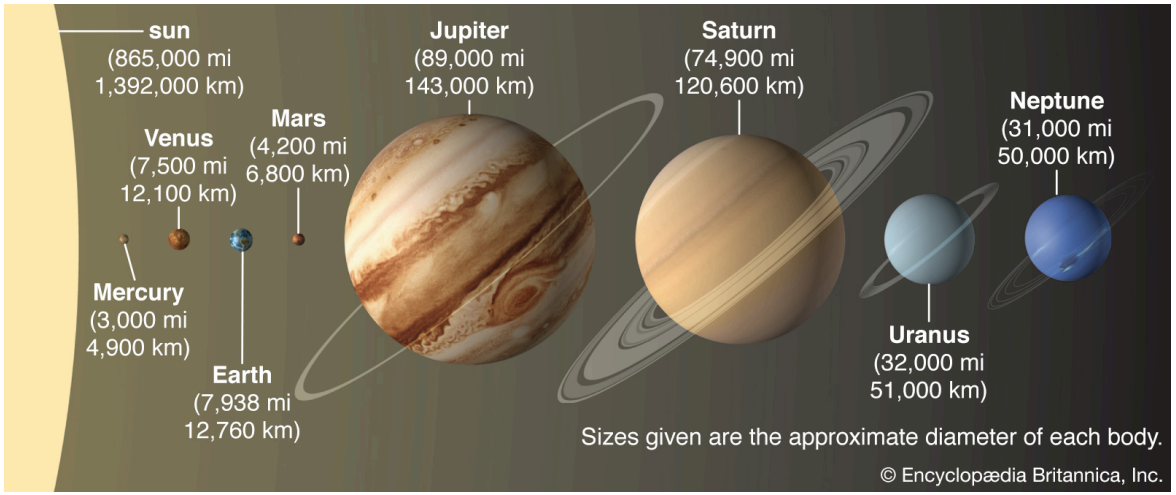
Copernicus was born in 1473 in the city of Thorn (Toruń), in Royal Prussia, a mainly German-speaking region that a few years earlier had become a part of the Kingdom of Poland. He was taught first in Cracow and then in Italy, where he graduated as a lawyer of the church. He also studied medicine to serve his fellow clerics. Copernicus spent most of his life working and researching in Frauenburg (Frombork), Warmia, where he died in 1543.



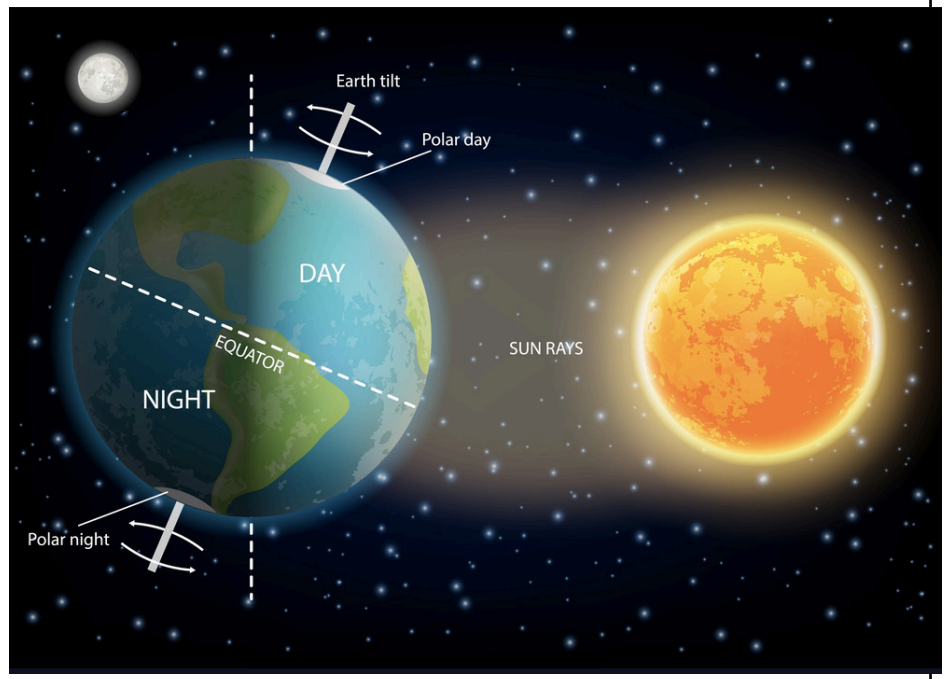
We are MANOR! As Scientists we will...

Manners	Develop a respect and understanding for the natural world, its people, animals and plants. Share ideas, celebrate good work, value others' contributions, or discussions and debates.
Aspiration	Learn by being challenged in a series of well-designed scientific enquiry and investigation tasks linked to meaningful contexts and develop a knowledge of scientists and careers to broaden our horizons. Be aspirational in developing scientific knowledge and conceptual understanding through biology, chemistry and physics.
Nurture	To recognise that we live in a wonderful world made up of many different people and living things. We will develop an appreciation and respect for the diverse world and environment in which we live, showing care and compassion for the environment around us.
Open-Mindedness	We will be open-minded so that we can conduct experiments or observe what is happening in order to see patterns that might emerge or to gain new knowledge. We will use our curiosity and learn to wonder why something behaves a certain way.
Resilience	Engage confidently with the science curriculum and learn that anything is possible and failure is not something to fear but to learn from. We will develop our scientific enquiry and investigation skills with patience and care, repeating investigations to check the accuracy of results.

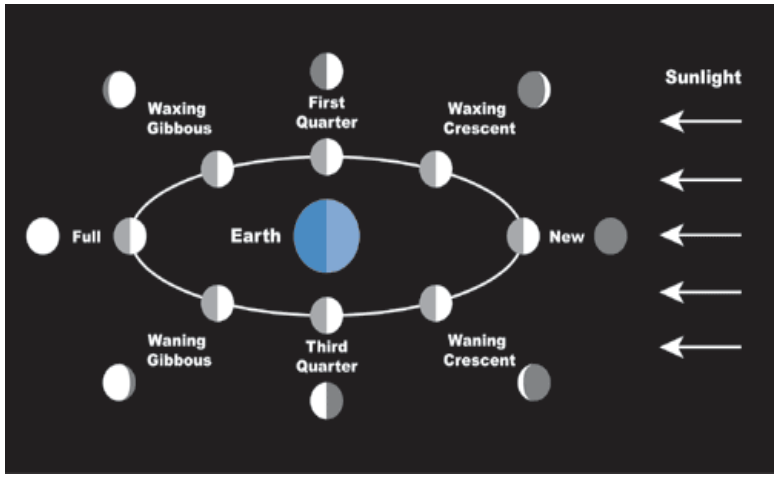
Useful diagrams



Left: the solar system – not to scale, the gaps between planets are millions of miles!



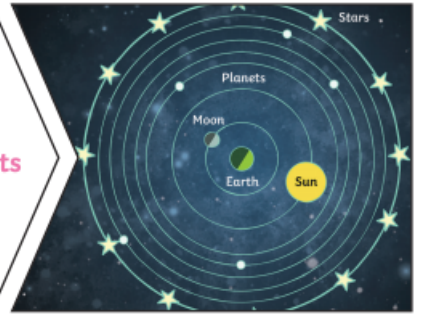
Below: The Moon cycle which takes 28 days to complete – we never see 'the dark side' of The Moon.

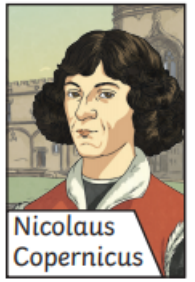


Right: This diagram shows how the rotation of the Earth gives us night and day

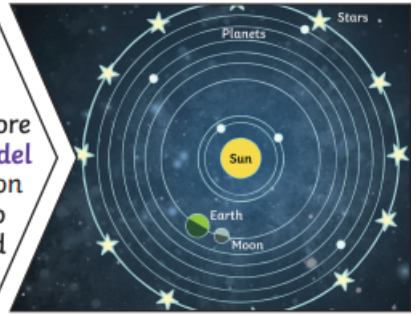
Below: This shows the difference between the geocentric model – proven to be wrong- and the heliocentric model.

Geocentric model
Years ago people believed that planets moved around the Earth.





The work and ideas of many **astronomers** (such as Copernicus and Kepler) combined over many years before the idea of the **heliocentric model** was developed. Galileo's work on gravity allowed **astronomers** to understand how **planets** stayed in **orbit**.



Earth and Space quiz		
Use the Knowledge Organiser and research to answer these questions.		
	Question	Answer
1	What are the 8 planets of our solar system?	
2	What is the difference between the heliocentric and geocentric systems?	
3	How many days does the moon cycle take to complete?	
4	What is Copernicus credited with?	
5	5a)What is a satellite? 5b) is the moon a satellite?	

Vocabulary	
Sun	A star that the earth and other planets in our solar system orbit around.
gravity	A pulling force exerted by the Earth (or anything else which has mass).
Earth's gravitational pull	The pull that Earth exerts on an object, pulling it towards Earth's centre. It is the Earth's gravitational pull which keeps us on the ground.
star	A giant ball of burning gas that is held together by its own gravity
Moon	A natural satellite which orbits a planet – we have one called... The Moon, how imaginative
planet	A large object round-or nearly round – that orbits a star
sphere	A 3d shape also called a ball or round.
Spherical bodies	Astronomical objects shaped like spheres
Satellite	Any object or body that orbits something else e.g. the moon is a natural satellite
Orbit	To move in a regular, repeating and curved path around another item
Geocentric model	The idea that the planets and stars orbit around the Earth
The heliocentric model	The idea that the planets all orbit around a star in the centre of our solar system which travels through space