Year 5 Science Knowledge Organiser - Earth & Space

Knowledge - Solar System		Vocabulary	
orbit celestial bodies		1. Horizon	The line at which the earth's surface and the sky appear to meet.
Earth Mercury Venus Sun Uranus Neptune	 Mercury, Venus, Earth and Mars are rocky planets. Mercury, Venus, Earth and Mars are mostly made up of metal and rock. Jupiter, Saturn, Uranus and Neptune are mostly made up of gases (helium and hydrogen) although they do have cores made up of rock and metal. 	2. Shadow	A dark shape on a surface that is made when something stands between a light and the surface.
		3. Globe	The spherical representation of the Earth.
		4. Orbit	The curved path in space that is followed by an object going round and round a planet, moon, or star.
		5. Diameter	A straight line passing from side to side through the centre of a circle or sphere.
Knowledge - Movement of Earth		Day & Night	
 Earth rotates around its axis from west to east. An axis is an imaginary line that runs from the North Pole to the South Pole. If you look on the Earth from the northern hemisphere, it rotates counter clockwise. One complete rotation around its own axis relative to the Sun is called a solar day and has a duration of 24 hours. Our Earth doesn't rotate just around its own axis, but it also orbits in the same direction around the Sun and moves a little bit on orbit every day. 	ent of the Moon	 The Earth rotate makes a completed makes a completed	es on its axis anti-clockwise and ete rotation over 24 hours (a day). opear as the Sun moves through Earth's rotation causes day and of the Earth experience daylight at this means that it is morning, ight in different places. This is also we have time zones. Earth's tilt, the poles experience 24 t in the summer, and very few t in the winter. ates, shadows that are formed and orientation.
 The Moon orbits the Earth once every 27.3 days. The Moon orbits the Earth in an oval-shaped path called an ellipse. Because of this shape, the Moon is sometimes nearer and sometimes further away from Earth. The range of distance is from 364,397 km to 406,731 km. Just like the Earth, the Moon rotates on its axis. This rotation is anti-clockwise, just like the Earth's. It takes 28 days for the Moon to rotate once. Because the Moon spins and orbits at the same rate of time, it appears to be still from Earth. 		Waxing and Waning	
		The Moon can be described as either waxing or waning. This refers to the amount of Moon we see on sequential days.	
		1. When we are gradually seeing more of the Moon over a number of days, this is called waxing.	
Knowledge - Phases of the Moon			
 The Moon can also be described as a new moon (when none of it is visible from the Earth), half-moon and full moon. A crescent moon is when we can only see a crescent-shaped area of the Moon. 	Waxing Half Moon Waxing Gibbous	1. When we are g	radually seeing less of the Moon over a number of days,
2 A gibbour mean is when a grassent shaped area of the Mean		this is called w	aning

A gibbous moon is when a crescent-shaped area of the Moon cannot be seen.

Waning Waxing Waning Waxing crescent moon crescent moon gibbous moon gibbous moon



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Year 5 Science Skills Knowledge Organiser - Earth and Space

Key Concepts and what they mean		
1. Physics	Physics is the study of energy and matter in space and time and how they are related to each other.	
2. Chemistry	Chemistry deals with the properties of substances, the transformations they undergo, and the energy that is released or absorbed during these processes. For example, when plants use sunlight to produce energy (or food for itself).	
3. Data Collection	Data collection is the process of gathering and measuring information to answer a question. For example, recording living and non living things to investigate whether numbers change depending on the weather.	
4. Cause and effect	Cause and effect is the relationship between events or things, where one is the result of the other or others. For example, the weather gets colder and there is less food around, so animals hibernate.	
5. Envrionmental	Environmental relates to the environment around us at Old Fletton.	

Experiment Steps to Success - Method

This part means what you did and how you did it. What were the steps that you took to complete your experiment? What did you do with the materials that you used? Think of this section as a step-by-step guide for your experiment.

Equipment list tells the reader exactly what they need to conduct the experiment.

- 1) You must include all the equipment needed including spoons, measuring equipment, paper towels
- 2) You must show quantities and details

For example: Some water

Beaker

100ml of cold water 500ml glass beaker

The method is a list of step-by-step instructions to tell the reader exactly what to do.

Use imperative verbs: place, put, make, stop, pour, insert

Use time connective words: next, before, after, whilst, first, second, afterwards



Use time connective phrases: Before pouring, after taking, before heating, first measure

Comparing Data - Conclusion

A conclusion is a short paragraph that discusses the overall results of an experiment and explains whether the prediction was correct or not.

My prediction was and my results support / dispute this. I think the results show that..... because

Literacy links to this topic

Stories that relate to the topic of 'Earth and Space' are:



George's Secret Key to the Universe by Lucy and Stephen Hawking

These stories help you to gain a greater understand of Earth and Space and may spark some questions that you might want to ask in your next science lesson!

Experiment Steps to Success - Writing a Prediction

The purpose of the prediction is to tell your reader what you think will be the result of the experiment.

Good prediction

My prediction is that the bubble wrap will melt the ice the slowest. This tells the reader what you think will happen but does not include any details.

Better prediction

My prediction is that the bubble wrap will melt the ice the slowest compared to foil, paper or felt. This tells the reader more information about what you are testing but does not state why you think the bubble wrap will be the best.

Best prediction

My prediction is that the bubble wrap will melt the ice the slowest compared to foil, paper or felt. I believe this because the bubble wrap has air pockets and air is a gas. I know that air or gas has particles further apart so the heat will take longer to pass through each particle and into the ice.

This tells the reader what you think, what the other options are and why you think that using scientific reasoning.

1) Time taken for the ice cube to melt when wrapped in 4) Type of material . Type of material Time to melt Bubble wrap 134s Foil 43s Paper 65s Felt 98s 5)

Producing a Data Table

Data tables help you keep information organised. If you're collecting data from an experiment or scientific research, saving it in a table will make it easier to look up later.

- 1) Name your table make sure the title relates to the data you will put in your table
- 2) Decide how many columns and rows you need.
- Draw the table. Using a ruler, draw a large box and making the necessary number of columns and rows.
- 4) Label all your columns.
- 5) Record the data from your experiment or research in the appropriate columns.