

Brough Primary School – Curriculum Intention

Plan 2022 - 2023



Subject: Science Year Group: Year 3/4		Area of learning: Earth and Space
Links to previous work/Remember when	<ul style="list-style-type: none"> • Learning in Years 1 and 2 relating to the seasonal changes that take place in England. • Knowledge of how the length of the day changes over a year from Years 1 and 2. • Knowing that it is not safe to look directly at the Sun. <u>Working Scientifically</u> <ul style="list-style-type: none"> • Asking relevant questions and using different types of scientific enquiries to answer them. • asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions. 	
Term	Year 5	Key Skills to be taught
Summer 2023 What the children should know at the end of this series of lessons		<ul style="list-style-type: none"> • Pupils should be introduced to a model of the Sun and Earth that enables them to explain day and night, including the apparent movement of the Sun across the sky. • Pupils should learn that a star is at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a dwarf planet in 2006). • They should understand that the moon is a celestial body that orbits a planet. (earth has one moon, Jupiter has four large moons and numerous smaller ones). <u>Working Scientifically</u> <ul style="list-style-type: none"> • Asking relevant questions and using different types of scientific enquiries to answer them. • Setting up simple practical enquiries, comparative and fair tests. • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

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Vocabulary

Earth, planets, Sun, solar system, Moon, celestial body, sphere/spherical, rotate/rotation, spin, night & day, orbit, opinion/fact, support/refute, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, 'dwarf' planet, orbit, accuracy, precision, scatter graphs, line graphs, geocentric & heliocentric models, star, rotate/rotation, axis, shadow clocks, sundials, astronomical clocks, variables, accuracy, precision, time-zone, Greenwich Meantime, gnomon, eclipse, light, reflection, telescope, satellite, tide, mass, gravity.

Sequence of learning	Objectives and suggested details provided by subject leader.
1	<p>i). Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>ii) Describe the Sun, Earth and Moon as approximately spherical bodies.</p> <ul style="list-style-type: none"> • Create a scaled solar system model using spherical representations. • Use ratios for scale and calculate and measure distances using a scaled system. • Select and use an effective medium to create an artistic representation of a chosen planet. • Use fruit to create a model of the solar system.
2	<p>i). Describe the movement of the moon relative to the Earth.</p> <ul style="list-style-type: none"> • Understand the difference between geo and heliocentric solar system and how • Knowing that the moon orbits the Earth and not the Sun, how do we know? What is the proof? • Knowing and being able to explain how the moon moves relative to the Earth. • Carry out a simulation to investigate and demonstrate why the moon appears as it does in the sky. • Look at photos of the moon and identify key features. • Link lunar phases to the position of the Moon, Earth and Sun in the form of a diagram.
3	<p>i). Describing the movement of the Earth, and other planets, relative to the Sun in the solar system, by examining geocentric and heliocentric theories.</p> <ul style="list-style-type: none"> • Look at the early geocentric ideas about planetary movement. Why did people have these ideas? • As scientists learnt more, understand how and why people changed to a heliocentric view of planetary movement.
4	<p>i). Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p> <ul style="list-style-type: none"> • Plan and carry out a shadow investigation that supports the idea that the Earth moves on its axis. • Observe, measure, record and identify patterns for changing shadows throughout a day. • Present scientific evidence in the form of a working 'shadow clock' model. Go on to provide an explanation of the model.

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	<ul style="list-style-type: none"> Explore the Earth's movement through simulation and time zones.
5	i) Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. <ul style="list-style-type: none"> Understanding how the rotation of the Earth causes night and day. Using evidence of solar observations (not looking directly at the sun) – such as making and using a sun dial. Understanding why people at first thought the sun moved around the Earth – from earlier lessons.
6	ASSESSMENT LESSON

Learning Outcome/product

Complete the cumulative quiz with your class. (See resources)

Assessment records	List only those children who have not achieved the expected outcomes.

Assessment records	List only those children who have exceeded the expected outcomes.

End of unit assessment question

E.g. How does the movement and orbits of the Earth and the Moon affect my life on Earth?