

Whole School Curriculum Overview – Science (Physics)

	Milestone 1 (Year 1 & 2)	Milestone 2 (Year 3 & 4)	Milestone 3 (Year 5 & 6)
To work scientifically	Ask simple questions.	Ask relevant questions.	Plan enquiries, including recognising and controlling variables where necessary.
	Observe closely, using equipment.	Set up simple practical enquiries and comparative fair tests.	Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work.
	Perform simple tests.	Make accurate measurements using standard units, using a range of equipment, eg. Thermometers and data loggers.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision.
	Identify and classify.	Gather, record, classify and present data in a variety of ways to help answering questions.	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs and models.
	Use observations and ideas to suggest answers to questions.	Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables,	Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships and conclusions.
	Gather and record data to help in answering questions.	Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	Present findings in written forms, displays and other presentations.
		Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests.	Use test results to make predictions to set up further comparative and fair tests.
		Identify similarities, differences or changes related to simple scientific ideas and processes,	Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.
		Use straightforward, scientific evidence to answer questions or to support their findings.	
To understand movement, forces & magnets	Notice and describe how things move, using single comparisons such as faster and slower.	Notice that some forces need contact between two objects and some forces act at a distance.	Describe magnets as having two poles.
	Compare how different things move.	Observe how magnets attract or repel each other and attract some materials and not others.	Predict whether two magnets will attract or repel each other, depending on which poles are facing.
	Observe the apparent movement of the sun during the day.	Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet and identify some magnetic materials.	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
	Observe the changes across the four seasons.		Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces.
	Observe and describe weather associated with the seasons and how day length varies.		Describe, in terms of drag forces, why moving objects that are not driven tend to slow down.
			Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.
Light and seeing	Observe and name a variety of sources of light, including electric lights, flames and the Sun, explaining that we see things because light travels from them to our eyes.	Notice that light is reflected from surfaces.	Understand that light appears to travel in straight lines.
		Associate shadows with a light source being blocked by something; find patterns that determine the size of the shadows.	Use the idea that lights travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes.
			Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.
Sound/hearing	Observe and name a variety of sources of sound, noticing that we hear with our ears.	Identify how sounds are made, associating some of them with something vibrating.	Find patterns between the pitch of sound and features of the object that produced it.
		Recognise that sounds get fainter as the distance from the sound’s source increases.	Find patterns between the volume of a sound and the strength of vibrations that produced it.
Electrical circuits	Identify common appliances that run on electricity.	Identify whether or not a lamp will light is a simple series circuit based on whether or not the lamp is part of a complete loop with a battery.	Identify and name the basic parts of a simple electrical circuit, including cells, wires, bulbs, switches and buzzers.
	Construct a simple series electrical circuit.	Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.	Associate the brightness of a lamp of the volume of a buzzer with the number and voltage of cells used in a circuit.
		Recognise some common conductors and	Compare and give reasons for variations in

		insulators and associate metals with being good conductors.	how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.
Earth's movement in space	Observe the apparent movement of the Sun during the day	Describe the movement of the Earth relative to the Sun in the solar system.	Describe the Sun, Earth and Moon as approximately spherical bodies.
	Observe changes across the four seasons.	Describe the movement of the Moon relative to the earth.	Use the idea of the Earth's rotations to explain day and night.
	Observe and describe weather associated with the seasons and how day length varies.		