



Progression of Science Knowledge at South Failsworth Primary School

Physics

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Seasonal changes	<ul style="list-style-type: none">• Develop an understanding of growth, decay and changes over time.• Look closely at similarities, differences, patterns and change• Make observations of animals and plants and explain why some things occur, and talk about changes. <p>We explore seasonal changes and go on an autumn/ spring walk etc.</p>	<ul style="list-style-type: none">• Observe changes across the four seasons.• Observe and describe weather associated with the seasons and how day length varies.					



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Light	<ul style="list-style-type: none">• Talk about some of the things they've observed.• Talk about why things happen and how things work. <p>We explore the importance of light for growth.</p> <p>We explore shadows and creating shadow puppets.</p> <p>Torches are always in the investigation areas for the children to explore, as well as other resources to develop their understanding of light – coloured paddles etc.</p>			<ul style="list-style-type: none">• Recognise that they need light in order to see things and that dark is the absence of light.• Notice that light is reflected from surfaces.• Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.• Recognise that shadows are formed when the light from a light source is blocked by an opaque object.• Find patterns in the way that the size of shadows change.			<ul style="list-style-type: none">• Recognise that light appears to travel in straight lines.• Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.• Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.• Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.



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Forces and magnets	<ul style="list-style-type: none">• Talk about some of the things they've observed, such as objects.• Talk about why things happen and how things work.• Know about similarities and differences in relation to objects and materials. <p>We always have magnets out in our investigation areas and the children explore these regularly. They enjoy discovering what is and isn't magnetic.</p>			<ul style="list-style-type: none">• Compare how things move on different surfaces.• Notice that some forces need contact between two objects, but magnetic forces can act at a distance.• Observe how magnets attract or repel each other and attract some materials and not others.• 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.• Describe magnets as having two poles.• Predict whether two magnets will attract or repel each other, depending on which poles are facing.		<ul style="list-style-type: none">• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.• Identify the effects of air resistance, water resistance and friction that act between moving surfaces.• Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	



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Sound	<ul style="list-style-type: none">• Talk about some of the things they've observed, such as objects.• Talk about why things happen and how things work.• Know about similarities and differences in relation to objects and materials. <p>We explore a variety of musical instruments, and experiment with volume, tempo etc.</p>				<ul style="list-style-type: none">• Identify how sounds are made, associating some of them with something vibrating.• Recognise that vibrations from sounds travel through a medium to the ear.• Find patterns between the pitch of a sound and features of the object that produced it.• Find patterns between the volume of a sound and the strength of the vibrations that produced it.• Recognise that sounds get fainter as the distance from the sound source increases.		



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Electricity	<ul style="list-style-type: none">• Talk about some of the things they've observed, such as objects.• Talk about why things happen and how things work.• Know about similarities and differences in relation to objects and materials. <p>We explore a variety of electrical toys and equipment from the everyday microwave melting chocolate and the use of the interactive board, iPads and computer.</p> <p>To Beebots, remote control cars and code-a-pillars.</p> <p>We always have torches in our investigation areas too.</p>				<ul style="list-style-type: none">• Identify common appliances that run on electricity.• Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.• Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.• Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.• Recognise some common conductors and insulators, and associate metals with being good conductors.		<ul style="list-style-type: none">• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.• Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.• Use recognised symbols when representing a simple circuit in a diagram.



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Earth and space	<ul style="list-style-type: none">• Know about similarities and differences in relation to places, objects, materials and living things.• Talk about the features of their own immediate environment and how environments might vary from one another. <p>During our 2 year cycle the children enjoy a space topic where we learn about the 8 main planets.</p> <p>We compare the planets and explore their similarities, differences, distinguishing features etc.</p> <p>We become fact finders and the children quite confidently recall facts about the various planets.</p>					<ul style="list-style-type: none">• 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.	