



St Mary's CE Primary Progression of Skills- KS2 Physics

| Skills Progression: Physics- Key Stage 2 | Year 3 | Year 4 | Year 5 | Year 6 | End of Key Stage Expectations |
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| Area Earth and Space | | | <p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>Describe the movement of the Moon relative to the Earth.</p> <p>Describe the Sun, Moon and Earth as approximately spherical bodies.</p> <p>Use the idea of the earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p> | | <p>Describe the shapes and relative movements of the Sun, Moon, Earth and other planets in the solar system; and explain the apparent movement of the sun across the sky in terms of the Earth's rotation and that this results in day and night (year 5).</p> |
| Area 2 Light | <p>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.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light</p> | | | <p>Recognise that light appears to travel in straight lines.</p> <p>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.</p> <p>Explain that we see things because light travels from light</p> | <p>Use the idea that light from light sources, or reflected light, travels in straight lines and enters our eyes to explain how we see objects (year 6), and the formation (year 3), shape [year 6] and size of shadows (year 3).</p> |



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| | <p>from a light source is blocked by a solid object.</p> <p>Find patterns in the way that the size of shadows change.</p> | | | <p>sources to our eyes or from light sources to objects and then to our eyes.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> | |
| Area 3 Sound | | <p>Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between volume of sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p> | | | <p>Use the idea that sounds are associated with vibrations, and that they require a medium to travel through, to explain how sounds are made and heard (year 4).</p> <p>Describe the relationship between the pitch of a sound and the features of its source; and between the volume of a sound, the strength of the vibrations and the distance from its source (year 4).</p> |



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| Area 4 Electricity | | <p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p><input type="checkbox"/> 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.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> | | <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>Compare and give the reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</p> <p>Use recognised symbols when representing a simple circuit in a diagram.</p> | <p>Use simple apparatus to construct and control a series circuit, and describe how the circuit may be affected when changes are made to it; and use recognised symbols to represent simple series circuit diagrams (year 6).</p> |
| Area 5 Forces and Magnets | <p>Compare how things move on different surfaces.</p> <p><input type="checkbox"/> Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p><input type="checkbox"/> Observe how magnets attract or repel each other</p> | | <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p><input type="checkbox"/> Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</p> | | <p>Describe the effects of simple forces that involve contact (air and water resistance, friction) (year 5), that act at a distance (magnetic forces, including those between like and unlike magnetic poles) (year 3), and gravity (year 5).</p> |



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| | <p>and attract some materials and not others.</p> <p>□ 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.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> | | <p>Recognise that some mechanisms, including levers, pulleys and gear, allow a smaller force to have a great effect.</p> | | <p>Identify simple mechanisms, including levers, gears and pulleys, that increase the effect of a force (year 5).</p> |
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