

Science – Physics (Substantive Knowledge)				
	EY & KS1	KS2	KS3	KS4
Green Pathway	<p>Know the names of the four seasons.</p> <p>Know the names of simple weather types (sun, snow, wind, rain).</p> <p>Know clothing suitable for different types of weather.</p> <p>Know the concepts light and dark.</p>	<p>Know the changes in weather across the four seasons, including changes in hours of daylight.</p> <p>Know we need light to see things and dark is the absence of light.</p> <p>Know light is reflected from surfaces.</p> <p>Know about the dangers of looking at direct sunlight and how to protect our eyes.</p> <p>Know a shadow is formed when light from a light source is blocked by an opaque object.</p> <p>Know how a shadow changes shape and size.</p> <p>Know about and describe how objects move on different surfaces.</p> <p>Know some forces need contact between two objects, however magnetic forces can act at a distance.</p> <p>Know how magnets attract or repel each other, attracting some materials and not others.</p> <p>Know how to compare and group materials around whether they are attracted to a magnet, identifying some magnetic materials.</p> <p>Know magnets have two poles.</p> <p>Know how to predict whether two magnets will attract or repel each other.</p>	<p>Know how sounds are made, associating some of them with vibrating.</p> <p>Know vibrations from sounds travel through a source to the ear.</p> <p>Know links between pitch of a sound and features of the object that produced it.</p> <p>Know links between volume of a sound and strength of vibrations that produced it.</p> <p>Know that sounds get fainter the greater the distance from the sound source.</p> <p>Know names of some common appliances which use electricity.</p> <p>Know how to construct a simple series electrical circuit, naming its basic parts (cells, wires, bulbs, switches, buzzers).</p> <p>Know how to test whether a lamp will light within a simple series circuit with a battery.</p> <p>Know a switch opens and closes a circuit.</p> <p>Know names of some common conductors and insulators, associating metals with being good conductors.</p>	<p>AQA ELC Science</p> <p><i>Physics Component 5 – Energy, forces and the structure of matter:</i></p> <p>Know forces are pushes or pulls, and if a force causes an object to move then work is done and energy is transferred.</p> <p>Know energy cannot be created or destroyed but can be stored in many different ways, although when energy changes to being stored in a different way, some is always 'wasted' as heat.</p> <p>Know a braking force will cause an energy transfer that makes a vehicle slow down and heats the brakes.</p> <p>Know the braking distance of a vehicle depends on many different things, such as the speed of the vehicle – speed being measured in units such as miles per hour or metres per second.</p> <p>Know the energy resources available to use may be divided into renewable and non-renewable.</p> <p>Know energy can also be released from atoms, which contain smaller particles such as neutrons and protons in the nucleus, because atoms can break down to emit particles or gamma rays.</p> <p><i>Physics Component 6 – Electricity, Magnetism and Waves:</i></p> <p>Know electricity is used in domestic and industrial situations to supply energy.</p> <p>Know electric current is a flow of electrical charge and measured in amps. Know direct current (d.c.) is supplied by cells and alternating current (a.c.) is supplied by the mains, but in both cases the size of the current depends on the resistance in the circuit.</p> <p>Know when a current flows through a coil of wire an electromagnet is formed, which like permanent magnets, can exert a force over a distance.</p> <p>Know electric currents can also be used to produce electromagnetic waves, which have many uses including the transmission of information and the transfer of energy from one place to another.</p>
Purple Pathway	<p>Begin to know the names of the four seasons.</p> <p>Begin to know the names of simple weather types (sun, snow, wind, rain).</p> <p>Begin to know clothing suitable for different types of weather.</p> <p>Begin to know the concepts light and dark.</p>	<p>Begin to know the changes in weather across the four seasons, including changes in hours of daylight.</p> <p>Begin to know we need light to see things and dark is the absence of light.</p> <p>Begin to know light is reflected from surfaces.</p> <p>Begin to know about the dangers of looking at direct sunlight and how to protect our eyes.</p> <p>Begin to know a shadow is formed when light from a light source is blocked by an opaque object.</p> <p>Begin to know how a shadow changes shape and size.</p> <p>Begin to know about and describe how objects move on different surfaces.</p> <p>Begin to know some forces need contact between two objects, however magnetic forces can act at a distance.</p> <p>Begin to know how magnets attract or repel each other, attracting some materials and not others.</p> <p>Begin to know how to compare and group materials around whether they are attracted to a magnet, identifying some magnetic materials.</p> <p>Begin to know magnets have two poles.</p> <p>Begin to know how to predict whether two magnets will attract or repel each other.</p>	<p>Begin to know how sounds are made, associating some of them with vibrating.</p> <p>Begin to know vibrations from sounds travel through a source to the ear.</p> <p>Begin to know links between pitch of a sound and features of the object that produced it.</p> <p>Begin to know links between volume of a sound and strength of vibrations that produced it.</p> <p>Begin to know that sounds get fainter the greater the distance from the sound source.</p> <p>Begin to know names of some common appliances which use electricity.</p> <p>Begin to know how to construct a simple series electrical circuit, naming its basic parts (cells, wires, bulbs, switches, buzzers).</p> <p>Begin to know how to test whether a lamp will light within a simple series circuit with a battery.</p> <p>Begin to know a switch opens and closes a circuit.</p> <p>Begin to know names of some common conductors and insulators, associating metals with being good conductors.</p>	<p>AIM Qualifications Entry Level in Science</p> <p><i>Electricity and Energy:</i></p> <p>Know the basic principles of electricity.</p> <p>Know how to use electricity safely.</p> <p>Know how electricity is made.</p> <p><i>Light & Sound:</i></p> <p>Know some of the properties of light and sound.</p> <p>Know some of the dangers and uses of light and sound.</p> <p>Be able to investigate light and sound.</p>
Orange Pathway	<p>Be aware of the four seasons.</p> <p>Be aware of simple weather types (sun, snow, wind, rain).</p> <p>Be aware of clothing suitable for contrasting weather (rain and sun).</p>	<p>Be aware of seasonal changes.</p> <p>Be aware of light and dark.</p> <p>Be aware of shadows and how my body can make a shadow with a light source.</p> <p>Be aware of dangers associated with looking at direct sunlight and how eyes can be protected.</p> <p>Know objects can be pushed and pulled across different surfaces.</p> <p>Be aware of magnets having two poles and how they are attracted to each other or repel each other.</p>	<p>Be aware of how sounds are made, exploring vibrations.</p> <p>Be aware of how the volume of sounds is effected by the distance of the sound source.</p> <p>Know some everyday common appliances which use electricity.</p> <p>Be aware of how to construct a simple series electrical circuit (cells, wires, bulbs, switches, buzzers).</p>	<p>ASDAN Life Skills Challenge</p> <p><i>Using and Staying Safe Around Electricity:</i></p> <p>Know which everyday objects are powered by electricity.</p> <p>Begin to know how to create a simple circuit.</p> <p>Begin to know how to safe around electricity.</p> <p><i>Learning About Sound:</i></p> <p>Know how to identify sounds in different locations through experience.</p> <p>Begin to know sounds are made from vibrations through experience.</p> <p>Begin to know whether self-made sounds are loud or quiet.</p> <p>Know how to produce high and low pitch sounds using instruments.</p> <p><i>Exploring Light and Shadows:</i></p> <p>Know how to create shadows.</p> <p>Begin to know how to identify and operate a light source.</p>