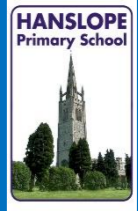


PHYSICS

Progression of Knowledge, Skills and Vocabulary



EYFS	KS1		LKS2		UKS2	
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Early adopter ELG's listed in Biology document	<p>Seasonal changes NC Pupils should be taught to:</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. <ul style="list-style-type: none"> • I can observe changes across the four seasons • I can observe and describe weather associated with the seasons and how day length varies <p>Vocabulary Season, spring, summer, autumn, winter, weather, hot, warm, cool cold, sunny, cloudy, windy, rainy, snowing, hailing, sleet, frost, fog, mist, icy, rainbow, thunder, lightning, storm, light, dark, day, night</p>	No physics				
			<p>Light NC Pupils should be taught to:</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 			<p>Light NC Pupils should be taught to:</p> <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

			<ul style="list-style-type: none"> ♣ 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"> • I recognise that light is necessary to see things • I notice that light is reflected from some surfaces • I recognise that light from the sun can be dangerous and that there are ways to protect eyes • I recognise that shadows are formed when light is blocked by a solid object • I can notice that shadow length changes according to the position of light source (including the position of the sun) <p>Vocabulary Light, light source, darkness, reflect, reflective, mirror, shadow, block, direction, transparent, opaque, translucent</p>			<ul style="list-style-type: none"> ♣ use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. <ul style="list-style-type: none"> • I can recognise that light travels in straight lines • I can explain how objects are seen using the idea that light travels in straight lines • I can explain that we see things because light travels from light sources to our eyes (or via reflections) • I can use the idea that light travels in straight lines to explain that shadows have the same shape as the objects that cast them <p>Vocabulary Light, light source, darkness, reflect, reflective, shadow, block, absorb, direction, transparent, opaque, translucent</p>
			<p>Forces and magnets NC <i>Pupils should be taught to:</i></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 			<p>Forces and magnets NC <i>Pupils should be taught to:</i></p> <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. <ul style="list-style-type: none"> • I can explain that objects fall to Earth due to gravity

			<p>♣ <i>predict whether two magnets will attract or repel each other, depending on which poles are facing.</i></p> <ul style="list-style-type: none"> • I can compare how things move on different surfaces • I recognise that some forces need contact between 2 objects, but magnetic forces can act at a distance • I can observe that magnets attract or repel each other and attract some materials but not others • I can group a variety of everyday materials according to their magnetic properties • I can describe magnets as having 2 poles • I can predict whether 2 magnets will attract or repel each other, depending on which poles are facing and associate this with whether or not a lamp lights in a simple series circuit • I can name some common conductors and insulators and know that metals are good conductors <p>Vocabulary Force, contact force, non-contact force, magnetic force, magnet, strength, bar/ring/button/horses hoe magnets, attract, repel, magnetic material, metal, iron, steel, non-magnetic, poles, north/south pole</p>		<ul style="list-style-type: none"> • I can explain the effects of air and water resistance and friction • I recognise that some mechanisms, inc. levers, pulleys and gears allow a smaller force to have a greater effect • I can describe how friction affects the movement of objects <p>Vocabulary Fall, Earth, gravity, weight, mass, air resistance, water resistance, friction, moving surfaces, mechanisms, levers, pulleys, gears, force, transfers</p>	
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				<p>Electricity NC <i>Pupils should be taught to:</i></p>		<p>Electricity NC <i>Pupils should be taught to:</i></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"> • I can name appliances that run on electricity and know which need mains electricity, battery power or either. • I can make a simple series electrical circuit and name the basic parts of cells, wires, bulbs, switches and buzzers • I can 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 • I can use a simple switch in a circuit that opens and close <p>Vocabulary</p> <p>Electricity, appliance, device, mains, plug, electrical circuit, complete circuit, circuit diagram, circuit symbol, components, cell, battery, positive/negative, connect, connection, short circuit, wire, crocodile clip, bulb, bright/dim, switch, buzzer, motor, faster/slower,</p>		<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. <ul style="list-style-type: none"> • I understand how lamp brightness and buzzer volume is affected by the voltage in a circuit • I can use recognised symbols to create a simple circuit diagram • I can compare and give reasons for variations in how components function inc. the brightness of bulbs, the loudness of buzzers and the on/off position of switches <p>Vocabulary</p> <p>Electricity, appliance, device, electrical circuit, complete circuit, circuit diagram, circuit symbol, components, cell, battery, positive, negative, terminal, connection, short circuit, wire, crocodile clip, bulb, bright/dim, switch, buzzer, volume, motor, conductor, insulator, voltage, current, resistance,</p>
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				conductor, insulator, metal/non-metal			
					<p>Earth and Space NC <i>Pupils should be taught to:</i></p> <ul style="list-style-type: none"> ♣ <i>describe the movement of the Earth, and other planets, relative to the Sun in the solar system</i> ♣ <i>describe the movement of the Moon relative to the Earth</i> ♣ <i>describe the Sun, Earth and Moon as approximately spherical bodies</i> ♣ <i>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</i> <ul style="list-style-type: none"> • I can describe the movement of the Earth and other planets relative to the sun in the solar system • I can describe the movement of the moon relative to the Earth • I can describe the sun, Earth and moon as spherical • I can explain the process of day and night using the concept of the Earth's rotation • I can explain the way the Sun's (and shadows) position appears to change through the day with reference to the earth's rotation <p>Vocabulary Earth, planets, sun, solar system, moon, celestial body, spherical, rotation, spin, night and day, names of planets, dwarf planet, orbit, geocentric model, heliocentric model, shadow clocks, sundials, astronomical clocks</p>		