

# SCIENCE KNOWLEDGE & SKILLS PROGRESSION - PLANTS



*“The important thing is to never stop questioning.”  
~Albert Einstein*



EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
	<p>I can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>I can identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>I can observe and describe how seeds and bulbs grow into mature plants.</p> <p>I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p><b>I know that water and warmth helps seeds germinate.</b></p> <p>I can explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) <b>and the correct temperature</b> and how they vary from plant to plant.</p> <p>I can investigate the way in which water is transported within plants. <b>Water, taken in by the roots, goes up the stem to the leaves, flowers and fruit</b></p> <p>I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p>No Plants unit – these objectives are from Living Things and their Habitats to show possible links</p> <p>I can recognise that living things can be grouped in a variety of ways.</p> <p>I can explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>I can recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p><b>Non Statutory- could be Year 5 or 6)</b> <b>I can describe how seed dispersal ensures that new plants survive.</b></p> <p><b>I can describe how nutrients are taken in through plant roots.</b></p> <p><b>I can recognise that leaves use light to make food for the plant.</b></p> <p><b>I can find out and describe how keys are a way of identifying different living things, including plants.</b></p> <p>No Plants unit – these objectives are from Living Things and their Habitats to show possible links</p> <p>I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>I can describe the life process of reproduction in some plants and animals.</p>	<p>No Plants unit – these objectives are from Living Things and their Habitats to show possible links</p> <p>I can describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.</p> <p>I can give reasons for classifying plants and animals based on specific characteristics.</p>

# SCIENCE KNOWLEDGE & SKILLS PROGRESSION - FORCES & MAGNETS

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~Albert Einstein*



EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
			<p>I can compare how things move on different surfaces.</p> <p>I can notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>I can observe how magnets attract or repel each other and attract some materials and not others.</p> <p>I can 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>I can describe magnets as having two poles.</p> <p>I can predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>		<p>I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>I can identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p> <p>I can recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.</p> <p><i>Also links to Properties of Materials: magnetic or not?</i></p>	

# SCIENCE KNOWLEDGE & SKILLS PROGRESSION - ANIMALS (INC HUMANS)

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~Albert Einstein*



EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
<p>ELG 14 The world: Children will know about similarities and differences in relation to places, objects, materials and living things</p> <p>They will talk about the features of their own immediate environment and how environments might vary from one another.</p> <p>Children make observations of animals and plants and explain why some things occur, and talk about changes</p>	<p>I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>I can identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>I can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>	<p>I can notice that animals, including humans, have offspring which grow into adults.</p> <p>I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>I can identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</p> <p>I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>I can describe the simple functions of the basic parts of the digestive system in humans.</p> <p>I can identify the different types of teeth in humans and their simple functions.</p> <p>I can construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>I can describe the changes as humans develop to old age.</p>	<p>I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>I can describe the ways in which nutrients and water are transported within animals, including humans.</p>

# SCIENCE KNOWLEDGE & SKILLS PROGRESSION - LIGHT

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~Albert Einstein*



EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
	<i>No Light unit but there are links to 'Everyday Materials'</i>	<i>No Light unit but there are links to 'Use of Everyday Materials'</i>	<p>I can recognise that we need light in order to see things and that dark is the absence of light.</p> <p>I can notice that light is reflected from surfaces.</p> <p>I can recognise that light from the sun can be dangerous and that there are ways to protect our eyes.</p> <p>I can recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>I can find patterns in the way the size of shadows change.</p>	<i>No Light unit but there are links to 'Electricity'</i>	<i>No Light unit but there are links to 'Earth and Space'</i>	<p>I can recognise that light appears to travel in straight lines.</p> <p>I can 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>I can 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.</p> <p>I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>

# SCIENCE KNOWLEDGE & SKILLS PROGRESSION - ELECTRICITY

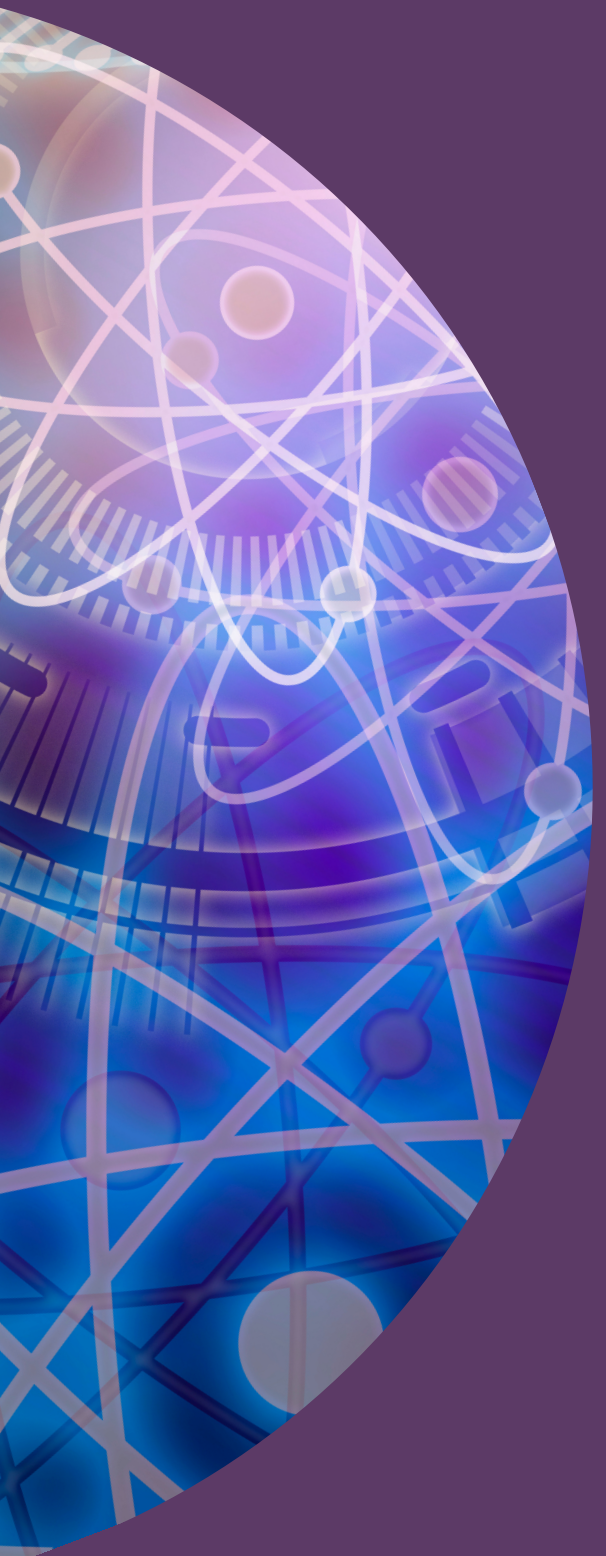
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EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
		No electricity unit	No electricity unit	<p>I can identify common appliances that run on electricity.</p> <p>I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells (batteries), wires, bulbs, switches and buzzers.</p> <p>I can identify whether or not a lamp (bulb) will light in a simple series circuit, based on whether or not the lamp (bulb) is part of a complete loop with a battery.</p> <p>I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp (bulb) lights in a simple series circuit.</p> <p>I can recognise some common conductors and insulators, and associate metals with being good conductors</p>	<p>No Electricity unit but there are links to 'Properties and Changes of Materials'</p> <p>(conductivity)</p>	<p>I can associate the brightness of a lamp (bulb) or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>I can 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.</p> <p>I can use recognised symbols when representing a simple circuit in a diagram.</p>

# SCIENCE KNOWLEDGE & SKILLS PROGRESSION - MATERIALS

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EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
	<p>I can distinguish between an object and the material from which it is made.</p> <p>I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>I can describe the simple physical properties of a variety of everyday materials.</p> <p>I can compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>No Materials unit – although 'Rocks' and 'Forces and Magnets' has links</p>	<p>No Materials unit – although 'States of Matter' has links</p>	<p>I can compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.</p> <p>I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>I can demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>I can explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</p>	<p>No Materials unit – although 'Electricity' and 'Light' have links .</p>

# SCIENCE KNOWLEDGE & SKILLS PROGRESSION - ADDITIONAL UNITS

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EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
	<p><b>Seasonal Changes</b> I can observe changes across the four seasons.</p> <p>I can observe and describe weather associated with the seasons and how day length varies</p>		<p><b>Rocks</b> I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>I can describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>I can recognise that soils are made from rocks and organic matter.</p> <p><b>Non Statutory (Yr 3/4) Earth and Space</b></p> <p>I can observe how the Sun appears to move across the sky from East to West.</p> <p>I can observe how the Sun appears to move and this causes shadows to change.</p> <p>I can describe how we can see the Moon because the Sun's light reflects off it.</p> <p>I can describe how the Earth and Moon go around the Sun in one year.</p> <p>I can recognise that humans have been to the Moon.</p>	<p><b>States of Matter</b> I can compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>I can observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).</p> <p>I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p><b>Sound</b> I can identify how sounds are made, associating some of them with something vibrating.</p> <p>I can recognise that vibrations from sounds travel through a medium to the ear.</p> <p>I can find patterns between the pitch of a sound and features of the object that produced it.</p> <p>I can find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>I can recognise that sounds travel away from their source.</p> <p>I can recognise that sounds get fainter as the distance from the sound source increases.</p>	<p><b>Earth and Space</b> I can describe the movement of the Earth and other planets relative to the sun in the solar system.</p> <p>I can describe the movement of the moon relative to the Earth.</p> <p>I can describe the sun, Earth and moon as approximately spherical bodies.</p> <p>I can 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><b>Non Statutory (Yr 5/6) Sound</b></p> <p>I can recognise that sounds can be high or low (pitched)</p> <p>I can describe how sounds are made when objects vibrate.</p> <p>I can recognise that not all objects can be seen to vibrate.</p> <p>I can recognise that vibrations can travel at different speeds through different mediums.</p>	<p><b>Evolution and Inheritance</b></p> <p>I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>I recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>

# SCIENCE KNOWLEDGE & SKILLS PROGRESSION - LIVING THINGS & HABITATS

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EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
<p>ELG 14 The world:</p> <p>Children know about similarities and differences in relation to places, objects, materials and living things</p> <p>They talk about the features of their own immediate environment and how environments might vary from one another</p> <p>They make observations of animals and plants and explain why some things occur, and talk about changes</p>	<p>No 'Living Things...' unit – see Animals including Humans for links</p>	<p>I can explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>I can identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.</p> <p>I can identify and name a variety of plants and animals in their habitats, including microhabitats.</p> <p>I can describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p>	<p>No 'Living Things...' unit – see Animals including Humans for links</p>	<p>I can recognise that living things can be grouped in a variety of ways.</p> <p>I can explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>I can recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p>I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>I can describe the life process of reproduction in some plants and animals.</p>	<p>I can describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.</p> <p>I can give reasons for classifying plants and animals based on specific characteristics.</p>



# SCIENCE KNOWLEDGE & SKILLS PROGRESSION - WORKING SCIENTIFICALLY SKILLS



	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
<b>Asking questions and recognising that they can be answered in different ways</b>	<p>Show curiosity and ask questions</p> <p>Make observations using their senses and simple equipment</p> <p>Make direct comparisons</p> <p>Use equipment to measure</p> <p>Record their observations by drawing, taking photographs, using sorting rings or boxes and, in Reception, on simple tick sheets</p> <p>Use their observations to help them to answer their questions</p> <p>Talk about what they are doing and have found out</p> <p>Identify, sort and group</p>	Asking simple questions and recognising that they can be answered in different way	Asking relevant questions and using different types of scientific enquiries to answer them	Asking relevant questions and using different types of scientific enquiries to answer them	Asking relevant questions and using different types of scientific enquiries to answer them	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
<b>Making observations and taking measurements</b>		Observing closely using simple equipment	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
<b>Engaging in practical enquiry to answer questions</b>		Performing simple tests	Setting up simple practical enquiries, comparative and fair tests	Setting up simple practical enquiries, comparative and fair tests	Setting up simple practical enquiries, comparative and fair tests	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
<b>Recording and presenting evidence</b>		Gathering and recording data to help in answering questions	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
<b>Answering questions and concluding</b>		Using their observations and ideas to suggest answers to questions	Identifying differences, similarities or changes related to simple scientific ideas and processes	Identifying differences, similarities or changes related to simple scientific ideas and processes	Identifying differences, similarities or changes related to simple scientific ideas and processes	Identifying scientific evidence that has been used to support or refute ideas or arguments	Identifying scientific evidence that has been used to support or refute ideas or arguments
		Using their observations and ideas to suggest answers to questions	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions		
<b>Evaluating and raising further questions and predictions</b>			Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
			Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions		
<b>Communicating their findings</b>			Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations