

Science Curriculum Progression Ladder

	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
BIOLOGY	<p><u>Us, our bodies and senses</u> Make simple observations about parts of the body</p> <p><u>Pets & Other Animals:</u> To observe closely and present results</p> <p>Can comment on how two, e.g. animals, are similar or different from each other; notice and describe how they change as they grow</p> <p>Sort e.g. living things, into two simple groups, using given criteria Communicate what they have learned through drawing.</p> <p><u>Habitats around us – who lives here?</u> To ask and answer science questions</p> <p>Ask and answer questions about what they have observed, e.g. Who lives where? Why do some animals live in dark places and some do not?</p> <p>Select equipment and materials to use to create e.g. a nest, or animal habitat (bug hotel, hedgehog home)</p> <p><u>Planting & Growing:</u> To observe closely and record results Make simple observations of e.g. size, shape, Comment on what they see as they investigate and on how things change over time Participate in class data collection.</p> <p><u>Farming:</u> To interpret results Communicate orally, in simple descriptions and explanations, e.g.</p>	<p><u>Animals Inc. Humans:</u> Identify & name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>Identify & name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Describe & compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p> <p>Identify, name, draw & label the basic parts of the human body and say which part of the body is associated with each sense</p> <p><u>Seasonal Changes:</u> Observe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies</p> <p><u>Plants:</u> Identify & name a variety of common wild and garden plants, including deciduous & evergreen trees</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees, (roots, leaves, flowers, stem)</p>	<p><u>Animals inc. Humans:</u> Find out about and describe the basic needs of animals, including humans, for survival (water, food, air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different food types, and hygiene</p> <p>All animals (inc humans) grow and change as they become older</p> <p><u>Living Things & Their Habitats:</u> Explore & compare the differences between things that are living, dead and things that have never been alive</p> <p>Identify that most living things live in habitats to which they are suited and describes how they are suited to that habitat</p> <p>Identify & name a variety of plants & animals in their habitats, including microhabitats</p> <p>Identify animals from a range of animal groups and describe their observable features</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of simple food chains and identify & name different sources of food</p> <p><u>Plants:</u> Observe & describe how seeds and bulbs grow into mature plants</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p> <p>To know what a seed needs in order to germinate</p> <p>That seeds produce new plants</p>	<p><u>Animals inc. Humans:</u> Identify that animals, including humans, need the right amount and types of nutrition.</p> <p>Animals and humans cannot make their own food; they get nutrition from what they eat</p> <p>Identify the different types of teeth in humans and their simple functions</p> <p><u>Plants:</u> Identify & describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>Explore the requirements of plants for life and growth (air, water, light, nutrients from the soil, room to grow) and how they vary from plant to plant</p> <p>Investigate the way water is transported within plants</p> <p>Explore the part that flowers play in the lifecycle of flowering plants, including pollination, seed formation and seed dispersal</p>	<p><u>Animals inc. Humans:</u> Identify that humans and some animals have skeletons and muscles for support, protection and movement</p> <p>Describe the basic parts of the digestive system in humans</p> <p>Construct and interpret a variety of food chains, identifying producers, predator, prey</p> <p><u>Living Things & Their Habitats:</u> Recognise that living things can be grouped in a variety of ways</p> <p>Explore & use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things</p> <p>Identify & name a variety of common animals that are birds, fish, amphibians, reptiles, mammals, carnivores, herbivores, omnivores and invertebrates</p>	<p><u>Animals inc. Humans:</u> Describe the changes as humans develop to old age</p> <p>Compare reproduction in plants with reproduction in animals</p> <p><u>Living Things & Their Habitats:</u> Describe the differences in the lifecycles of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life processes of reproduction in some plants and animals (eg. To know the life cycle of a flowering plant; how seeds are formed (pollen from male organ fertilises the ovum).</p> <p>Identify the main parts on a flowering plant, including those involved in the reproductive process</p>	<p><u>Animals inc. Humans:</u> Identify & name the main parts of the human circulatory system</p> <p>Describe the functions of the heart, blood vessels and blood</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans</p> <p><u>Living Things & Their Habitats:</u> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</p> <p>Give reasons for classifying plants and animals based on specific characteristics</p> <p><u>Evolution & Inheritance:</u> Recognise that living things have changed over time & that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p>

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	talk about a farm, which animals live there / plants grow there and the job of the farmer.		That flowering plants produce seeds				
CHEMISTRY	<p>Cooking & Baking: Make observations, comment on how things change, e.g. before and after, chopping, cooking, baking</p>	<p>Materials: Distinguish between an object and the material from which it is made</p> <p>Identify & name a variety of everyday materials, including wood, plastic, glass, metal, water, rock</p> <p>Describe simple physical properties of a variety of everyday materials</p> <p>Compare & group together a variety of everyday materials on the basis of their simple physical properties</p>	<p>Materials: Identify & compare the suitability of a variety of different materials, including wood, metal, plastic, glass, brick, paper, rock and cardboard for particular uses</p> <p>Find out how the shapes of solid objects made from materials can be changed by squashing, bending, stretching and twisting</p> <p>Some materials occur naturally and others don't</p>	<p>Materials: To compare materials in terms of hardness/strength/flexibility etc.</p> <p>That the same material can be used to make different objects</p> <p>That materials often change when they're cooled and heated</p> <p>Know that some materials are electrical and thermal insulators</p> <p>Know that some materials are electrical and thermal conductors</p> <p>Rocks: Compare & group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soils are made from rocks and organic matter</p>	<p>States of Matter: Describe, compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p>	<p>Materials: 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>Know that some materials will dissolve in liquid to form a solution</p> <p>Describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids & gases to decide how mixtures might be separated, including through sieving, filtering and evaporating</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>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>	

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PHYSICS	<p>Light and Materials: Be able to ask and answer questions (with support) in familiar contexts, e.g. What happens at night? What can we see when it's dark?</p> <p>Transport, Movement & Forces: To interpret results Communicate orally, in simple descriptions and explanations, e.g. how do we travel? How do things move?</p>	<p>Forces: That pushing or pulling things can make objects start or stop moving</p> <p>To observe and describe different ways of moving</p> <p>To know that things can be made to move by others means than ourselves (wind/water etc)</p> <p>Light: Shiny objects need a light source to shine. They ARE NOT sources of light</p> <p>Light is needed in order to see things and darkness is the absence of light</p> <p>Find patterns in the way that the size of shadows change</p>	<p>Forces: That pushes & pulls can change the shape of an object</p> <p>That pushes & pulls can make things speed up, slow down and change direction</p> <p>That pushes & pulls are an example of a force</p> <p>Electricity: Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>Identify common appliances that run on electricity</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>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>Magnets: Notice that magnetic forces can act at a distance</p> <p>Observe how magnets attract or repel each other 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>Light: Recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Notice that light is reflected from surfaces</p>	<p>Forces: Compare how different things move on different</p> <p>To know that friction is a force that slow moving objects and may prevent objects from starting to move</p> <p>To know when objects are pushed or pulled, an opposing pull or push can be felt</p> <p>To know how to measure forces and identify the direction in which they act</p> <p>Electricity: 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 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 diagram</p>	<p>Earth & Space: Describe the movement of the Earth and other planets, relative to the Sun in the solar system</p> <ul style="list-style-type: none"> It takes the Earth 1 year to orbit the Sun once The Moon takes 28 days to orbit the Earth once <p>Describe the movement of the Moon relative to the Earth</p> <ul style="list-style-type: none"> The different appearances of the Moon over 28 days provides evidence for a 28 day cycle <p>Describe the Sun, Earth and Moon as approximately spherical bodies and know their relative sizes</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>Sound: 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 objects that produced it</p> <p>Find patterns between the volume of a 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>Forces: Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</p> <p>That forces are measured in Newtons (N)</p> <p>Recognise that there are a variety of forces</p> <p>Recognise that forces act in particular directions and can affect direction/speed etc.</p> <p>Light: 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 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>
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WORKING SCIENTIFICALLY – Enquiry Type		<p><u>Animals inc. Humans:</u> Research from Secondary Sources</p> <p>Pattern Seeking</p> <p>Grouping & Classifying</p> <p><u>Seasonal Changes:</u> Observing changes over time</p> <p>Pattern Seeking/Noticing patterns</p> <p><u>Plants:</u> Grouping & Classifying</p> <p>Research from Secondary Sources</p> <p>Pattern Seeking</p> <p><u>Materials:</u> Comparative Testing</p> <p>Grouping & Classifying</p> <p><u>Forces:</u> Comparative Testing</p> <p>Grouping & Classifying</p> <p><u>Light:</u> Pattern seeking/Noticing patterns</p> <p>Grouping & Classifying</p>	<p><u>Animals inc. Humans:</u> Research from Secondary Sources</p> <p>(Observing changes over time)</p> <p>Pattern Seeking/Noticing patterns</p> <p>(Grouping & Classifying)</p> <p><u>Living Things & Their Habitats:</u> Grouping & Classifying</p> <p>Research from Secondary Sources</p> <p><u>Materials:</u> Grouping & Classifying</p> <p>Comparative Testing</p> <p><u>Plants:</u> Observing changes over time</p> <p>Comparative Testing</p> <p>Noticing Patterns/Pattern Seeking</p> <p><u>Electricity:</u> Grouping & Classifying</p> <p>Comparative Testing</p> <p><u>Forces:</u> Grouping & Classifying</p> <p>Comparative Testing</p> <p>(Research from Secondary Sources)</p>	<p><u>Animals inc. Humans:</u> Grouping & Classifying</p> <p>(Research from Secondary Sources)</p> <p>Pattern Seeking/Noticing Patterns</p> <p><u>Plants:</u> Grouping & Classifying</p> <p>(Comparative Testing)</p> <p>Observing Changes Over Time</p> <p>Research from Secondary Sources</p> <p><u>Rocks & Soils:</u> Grouping & Classifying</p> <p>Comparative Testing</p> <p>Research from Secondary Sources</p> <p><u>Light:</u> (Grouping & Classifying)</p> <p>Pattern Seeking/Noticing patterns</p> <p>Comparative Testing</p> <p><u>Magnets:</u> Grouping & Classifying</p> <p>Comparative & Fair Testing</p> <p><u>Materials:</u> Grouping & Classifying</p> <p>Comparative Testing</p>	<p><u>Animals inc. Humans:</u> Grouping & Classifying</p> <p>Research from secondary sources</p> <p><u>States of Matter:</u> Grouping & Classifying</p> <p>Observing Changes Over Time</p> <p>Carrying out comparative & fair testing</p> <p>Research from secondary sources</p> <p><u>Electricity:</u> Carrying out comparative & fair testing</p> <p>Research from secondary sources</p> <p><u>Living Things & Their Habitats:</u> Grouping & Classifying</p> <p>(Pattern Seeking/Noticing patterns)</p> <p>Research from secondary sources</p> <p><u>Forces:</u> Pattern seeking/Noticing patterns</p> <p>Comparative & Fair Testing</p>	<p><u>Animals inc. Humans:</u> Grouping & Classifying</p> <p>Research from Secondary Sources</p> <p><u>Living Things & Their Habitats:</u> Research from Secondary Sources</p> <p>Grouping & Classifying</p> <p><u>Sound:</u> Carrying out comparative & fair testing</p> <p>Pattern Seeking/Noticing patterns</p> <p><u>Earth & Space:</u> Research from Secondary Sources</p> <p>Pattern Seeking/Noticing patterns</p> <p><u>Properties of Materials:</u> Grouping & Classifying</p> <p>Carrying out Comparative & Fair Testing</p> <p>Observing Changes Over Time</p> <p>Research from Secondary Sources</p>	<p><u>Animals inc. Humans:</u> Research from Secondary Sources</p> <p>Pattern Seeking</p> <p>Carrying out comparative & fair testing</p> <p><u>Living Things & Their Habitats:</u> Grouping & Classifying</p> <p>Research from Secondary Sources</p> <p><u>Light:</u> Noticing Patterns/Pattern Seeking</p> <p>Carrying out comparative & Fair Tests</p> <p><u>Evolution & Inheritance:</u> Grouping & Classifying</p> <p>Research From Secondary Sources</p> <p><u>Forces:</u> Carrying out Comparative & Fair Testing</p> <p>Noticing Patterns/Pattern Seeking</p>
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WORKING SCIENTIFICALLY - Skills	<p>Animals inc. Humans: Observations</p> <p>Gathering, Recording, Communicating</p> <p>Seasonal Changes: Observations</p> <p>Gathering, recording and communicating</p> <p>Plants: Observations</p> <p>Gathering, Recording, Communicating</p> <p>Materials: Planning & Carrying Out</p> <p>Gathering, Recording, Communicating</p> <p>Forces: Planning and carrying out</p> <p>Gathering, recording and communicating</p> <p>Light: Planning & Carrying Out</p> <p>Gathering, Recording, Communicating</p> <p>Observations</p> <p>Concluding & Evaluating</p> <p><i>*Asking & Answering questions on-going through all topics</i></p>	<p>Animals inc. Humans: Planning and carrying out</p> <p>Concluding and evaluating</p> <p>Living Things & Their Habitats: Observations</p> <p>Planning and carrying out</p> <p>Gathering, recording and communicating</p> <p>Materials: Observations</p> <p>Planning and carrying out</p> <p>Gathering, recording and communicating</p> <p>Plants: Asking and answering questions</p> <p>Gathering, Recording, Communicating</p> <p>Electricity: Planning and carrying out</p> <p>Observations</p> <p>Forces: Observations</p> <p>Planning and carrying out</p> <p>Gathering, recording and communicating</p> <p><i>*Asking & Answering questions on-going through all topics</i></p>	<p>Animals inc. Humans: Observations</p> <p>Gathering, recording and communicating</p> <p>Asking and answering questions</p> <p>Planning and carrying out</p> <p>Plants: Asking and answering questions</p> <p>Observations</p> <p>Planning and carrying out</p> <p>Gathering, recording and communicating</p> <p>Rocks & Soils: Asking and answering questions</p> <p>Observations</p> <p>Gathering, recording and communicating</p> <p>Planning and carrying out</p> <p>Light: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Magnets: Asking and answering questions</p> <p>Observations</p> <p>Gathering, recording and communicating</p> <p>Planning and carrying out</p> <p>Concluding and evaluating</p> <p>Materials: Asking and answering questions</p>	<p>Animals inc. Humans: Asking and answering questions</p> <p>Observations</p> <p>Gathering, recording and communicating</p> <p>States of Matter: Asking and answering questions</p> <p>Observations</p> <p>Gathering, recording and communicating</p> <p>Planning and carrying out</p> <p>Concluding & Evaluating</p> <p>Electricity: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Gathering, recording and communicating</p> <p>Concluding and evaluating</p> <p>Living Things & Their Habitats: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Concluding and evaluating</p> <p>Forces: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Gathering, recording and communicating</p>	<p>Animals inc. Humans: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Concluding and evaluating</p> <p>Living Things & Their Habitats: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Concluding and evaluating</p> <p>Sound: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Concluding and evaluating</p> <p>Observations</p> <p>Gathering, recording and communicating</p> <p>Earth & Space: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Concluding and evaluating</p> <p>Gathering, recording and communicating</p> <p>Properties of Materials: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Observations</p>	<p>Animals inc. Humans: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Concluding and evaluating</p> <p>Observations</p> <p>Gathering, recording and communicating</p> <p>Living Things & Their Habitats: Asking & answering question</p> <p>Planning & Carrying out</p> <p>Concluding & Evaluating</p> <p>Light: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Gathering, recording and communicating</p> <p>Concluding and evaluating</p> <p>Observations</p> <p>Evolution & Inheritance: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Concluding and evaluating</p> <p>Forces: Asking and answering questions</p> <p>Planning and carrying out</p> <p>Observations</p>
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