



Christleton Primary School

Science

# Curriculum Design



**Look up**



**Look out**



**Look beyond**

# Curriculum Delivery



## Ignite

**Introduction** of the Context for Learning

A question is used to spark interest.

Pre-planning.

Describe, list, outline, find, label, draw, match.

Pre-planning questions are used to shape how learning takes place, drawing objectives from the national curriculum and key skills from our skills progression documents.



## Explore

**Exploration** of the Context for learning

Sequence, classify, compare and contrast, explain (cause and effect), analyse, organise, distinguish, question, relate, apply, link prior learning.

The planned sequence of learning is followed to provide the children with the knowledge and skills required. Additions may be made in response to events, further questions, assessments or responding to the interests of the children.



## Reflect

**Reflection** on the Context for Learning

Generalise, predict, evaluate, reflect, hypothesise, theorise, create, prove, justify, argue, compose, design, construct, perform.

The children are able to communicate their learning to others via a variety of means.

Year 1

<b>Working Scientifically</b>			
<b>Plan</b>	<b>Do</b>	<b>Record</b>	<b>Review</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> ask simple questions and recognising that they can be answered in different ways and using different types of scientific enquiries to answer them</li> <li><input type="checkbox"/> with help begin to choose ways to try and answer a question</li> <li><input type="checkbox"/> take a few guided planning decisions</li> <li><input type="checkbox"/> recognise when simple test' s unfair</li> <li><input type="checkbox"/> make own suggestions on how to collect data once the data needed has been outlined</li> <li><input type="checkbox"/> make simple prediction if appropriate (based on something they have observed before but without an explanation)</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> observe closely, using simple equipment</li> <li><input type="checkbox"/> Perform simple tests</li> <li><input type="checkbox"/> make observations related to the task or test</li> <li><input type="checkbox"/> use simple equipment provided</li> <li><input type="checkbox"/> measure using uniform non- standard units (e.g. straws) or simple standard units and measuring equipment - meter stick, cm, kg masses, l, jugs &amp; second timer</li> <li><input type="checkbox"/> compare 3 or more things</li> <li><input type="checkbox"/> Read scales to nearest labelled division.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> draw pictures of results/ take photos</li> <li><input type="checkbox"/> help teacher make a class table or chart</li> <li><input type="checkbox"/> complete a simple chart or two column table</li> <li><input type="checkbox"/> make practical block graphs/pictograms</li> <li><input type="checkbox"/> make/draw a block graph with a 1:1 scale</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> use observations and ideas to suggest answers to questions</li> <li><input type="checkbox"/> describe observations</li> <li><input type="checkbox"/> say what they have found out</li> <li><input type="checkbox"/> say whether what happened was what they expected</li> </ul>

<b>Plants</b>	<b>Uses of Every Day Materials</b>	<b>Animals including Humans</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Can I identify and name a variety of common wild and garden plants, including deciduous and evergreen trees?</b></li> <li><input type="checkbox"/> <b>Can I identify and describe the basic structure of a variety of common flowering plants, including trees?</b></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I distinguish between an object and the material from which it is made?</li> <li><input type="checkbox"/> <b>Can I identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock?</b></li> <li><input type="checkbox"/> <b>Can I describe the simple physical properties of a variety of everyday materials?</b></li> <li><input type="checkbox"/> Can I compare and group together a variety of everyday materials on the basis of their simple physical properties?</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Can I identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals?</b></li> <li><input type="checkbox"/> <b>Can I identify and name a variety of common animals that are carnivores, herbivores and omnivores?</b></li> <li><input type="checkbox"/> Can I describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)?</li> <li><input type="checkbox"/> Can I identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense?</li> </ul>
<b>Seasonal Changes</b>		
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Can I observe changes across the four seasons?</b></li> <li><input type="checkbox"/> <b>Can I observe and describe weather associated with the seasons and how day length varies?</b></li> </ul>		
<b>Vocabulary</b>		
<p>leaf, flower, petal, fruit, berry, root, seed, trunk, branch, stem, bark  head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, hair  senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue, carnivore, omnivore, herbivore  object, material, wood, plastic, glass, metal, water, rock, brick paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft  stretchy, stiff, flexible, rigid, waterproof, absorbent, breaks, tears, rough, smooth, shiny, dull, transparent, opaque  season, autumn, winter, spring, summer, weather (sunny, rainy, windy, snowy) sunrise, sunset, day length</p>		

## Progression in identification and classification

By the End of Year Two	By the End of Year Four	By the end of Year Six
<p><b>Identifying and classifying</b></p> <ul style="list-style-type: none"> <li>□ compare observable and behavioural features of living things, materials and objects</li> <li>□ sort and group in own way using both observable and behavioural features even when differences are slight</li> <li>□ answer simple yes/no questions about a mystery object they have chosen</li> <li>□ sort into two groups in which one group has a feature and the other doesn't</li> <li>□ once they have decided sorting criteria explain where further additional items could be placed</li> <li>□ use simple Venn diagrams to help sort things and record the groupings</li> </ul>	<p><b>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</b></p> <ul style="list-style-type: none"> <li>□ use Carroll and Venn diagrams to help sort things and record the groupings, sometimes re-sorting using different criteria</li> <li>□ make simple branching data bases/ classification keys to for a few (3-6) things with easily observable differences and that can be named</li> <li>□ use simple classification keys/ branching data bases to identify unknown items that have easily observable differences in their features</li> <li>□ Carry out simple tests and sort and group based on the evidence of the results found.</li> </ul>	<p><b>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</b></p> <ul style="list-style-type: none"> <li>□ Be aware of the term kingdom and know that most scientists classify things into five kingdoms.</li> <li>□ Through direct observations where possible classify animals into vertebrates and invertebrates.</li> <li>□ make keys and branching databases with 4 or more items</li> <li>□ evaluate how well keys and databases work and make changes to improve them</li> <li>□ explain why it is important to classify and why it is useful to scientists</li> <li>□ plan what to test, how to test and collect evidence in order to classify</li> </ul>

Year 2

Working Scientifically			
Plan	Do	Record	Review
<ul style="list-style-type: none"> <li><input type="checkbox"/> ask simple questions and recognising that they can be answered in different ways and using different types of scientific enquiries to answer them</li> <li><input type="checkbox"/> with help begin to choose ways to try and answer a question</li> <li><input type="checkbox"/> take a few guided planning decisions</li> <li><input type="checkbox"/> recognise when simple test' s unfair</li> <li><input type="checkbox"/> make own suggestions on how to collect data once the data needed has been outlined</li> <li><input type="checkbox"/> make simple prediction if appropriate (based on something they have observed before but without an explanation)</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> observe closely, using simple equipment</li> <li><input type="checkbox"/> Perform simple tests</li> <li><input type="checkbox"/> make observations related to the task or test</li> <li><input type="checkbox"/> use simple equipment provided</li> <li><input type="checkbox"/> measure using uniform non-standard units (e.g. straws) or simple standard units and measuring equipment - meter stick, cm, kg masses, l, jugs &amp; second timer</li> <li><input type="checkbox"/> compare 3 or more things</li> <li><input type="checkbox"/> Read scales to nearest labelled division.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> gather and record data to help in answering questions (Year 2 only)</li> <li><input type="checkbox"/> draw pictures of results/ take photos</li> <li><input type="checkbox"/> help teacher make a class table or chart</li> <li><input type="checkbox"/> complete a simple chart or two column table</li> <li><input type="checkbox"/> make practical block graphs/pictograms</li> <li><input type="checkbox"/> make/draw a block graph with a 1:1 scale</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> use observations and ideas to suggest answers to questions</li> <li><input type="checkbox"/> describe observations</li> <li><input type="checkbox"/> say what they have found out</li> <li><input type="checkbox"/> say whether what happened was what they expected</li> </ul>

<b>Plants</b>	<b>Living Things and Their Environment</b>	<b>Animals Including Humans</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Can I observe and describe how seeds and bulbs grow into mature plants?</b></li> <li><input type="checkbox"/> <b>Can I find out and describe how plants need water, light and a suitable temperature to grow and stay healthy?</b></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I explore and compare the differences between things that are living, dead, and things that have never been alive?</li> <li><input type="checkbox"/> <b>Can I 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?</b></li> <li><input type="checkbox"/> <b>Can I identify and name a variety of plants and animals in their habitats, including micro-habitats?</b></li> <li><input type="checkbox"/> Can I 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?</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Can I notice that animals, including humans, have offspring which grow into adults?</b></li> <li><input type="checkbox"/> <b>Can I find out about and describe the basic needs of animals, including humans, for survival (water, food and air)?</b></li> <li><input type="checkbox"/> Can I describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene?</li> </ul>
<b>Uses of Everyday Materials</b>		
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Can I identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses?</b></li> <li><input type="checkbox"/> Can I find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching?</li> </ul>		
<b>Vocabulary</b>		
<p>seed, bulb, germinate, seedling, bud, flower, fruit, berry, root, living, dead, never been alive, habitat, micro-habitat, food chain, offspring, reproduction, growth, exercise, breathing, hygiene, germs, disease, transparent, translucent, opaque, flexible, rigid, reflective, non-reflective, absorbent</p>		



## Progression in identification and classification

By the End of Year Two	By the End of Year Four	By the end of Year Six
<p><b>Identifying and classifying</b></p> <ul style="list-style-type: none"> <li>□ compare observable and behavioural features of living things, materials and objects</li> <li>□ sort and group in own way using both observable and behavioural features even when differences are slight</li> <li>□ answer simple yes/no questions about a mystery object they have chosen</li> <li>□ sort into two groups in which one group has a feature and the other doesn't</li> <li>□ once they have decided sorting criteria explain where further additional items could be placed</li> <li>□ use simple Venn diagrams to help sort things and record the groupings</li> </ul>	<p><b>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</b></p> <ul style="list-style-type: none"> <li>□ use Carroll and Venn diagrams to help sort things and record the groupings, sometimes re-sorting using different criteria</li> <li>□ make simple branching data bases/ classification keys to for a few (3-6) things with easily observable differences and that can be named</li> <li>□ use simple classification keys/ branching data bases to identify unknown items that have easily observable differences in their features</li> <li>□ Carry out simple tests and sort and group based on the evidence of the results found.</li> </ul>	<p><b>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</b></p> <ul style="list-style-type: none"> <li>□ Be aware of the term kingdom and know that most scientists classify things into five kingdoms.</li> <li>□ Through direct observations where possible classify animals into vertebrates and invertebrates.</li> <li>□ make keys and branching databases with 4 or more items</li> <li>□ evaluate how well keys and databases work and make changes to improve them</li> <li>□ explain why it is important to classify and why it is useful to scientists</li> <li>□ plan what to test, how to test and collect evidence in order to classify</li> </ul>

Working Scientifically			
Plan	Do	Record	Review
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>ask relevant questions</b></li> <li><input type="checkbox"/> <b>set up simple practical enquiries, comparative and fair tests</b></li> <li><input type="checkbox"/> begin to choose ways to try and answer a question</li> <li><input type="checkbox"/> put forward own ideas and make some planning decisions</li> <li><input type="checkbox"/> suggest ways of making the test fair or if it can't be fair how they will answer it by looking for a pattern</li> <li><input type="checkbox"/> from a selection say what equipment is needed</li> <li><input type="checkbox"/> suggest the type of data needed to be collected</li> <li><input type="checkbox"/> make simple predictions based on everyday experience and knowledge</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</b></li> <li><input type="checkbox"/> carry out a fair test or pattern seeking enquiry with help</li> <li><input type="checkbox"/> compare 3 or more things</li> <li><input type="checkbox"/> use simple standard measures; m, cm, mm, kg, g, cm<sup>3</sup>, minutes, seconds, Newton.</li> <li><input type="checkbox"/> measure to the nearest whole or half unit or mixed units.</li> <li><input type="checkbox"/> read scales to the nearest division labelled and unlabelled.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>gathering, recording, classifying and present data in a variety of ways to help in answering questions</b></li> <li><input type="checkbox"/> <b>recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables</b></li> <li><input type="checkbox"/> construct a simple 2 column table</li> <li><input type="checkbox"/> draw bar charts 1:1, 1:2, 1:5 and 1:10 scale &amp; begin to plot line graphs</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions, making predictions for new values</b></li> <li><input type="checkbox"/> <b>using results to draw simple conclusions and suggest improvements, and raise further questions new questions</b></li> <li><input type="checkbox"/> <b>identifying differences, similarities or changes related to simple scientific ideas and processes</b></li> <li><input type="checkbox"/> say what they have found out and give an explanation for observations and simple patterns based on everyday experience</li> </ul>

Plants	Forces	Animals Including Humans
<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers?</li> <li><input type="checkbox"/> Can I explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant?</li> <li><input type="checkbox"/> Can I investigate the way in which water is transported within plants?</li> <li><input type="checkbox"/> Can I explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal?</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I compare how things move on different surfaces?</li> <li><input type="checkbox"/> Can I notice that some forces need contact between two objects, but magnetic forces can act at a distance?</li> <li><input type="checkbox"/> Can I observe how magnets attract or repel each other and attract some materials and not others describe magnets as having two poles?</li> <li><input type="checkbox"/> Can I predict whether two magnets will attract or repel each other, depending on which poles are facing?</li> <li><input type="checkbox"/> Can I 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?</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I 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?</li> <li><input type="checkbox"/> Can I identify that humans and some other animals have skeletons and muscles for support, protection and movement?</li> </ul>
<p style="text-align: center;"><b>Rocks</b></p>		<p style="text-align: center;"><b>Light</b></p>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I compare and group together different kinds of rocks on the basis of their appearance and simple physical properties?</li> <li><input type="checkbox"/> Can I describe in simple terms how fossils are formed when things that have lived are trapped within rock?</li> <li><input type="checkbox"/> Can I recognise that soils are made from rocks and organic matter?</li> </ul>		<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I recognise that they need light in order to see things and that dark is the absence of light?</li> <li><input type="checkbox"/> Can I notice that light is reflected from surfaces?</li> <li><input type="checkbox"/> Can I recognise that light from the sun can be dangerous and that there are ways to protect their eyes?</li> <li><input type="checkbox"/> Can I recognise that shadows are formed when the light from a light source is blocked by a solid object?</li> <li><input type="checkbox"/> Can I find patterns in the way that the size of shadows change</li> </ul>
<b>Vocabulary</b>		
<p>roots, stem/trunk, leaves, photosynthesis, pollen, pollination, seed formation, seed dispersal, germination, nutrition, nutrients, carbohydrates, proteins, vitamins and minerals, fibre, skeleton, bones, muscles, joints, rock, fossil, soil, light, dark, light source, transparent, translucent, opaque, shadow, reflect, mirror, force, magnetic force, magnet, attract, repel, poles, contact force, non-contact force.</p>		

## Progression in identification and classification

By the End of Year Two	By the End of Year Four	By the end of Year Six
<p><b>Identifying and classifying</b></p> <ul style="list-style-type: none"> <li>□ compare observable and behavioural features of living things, materials and objects</li> <li>□ sort and group in own way using both observable and behavioural features even when differences are slight</li> <li>□ answer simple yes/no questions about a mystery object they have chosen</li> <li>□ sort into two groups in which one group has a feature and the other doesn't</li> <li>□ once they have decided sorting criteria explain where further additional items could be placed</li> <li>□ use simple Venn diagrams to help sort things and record the groupings</li> </ul>	<p><b>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</b></p> <ul style="list-style-type: none"> <li>□ use Carroll and Venn diagrams to help sort things and record the groupings, sometimes re-sorting using different criteria</li> <li>□ make simple branching data bases/ classification keys to for a few (3-6) things with easily observable differences and that can be named</li> <li>□ use simple classification keys/ branching data bases to identify unknown items that have easily observable differences in their features</li> <li>□ Carry out simple tests and sort and group based on the evidence of the results found.</li> </ul>	<p><b>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</b></p> <ul style="list-style-type: none"> <li>□ Be aware of the term kingdom and know that most scientists classify things into five kingdoms.</li> <li>□ Through direct observations where possible classify animals into vertebrates and invertebrates.</li> <li>□ make keys and branching databases with 4 or more items</li> <li>□ evaluate how well keys and databases work and make changes to improve them</li> <li>□ explain why it is important to classify and why it is useful to scientists</li> <li>□ plan what to test, how to test and collect evidence in order to classify</li> </ul>

Working Scientifically			
Plan	Do	Record	Review
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>ask relevant questions</b></li> <li><input type="checkbox"/> <b>set up simple practical enquiries, comparative and fair tests</b></li> <li><input type="checkbox"/> begin to choose ways to try and answer a question</li> <li><input type="checkbox"/> put forward own ideas and make some planning decisions</li> <li><input type="checkbox"/> suggest ways of making the test fair or if it can't be fair how they will answer it by looking for a pattern</li> <li><input type="checkbox"/> from a selection say what equipment is needed</li> <li><input type="checkbox"/> suggest the type of data needed to be collected</li> <li><input type="checkbox"/> make simple predictions based on everyday experience and knowledge</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</b></li> <li><input type="checkbox"/> carry out a fair test or pattern seeking enquiry with help</li> <li><input type="checkbox"/> compare 3 or more things</li> <li><input type="checkbox"/> use simple standard measures; m, cm, mm, kg, g, cm<sup>3</sup>, minutes, seconds, Newton.</li> <li><input type="checkbox"/> measure to the nearest whole or half unit or mixed units.</li> <li><input type="checkbox"/> read scales to the nearest division labelled and unlabelled.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>gathering, recording, classifying and present data in a variety of ways to help in answering questions</b></li> <li><input type="checkbox"/> <b>recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables</b></li> <li><input type="checkbox"/> construct a simple 2 column table</li> <li><input type="checkbox"/> draw bar charts 1:1, 1:2, 1:5 and 1:10 scale &amp; begin to plot line graphs</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions, making predictions for new values</b></li> <li><input type="checkbox"/> <b>using results to draw simple conclusions and suggest improvements, and raise further questions new questions</b></li> <li><input type="checkbox"/> <b>identifying differences, similarities or changes related to simple scientific ideas and processes</b></li> <li><input type="checkbox"/> say what they have found out and give an explanation for observations and simple patterns based on everyday experience</li> </ul>

Living Things and Their Habitats	Electricity	Animals Including Humans	
<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I recognise that living things can be grouped in a variety of ways?</li> <li><input type="checkbox"/> <b>Can I explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment?</b></li> <li><input type="checkbox"/> <b>Can I recognise that environments can change and that this can sometimes pose dangers to living things?</b></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I identify common appliances that run on electricity?</li> <li><input type="checkbox"/> <b>Can I construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers?</b></li> <li><input type="checkbox"/> Can I 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?</li> <li><input type="checkbox"/> <b>Can I recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit?</b></li> <li><input type="checkbox"/> <b>Can I recognise some common conductors and insulators, and associate metals with being good conductors?</b></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Can I describe the simple functions of the basic parts of the digestive system in humans?</b></li> <li><input type="checkbox"/> <b>Can I identify the different types of teeth in humans and their simple functions?</b></li> <li><input type="checkbox"/> Can I construct and interpret a variety of food chains, identifying producers, predators and prey?</li> </ul>	
States of Matter			
<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I compare and group materials together, according to whether they are solids, liquids or gases?</li> <li><input type="checkbox"/> <b>Can I 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)?</b></li> <li><input type="checkbox"/> <b>Can I identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature?</b></li> </ul>		<th data-bbox="1379 534 2040 577" style="text-align: center;">Sound</th> <ul style="list-style-type: none"> <li><input type="checkbox"/> Can I identify how sounds are made, associating some of them with something vibrating?</li> <li><input type="checkbox"/> <b>Can I recognise that vibrations from sounds travel through a medium to the ear?</b></li> <li><input type="checkbox"/> <b>Can I find</b> patterns between the pitch of a sound and features of the object that produced it?</li> <li><input type="checkbox"/> <b>Can I find patterns between the volume of a sound and the strength of the vibrations that produced it</b></li> <li><input type="checkbox"/> <b>Can I recognise that sounds get fainter as the distance from the sound source increases?</b></li> </ul>	Sound
Vocabulary			
<p>classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate  digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars,  herbivore, carnivore, omnivore, producer, predator, prey, food chain  solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle  electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection,  short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol  sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation</p>			

## Progression in identification and classification

By the End of Year Two	By the End of Year Four	By the end of Year Six
<p><b>Identifying and classifying</b></p> <ul style="list-style-type: none"> <li>□ compare observable and behavioural features of living things, materials and objects</li> <li>□ sort and group in own way using both observable and behavioural features even when differences are slight</li> <li>□ answer simple yes/no questions about a mystery object they have chosen</li> <li>□ sort into two groups in which one group has a feature and the other doesn't</li> <li>□ once they have decided sorting criteria explain where further additional items could be placed</li> <li>□ use simple Venn diagrams to help sort things and record the groupings</li> </ul>	<p><b>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</b></p> <ul style="list-style-type: none"> <li>□ use Carroll and Venn diagrams to help sort things and record the groupings, sometimes re-sorting using different criteria</li> <li>□ make simple branching data bases/ classification keys to for a few (3-6) things with easily observable differences and that can be named</li> <li>□ use simple classification keys/ branching data bases to identify unknown items that have easily observable differences in their features</li> <li>□ Carry out simple tests and sort and group based on the evidence of the results found.</li> </ul>	<p><b>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</b></p> <ul style="list-style-type: none"> <li>□ Be aware of the term kingdom and know that most scientists classify things into five kingdoms.</li> <li>□ Through direct observations where possible classify animals into vertebrates and invertebrates.</li> <li>□ make keys and branching databases with 4 or more items</li> <li>□ evaluate how well keys and databases work and make changes to improve them</li> <li>□ explain why it is important to classify and why it is useful to scientists</li> <li>□ plan what to test, how to test and collect evidence in order to classify</li> </ul>

Working Scientifically			
Plan	Do	Record	Review
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>ask relevant questions</b></li> <li><input type="checkbox"/> <b>set up simple practical enquiries, comparative and fair tests</b></li> <li><input type="checkbox"/> begin to choose ways to try and answer a question</li> <li><input type="checkbox"/> put forward own ideas and make some planning decisions</li> <li><input type="checkbox"/> suggest ways of making the test fair or if it can't be fair how they will answer it by looking for a pattern</li> <li><input type="checkbox"/> from a selection say what equipment is needed</li> <li><input type="checkbox"/> suggest the type of data needed to be collected</li> <li><input type="checkbox"/> make simple predictions based on everyday experience and knowledge</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Making systematic and careful observations and where appropriate taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</b></li> <li><input type="checkbox"/> carry out a fair test or pattern seeking enquiry with help</li> <li><input type="checkbox"/> compare 3 or more things</li> <li><input type="checkbox"/> use simple standard measures; m, cm, mm, kg, g, cm<sup>3</sup>, minutes, seconds, Newton.</li> <li><input type="checkbox"/> measure to the nearest whole or half unit or mixed units.</li> <li><input type="checkbox"/> read scales to the nearest division labelled and unlabelled.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>gathering, recording, classifying and present data in a variety of ways to help in answering questions</b></li> <li><input type="checkbox"/> <b>recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables</b></li> <li><input type="checkbox"/> construct a simple 2 column table</li> <li><input type="checkbox"/> draw bar charts 1:1, 1:2, 1:5 and 1:10 scale &amp; begin to plot line graphs</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions, making predictions for new values</b></li> <li><input type="checkbox"/> <b>using results to draw simple conclusions and suggest improvements, and raise further questions new questions</b></li> <li><input type="checkbox"/> <b>identifying differences, similarities or changes related to simple scientific ideas and processes</b></li> <li><input type="checkbox"/> say what they have found out and give an explanation for observations and simple patterns based on everyday experience</li> </ul>



Living Things and Their Habitats	Properties and Changes of Materials	Animals Including Humans
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Can I describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird?</b></li> <li><input type="checkbox"/> <b>Can I describe the life process of reproduction in some plants and animals?</b></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I 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?</li> <li><input type="checkbox"/> I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution?</li> <li><input type="checkbox"/> <b>Can I use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating?</b></li> <li><input type="checkbox"/> Can I give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic?</li> <li><input type="checkbox"/> <b>Can I demonstrate that dissolving, mixing and changes of state are reversible changes?</b></li> <li><input type="checkbox"/> <b>Can I explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including burning and the action of acid on bicarbonate of soda?</b></li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Can I describe the changes as humans develop to old age?</b></li> </ul>
<b>Earth and Space</b>		
<b>Forces and Magnets</b>		<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Can I describe the movement of the Earth, and other planets, relative to the Sun in the solar system?</b></li> <li><input type="checkbox"/> <b>Can I describe the movement of the Moon relative to the Earth?</b></li> <li><input type="checkbox"/> Can I describe the Sun, Earth and Moon as approximately spherical bodies?</li> <li><input type="checkbox"/> <b>Can I use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky?</b></li> </ul>
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Can I explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object?</b></li> <li><input type="checkbox"/> <b>Can I identify the effects of air resistance, water resistance and friction, that act between moving surfaces?</b></li> <li><input type="checkbox"/> Can I recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect?</li> </ul>		
<b>Vocabulary</b>		
<p>life cycle, reproduction, sexual reproduction, asexual reproduction, fertilise, metamorphosis, runner, bulb, cutting, tuber  puberty, sexual reproduction, menstruation(period) sperm, egg, foetus, gestation, life expectancy, thermal insulator  thermal conductor, electrical insulator, electrical conductor, dissolve, solution, soluble, insoluble, sieve, filter, evaporation, reversible change, non-reversible change  Earth, Sun, moon, planets, solar system, star, rotate, orbit  force, gravity, forcemeter, Newton (N) air resistance, water resistance, friction, mechanisms, simple machines</p>		

## Progression in identification and classification

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Year 6

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<b>Living Things and Their Habitats</b>	<b>Evolution and Inheritance</b>	<b>Animals Including Humans</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I 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?</li> <li><input type="checkbox"/> Can I give reasons for classifying plants and animals based on specific characteristics?</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago?</li> <li><input type="checkbox"/> Can I recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents?</li> <li><input type="checkbox"/> Can I identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution?</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood?</li> <li><input type="checkbox"/> Can I recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function?</li> <li><input type="checkbox"/> Can I describe the ways in which nutrients and water are transported within animals, including humans?</li> </ul>
<b>Electricity</b>		
<b>Light</b>		
<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I 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?</li> <li><input type="checkbox"/> Can I 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?</li> <li><input type="checkbox"/> Can I use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them?</li> </ul>		<ul style="list-style-type: none"> <li><input type="checkbox"/> Can I associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit?</li> <li><input type="checkbox"/> Can I 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?</li> <li><input type="checkbox"/> Can I use recognised symbols when representing a simple circuit in a diagram?</li> </ul>
<b>Vocabulary</b>		
<p>vertebrate, fish, amphibian, reptile, bird, mammal, invertebrate, plants  heart, pulse, blood, blood vessels, lungs, circulatory system, diet, exercise, drugs, lifestyle  light source, straight lines, light ray, reflect, shadow  circuit, circuit symbol, circuit diagram, cell, battery, switch, voltage  evolution, offspring, inherited, characteristics, variation, adapted, environment, species, fossil</p>		

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