

Whole School Science Overview

Intent: We intend to build on children's understanding of the world at the end of Reception by extending their knowledge of biology, physics and chemistry through key stages 1 and 2 to enable pupils to be ready for science at secondary school. Pupils will be taught essential aspects of the knowledge, methods, processes and uses of science and key scientists from the past. Through building up a body of key foundational knowledge and concepts, pupils will be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They will be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. They will develop understanding through different types of science enquiries that help them to answer scientific questions about the world around them.

The programmes of study describe a sequence of knowledge and concepts. It is important that pupils make progress but the focus is also important to develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Pupils will be familiar with, and use, technical terminology accurately and precisely. The programmes of study will link to their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. Over the course of six year, pupils will develop greater understanding of how to working scientifically. This includes observing over time; seeking patterns; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources.

Investigations

It is essential that children experience and understand the full cycle of experimental science. This cycle is outlined below. Specific skill elements of investigations are to be covered discretely across the curriculum however all children should have the opportunity to work through the full process at least once a term this could be as part of the lessons mapped out or as a distinct separate block. The investigation should link closely with the lesson plans. There are numerous examples of fair tests in the scheme and these can be used as a starting point. Use Appendix A to see skills progressions being taught.



CONTENT

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 Theme: Asking questions and making simple tests to answer them	Who am I? The human body.	The senses and how they relate to the human body.	Arctic and Antarctic habitats. Camouflage. Adapting to polar extremes.	Testing materials for waterproof, windproof and sun proof.	Invertebrates. Body parts, habitats, food chains.	Seagulls, puffins and crabs, body parts and habitats.
Year 2 Theme: Sorting and classifying	Healthy eating, exercise and avoiding germs and illness.	Materials and their properties. Sorting and classifying materials.	Invertebrates arachnids, insects and sponges.	Forces – pull, push. How forces make things move.	Conditions for herbs, fruit and vegetables to grow. Parts of a plant.	Irreversible change in cooking. Hygiene, healthy food.
Year 3 Theme: Predict, test, measure.	Rocks and their properties.	Skeletons, muscles, joints.	Reflection. Light sources. Mirrors	Pollination. The function of a leaf, root. Parts of a flower.	Magnetism. Poles. The Earth as a magnet.	Space, the moon, Earth and Sun. Orbits and rotations.
Year 4 Theme: Fair tests	Sound. Pitch, vibrations and how humans hear sound.	How animals make and hear sounds. Grouping animals and using a decision tree/key.	The three states of matter and how a material can be formed in different states.	The types and function of different teeth in humans and animals.	Inventors. Electric circuits, conductors and how electricity flows.	Bubbles and solutions.
Year 5 Theme: variables	Solar system, why we have days, years and tides.	Materials. Dissolving materials to make solutions and evaporation.	Plant and human reproduction. Life cycles.	Forces – gravity, air and water resistance and friction.	Forensic analysis, DNA, fingerprints, paper chromatography.	Human life cycles. Puberty. Changes to humans during puberty.
Year 6 Theme: Identifying	Plant classification. Fungi.	The circulation system. Function and	Natural selection. Evolution and inheritance,	Light. Reflection and refraction.	Sources of electricity. Testing electricity and	

controlling and testing variables	Photosynthesis	action of heart and lungs. Impact of drugs.	Darwin. Natural selection.	Rainbows.	problem solving.	
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Whole School Science Overview

SKILLS

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Who am I?	Celebrations	Polar adventure	Treasure island,	On safari	Holiday
Some	<p>Explain what happens if one sense is not working.</p> <p>Explain that we cannot see without light.</p> <p>Name, position and label a wide range of parts of the human body e.g. hips, spine, ribs, heel, and internal organs such as heart, lungs, stomach, liver and kidneys.</p> <p>Work independently to collect, record data in a pictogram and answer questions.</p>	Choose the best material to make certain sounds.	<p>Compare different animals and name parts of the body.</p> <p>Identify animals that are carnivores, herbivores and omnivores from habitats other than Polar Regions.</p> <p>Name animals that are fish, birds and mammals from habitats other than Polar regions.</p> <p>Suggest how properties of materials such as transparent, translucent, opaque, waterproof, flexible are used in Polar regions.</p>	<p>Use books to classify animals that are herbivores, carnivores and omnivores.</p> <p>Carry out a simple test and collect results that are numbers.</p> <p>Gather and record numerical data in a table.</p> <p>Use observations and test results to say why certain materials have been used.</p>	<p>Ask a range of questions without question stem prompts.</p> <p>Decide how to answer the questions.</p> <p>Plan and carry out a simple test to answer one of their own questions.</p> <p>Say if an invertebrate is a detritivore.</p>	Use their understanding of the properties of materials and their possible effect on animals to give for and against reasons for using plastic bags.

			<p>Design and carry out their own test, for example: Which gloves are waterproof?</p> <p>Decide how to collect, record and use their data to answer question.</p>			
Most	<p>Observe using the senses to compare different sounds, sights, tastes, textures and smells.</p> <p>Name a wider range of parts of the body such as backbone, ribs, skull and internal organs such as heart, lungs, stomach.</p> <p>Answer questions about the data in a pictogram.</p>	<p>Use different materials to make a range of sounds.</p> <p>Classify food and say which part of a plant it is.</p>	<p>Identify which animals are carnivores, herbivores and omnivores.</p> <p>Identify animals that are fish, birds and mammals.</p> <p>Choose materials that are transparent, translucent, opaque, waterproof.</p> <p>Use data to help in answering questions.</p>	<p>Carry out a simple test and describe what happened using their results.</p> <p>Use books to name plants and animals.</p> <p>Describe and compare the structure of a fish with humans and some other animals.</p> <p>Compare materials and say why one is better to use than another.</p>	<p>Answer their questions using the question stem framework.</p> <p>Plan and carry out a simple test and collect data.</p> <p>Use their data to answer their test question.</p>	<p>Use standard measurements to explain why some materials are better than others for a task.</p> <p>Compare land animals and sea animals – snails and limpets.</p>
All	<p>Say which parts of the body are linked to each sense.</p> <p>Name basic parts of the body, e.g. head, neck, arms, elbows,</p>	<p>Observe things using simple equipment.</p> <p>Identify and classify.</p> <p>Use their observations and ideas to suggest answers to</p>	<p>Describe and compare different animals.</p> <p>Name animals that are carnivores, herbivores and omnivores.</p>	<p>Carry out a simple test and say what happened.</p> <p>Match pictures to name plants and animals.</p> <p>Describe and compare the structure of a</p>	<p>Ask simple questions using question stems.</p> <p>Help sort questions to show how they can be answered.</p> <p>Carry out a</p>	<p>Plan and carry out a simple test and collect data.</p> <p>Use their data to answer their test question.</p> <p>Identify and name a variety of common</p>

	<p>legs, knees, face, ears, eyes, hair, mouth and teeth.</p> <p>Observe, identify and sort using all of the senses.</p> <p>Collect data and place it on a pictogram.</p>	<p>questions.</p> <p>Know the difference between the object and material it is made from.</p> <p>Know the names of materials such as wood, plastic, glass, metal, water.</p> <p>Be able to describe simple properties of materials such as soft, hard, rough.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers.</p>	<p>Name animals that are, fish, birds and mammals.</p> <p>Describe the properties of materials, transparent, translucent, opaque, waterproof, flexible.</p> <p>Compare and group materials that are transparent, translucent, opaque, waterproof, flexible.</p>	<p>fish with humans.</p> <p>Talk about why they have chosen to use a material e.g. it is waterproof, transparent, floats.</p>	<p>simple test with support and say what happened.</p> <p>Identify and name common invertebrates.</p> <p>Say if an invertebrate is a carnivore, herbivore or omnivore.</p> <p>Describe and compare the similarities between humans and invertebrates.</p>	<p>animals including fish, birds, invertebrates and mammals that live in the sea, rock pools and on the beach.</p> <p>Say if they are carnivores, herbivores or omnivores.</p> <p>Talk about animals with shells that live in the sea.</p> <p>Classify everyday materials, including wood, plastic, glass, metal, water, and rock.</p>
Year 2	Healthy eating	Material Monster	Move it	Mini worlds,	Young Gardeners	Little Master chefs
Some	<p>Independently carry out and collect simple data to show how far sneezes travel.</p> <p>Make decisions about how to communicate what they have learned about keeping</p>	<p>Carry out a comparative test e.g. waterproof or not to explain the properties of a material.</p> <p>Explain how a material is used because of its properties.</p>	<p>Carry out a simple comparative test and use the results to answer the question.</p> <p>Use their experience and simple test to ask another set of questions.</p> <p>Classify</p>	<p>Link their scientific knowledge to their observations.</p> <p>Make sense of their observations using scientific knowledge.</p> <p>Know that properties of materials can be linked to</p>	<p>Use data and experience from growing seeds to explain how to improve the growth of their plants.</p>	<p>Ask and answer their own questions about different kinds of food and personal health.</p> <p>Use secondary sources of information to find out more about different food groups and scientific</p>

	healthy.		<p>materials that can be squashed, bent, twisted and stretched.</p> <p>Explain whether a push or pull has been used to change the shape of an object by squashing,</p> <p>Bending, twisting and stretching.</p> <p>Name the property of materials which can be squashed, bent, twisted and stretched e.g. soft,</p> <p>Flexible, elastic.</p>	<p>what the materials look like.</p> <p>Choose items, sort them and explain why they are living, dead or have never been alive.</p> <p>Describe how different habitats, (e.g. pond, under a stone, log, tree) provide for the basic needs of different kinds of animals and plants, and how some animals depend on plants to live.</p> <p>Explore the school grounds or local park or own garden and find food chains.</p>		<p>names, e.g. carbohydrates, protein.</p>
Most	<p>Use measurement to prove how far sneezes spread.</p> <p>Use measurement to draw conclusions.</p> <p>Say what they could do to stay healthy.</p>	<p>Carry out a comparative test and describe results.</p> <p>Classify materials according to their properties.</p> <p>Explain why one material is better for a job than another.</p>	<p>Ask a question and decide which is the best way to answer it.</p> <p>Know when to use standard measurement to help answer the question.</p> <p>Record data help answer a question.</p> <p>Say which</p>	<p>Use their observations to sort and classify.</p> <p>Choose whether to use a microscope or a hand lens.</p> <p>Compare the differences between things that are living, dead, and things that have never</p>	<p>Use measurements to prove how a plant should be grown.</p> <p>Explain what would happen if a plant did not have water or light.</p>	<p>Explain how different foods help the body to keep healthy.</p>

			<p>materials can be changed by squashing, bending, twisting and stretching.</p> <p>Classify objects according to whether they can be squashed, bent, twisted and stretched.</p>	<p>been alive.</p> <p>Match an animal and plant to its habitat and give reasons why they live there.</p> <p>Create a simple food chain and describe who eats who.</p>		
All	<p>Perform a simple test to find out how far sneezes spread.</p> <p>Use their observations and ideas to suggest answers to questions.</p> <p>Gather and record data in a pictogram and answer questions.</p> <p>Know that exercise, hygiene and being happy are important to be a healthy person.</p>	<p>Carry out a simple comparative test to classify a material.</p> <p>Name different materials.</p> <p>Describe the properties of a material.</p> <p>Know that some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>Ask questions and decide how to answer them.</p> <p>Perform a simple comparative test to answer a question.</p> <p>Use observations to answer a question.</p> <p>Observe changes when objects are squashed, bent, twisted and stretched.</p> <p>Describe how a shape has been changed by squashing, bending, twisting and stretching.</p>	<p>Describe their observations.</p> <p>Use a microscope and hand lens correctly.</p> <p>Sort items into living, dead, and things that have never been alive.</p> <p>Match animals and plants to their habitat and give reasons why they are suited to it.</p> <p>Describe how animals obtain their food from plants and other animals.</p> <p>Use the idea of a simple food chain.</p> <p>Identify and name different sources of food.</p>	<p>Ask questions about plants.</p> <p>Use data to describe what a plant needs to grow.</p> <p>Name vegetable plants, herbs and flowers.</p> <p>Describe how a seed germinates.</p> <p>Say which materials could be used for plant containers or for a cloche.</p>	<p>Plan and carry out a simple comparative test.</p> <p>Use results to answer their question and choose the best material for the job e.g. keeping a sandwich fresh.</p> <p>Classify food into groups.</p> <p>Say what they need to eat and drink to stay alive and healthy.</p> <p>Follow hygiene and safety rules when preparing and cooking food.</p> <p>Choose foods that help to keep the body healthy.</p> <p>Know the names of foods they</p>

						<p>have grown from seed.</p> <p>Know which part of a plant they are eating.</p>
Year 3	Earth Rocks	Food and our bodies	Mirror, Mirror	How does your garden grow	Opposites attract	We are Astronauts
Some	<p>Use what they know about minerals to find foods that would be good for teeth, bones, blood, nerves and muscles.</p> <p>Explain why fossils don't tell us everything about an animal that used to live on Earth.</p> <p>Estimate the amount of sand and clay in different soils.</p>	<p>Explain why some foods are important for giving us healthy bodies.</p> <p>Explain why vitamins and minerals are important for healthy diets.</p> <p>Describe several different types of joint.</p>	<p>Draw labelled diagrams with a straight line and an arrow to represent the light beam to show how reflections are formed.</p> <p>Explain the difference between a shadow and a reflection.</p> <p>Suggest improvements to a shadow investigation.</p>	<p>Compare the effects of different conditions on plant growth.</p> <p>Describe some of the different ways plants spread their seeds.</p> <p>Suggest improvements and raise further questions about their investigation.</p>	<p>Plan and carry out an investigation to measure the force of a magnet using a force meter.</p> <p>Name five unusual uses for magnets.</p> <p>Explain what causes magnetic fields on the Earth and on other planets.</p>	<p>Investigate what might make some foods last longer.</p> <p>Explain why a spacesuit is designed the way it is.</p> <p>Design and make a rocket from an empty bottle of washing-up liquid.</p> <p>Re-enact the launch, flight and return to the Earth of a space flight and put on a play about mission control.</p> <p>Design and make a spacesuit out of everyday materials.</p>
Most	<p>Carry out tests to show difference in soils.</p> <p>Explain what soil is and why it isn't all the same.</p> <p>Describe how</p>	<p>Explain what a joint is and give some examples.</p> <p>Explain what muscles are and why they are important.</p> <p>Gather record</p>	<p>Investigate by using a fair test what makes shadows bigger or smaller.</p> <p>Create a timeline of important</p>	<p>Compare the effect of different factors on plant growth.</p> <p>Name the parts of a flower and explain what</p>	<p>Explain what the poles of a magnet are and some of their properties.</p> <p>Describe the Earth's magnetic field and what it</p>	<p>Explain how a space rocket works.</p> <p>Name some famous cosmonauts and astronauts and explain what they did.</p>

	<p>some fossils are formed.</p> <p>Identify patterns, similarities and differences in their results.</p> <p>Explain how to improve their experiments and some further questions it has made them think about.</p>	<p>and present data.</p> <p>Record findings using simple scientific language.</p>	<p>ways of making mirrors.</p> <p>Name at least ten different uses of mirrors.</p> <p>Decide on the best way to record results.</p>	<p>they do.</p> <p>Ask relevant questions and use different types of scientific enquiry to answer them.</p>	<p>does to magnets.</p> <p>Predict what will happen when like and unlike poles of a magnet are brought together.</p>	<p>Describe some of the problems scientists have solved to help people travel into space.</p>
All	<p>Compare and group rocks.</p> <p>Test for and describe some properties of rocks.</p> <p>Decide the best way to record and present their results.</p> <p>Describe some ways that rocks are made.</p>	<p>Identify different food groups and how they make up a balanced diet.</p> <p>Compare the diets of different animals.</p> <p>Explain the importance of the skeleton and muscles.</p> <p>Know the names of different parts of the skeleton.</p> <p>Identify and group animals with and without skeletons.</p>	<p>Sort materials into those that are good and bad reflectors of light.</p> <p>Describe what a reflection in a mirror looks like.</p> <p>Name some sources of light.</p> <p>Build a mirror maze and make light change direction.</p> <p>Draw a diagram that explains how shadows are formed.</p> <p>Sort materials into those that are opaque, translucent and transparent.</p>	<p>Identify the different parts of a plant and explain their functions.</p> <p>Record their findings with simple drawings, labelled diagrams and neat tables.</p> <p>Describe how water is transported in plants.</p>	<p>Explain the difference between a contact and a non-contact force.</p> <p>Plan comparative and fair tests and collect accurate results.</p> <p>Use the results of their tests to explain some properties of magnets.</p> <p>Name the three metals that can be made into a magnet.</p> <p>Explain the difference between a magnetic and a non-magnetic material.</p> <p>List ten uses of</p>	<p>Describe the appearance of the near and far side of the Moon.</p> <p>Investigate a model rocket to see what makes it work well.</p> <p>Design and build a shock absorber for a model Moon lander.</p> <p>Name many foods that you could eat in space.</p>

					magnets.	
Year 4	What's that Sound	Living things	Look at states	Teeth and eating	Power it up	Brilliant Bubbles
Some	<p>Describe ways that pitch is changed in relation to vibrations.</p> <p>Link cause and effect to explain how volume and vibrations are related.</p> <p>Generalise about how to change pitch. use results to raise further questions</p>	<p>Create keys independently to identify a range of living things.</p> <p>Explain how the environment can be protected.</p> <p>Describe how the environment changes over time and suggest whether this is a good or bad thing.</p>	<p>State that some materials, e.g. most metals, have to be heated to a very high temperature before they melt.</p> <p>Explain how changing conditions affects processes such as evaporation and condensation.</p>	<p>Plot simple graphs.</p> <p>Relate observations and conclusions to scientific knowledge and understanding.</p>	<p>Represent working circuits clearly in drawings.</p> <p>Generalise about conductors and insulators.</p> <p>Design circuits to suit a purpose.</p>	<p>Think creatively and suggest some reasons why bubbles are round.</p> <p>Weigh exact amounts.</p> <p>Adapt experiments to find out if yeast grows in the dark or vitamin C makes better bread.</p>
Most	<p>Explain that sounds are produced when objects vibrate.</p> <p>Suggest how to change the pitch and loudness of the sounds produced by a range of musical instruments.</p> <p>Suggest how to investigate how well sound travels through different materials.</p> <p>Identify what is vibrating in a range of</p>	<p>Devise questions that can be used to construct keys.</p> <p>Use simple keys to identify organisms.</p> <p>State the living requirements of some invertebrates.</p> <p>Begin to make simple keys to identify a range of living things.</p> <p>Explain simply why living things need to be classified.</p> <p>Describe some</p>	<p>Describe the differences between solids and liquids and relate to ideas about states of matter.</p> <p>Describe melting and give an everyday example.</p> <p>Name and describe the state changes of water.</p> <p>Recognise that these state change processes can be reversed.</p> <p>Explain the</p>	<p>Use scientific terms such as producer and consumer, oesophagus and intestine.</p> <p>Describe the process of digestion.</p> <p>Make appropriate observations and measurements.</p> <p>Record data using tables and bar charts.</p> <p>Explain the differences between the teeth of an herbivore and</p>	<p>Make circuits from drawings provided.</p> <p>Construct and make drawings of simple working circuits.</p> <p>Suggest why some circuits work and others do not.</p> <p>Record findings and draw conclusions from circuits tested.</p> <p>Explain simply how switches work.</p> <p>Describe what</p>	<p>Plan how to carry out a survey.</p> <p>Present survey results in effective ways.</p> <p>Suggest how to carry out a fair test.</p> <p>Plan a fair test.</p> <p>Suggest reasons for patterns or differences in results.</p>

	<p>instruments.</p> <p>Describe a pattern for sound changing with distance. Use evidence to answer questions and form conclusions.</p>	<p>things that can be done to care for the environment.</p>	<p>water cycle in terms of these processes.</p> <p>Read thermometers accurately.</p> <p>Record and present data effectively.</p> <p>Report on findings and draw conclusions from them.</p>	<p>a carnivore.</p> <p>Understand why food needs to be digested.</p> <p>Record their observations in a variety of ways.</p> <p>Suggest explanations for their observations and simple patterns in any recorded data.</p>	<p>is needed for a circuit to work.</p> <p>Investigate how changing batteries affects the bulb in a circuit.</p>	
All	<p>Suggest ways of producing sounds.</p> <p>Identify similarities and differences between various sounds.</p> <p>Recognise a vibration.</p> <p>Distinguish between pitch and loudness.</p> <p>Suggest how to change the sound made by an instrument.</p> <p>Recognise how sound changes with distance.</p>	<p>Recognise that living things can be grouped in a variety of ways.</p> <p>With help, identify plants and animals found locally using simple keys.</p> <p>Make observations of animals and plants.</p> <p>Recognise that we need to care for the environment and give examples of things we can do.</p> <p>Describe how the environment may change</p>	<p>Group materials based on simple properties and as solids, liquids and gases through simple observations.</p> <p>Name some solids and liquids.</p> <p>Describe that when ice melts it turns to a liquid.</p> <p>Describe how to change water into ice and steam and steam into water.</p> <p>Describe examples where these changes</p>	<p>Identify the position of the stomach and intestines.</p> <p>Recognise that living things need food to survive.</p> <p>Understand that animals have different teeth, depending on what they eat.</p> <p>Use simple equipment.</p> <p>Record their observations in tables.</p> <p>Observe and compare similarities and differences.</p>	<p>Describe some of the dangers associated with mains electricity.</p> <p>Construct and test a simple series circuit.</p> <p>Identify some reasons why an appliance or component might not work in a circuit.</p> <p>Test some materials to see if they are conductors or insulators.</p>	<p>Make and record detailed observations.</p> <p>Suggest how to investigate the effect of changing bubble mixtures.</p> <p>Identify new questions as a result of observations or tests.</p> <p>Suggest ways of improving an experiment.</p>

		over time.	occur.			
Year 5	Out of this World	Materials world	Let's get moving	Circle of Life		Growing up, growing old
Some	<p>Explain how the Moon orbits the Earth to cause a month.</p> <p>Explain how the Earth's movement causes night and day.</p> <p>Use simple models to explain how a month and day and night are caused.</p>	<p>Research the discovery of new materials and order them in a timeline.</p> <p>Explain the differences between boiling and evaporation.</p> <p>Identify scientific processes and changes in some everyday situations.</p>	<p>Identify sources of error in investigations.</p> <p>Identify investigations to undertake on various forms of friction.</p> <p>Design and make a Rube Goldberg machine containing at least six simple machines, including geared sections.</p>	<p>Explain the differences between the life cycles of different animals.</p>	<p>Describe how various mammals have different gestation periods.</p> <p>Describe some of the problems caused by humans living longer.</p> <p>Interpret and identify patterns from scientific data.</p> <p>Develop and create solutions for the problems associated with old age.</p>	
Most	<p>Use mathematics accurately to make a model of our Solar System.</p> <p>Describe the difference between the geocentric and heliocentric models of the Solar System.</p> <p>Explain how people's ideas of the Solar System have</p>	<p>Describe different ways to separate mixtures.</p> <p>Use their ideas to explain dissolving and separation.</p> <p>Explore reversible and irreversible changes.</p> <p>Explain the difference between changes in materials.</p> <p>Decide the</p>	<p>Come up with a sensible conclusion.</p> <p>Explain how levers, springs, pulleys and gears transmit force and motion. Make some simple machines.</p> <p>Design and make a Rube Goldberg machine containing at least four different simple</p>	<p>Describe the differences in the life cycles of different animals.</p> <p>Describe the process of reproduction in some animals.</p> <p>Report and present their findings from enquiries.</p>	<p>Describe how our height changes as we get older.</p> <p>Present scientific data accurately in a variety of ways and identify a pattern in it.</p> <p>Describe some of the changes that happen as we reach old age.</p> <p>Discuss some of the problems that</p>	

	<p>changed over time.</p> <p>Use secondary sources to research scientific ideas.</p>	<p>best way to present their findings and evidence.</p> <p>Plan comparative and fair tests, and collect accurate results.</p>	<p>machines.</p>			<p>old people face.</p> <p>Explain some of the reasons why humans are living longer.</p>
All	<p>Explain what the Solar System is. name the eight planets in the Solar System in order of their distance away from the Sun.</p>	<p>Compare the properties of a range of materials.</p> <p>Explore reversible and irreversible changes from above.</p> <p>Draw on the results of their tests to explain why some materials are used.</p> <p>Identify some factors that affect dissolving.</p>	<p>Explain what makes objects fall to the Earth.</p> <p>Plan a fair test to find out how well different objects fall.</p> <p>Decide on new questions to test as a result of their observations.</p> <p>Plan a fair test to investigate different types of friction and water resistance.</p> <p>Make some detailed observations and present them clearly.</p>	<p>Explain how plants reproduce. explain how new plants can be grown from cuttings and bulbs</p>		<p>Describe some of the changes that happen as children grow up into adults.</p> <p>Give an explanation of what happens during pregnancy.</p> <p>Describe how various mammals have different gestation periods.</p> <p>Describe some of the changes that happen during puberty.</p>
Year 6	<p>Classifying Critters</p>	<p>Staying alive</p>	<p>We're Evolving</p>	<p>Let it shine</p>	<p>Electrifying</p>	<p>We are dinosaur hunters</p>
Some	<p>Explain why we have a taxonomic system.</p> <p>Explain why the same observations can support</p>	<p>Investigate some effects of exercise on the body.</p> <p>Present data in appropriate ways.</p>	<p>Interpret evidence of fossils to explain how things have changed over time.</p> <p>explain the</p>	<p>Explain the difference between shadow formation and reflection in terms of the path of light.</p>	<p>Interpret more complex circuit diagrams.</p> <p>Describe the differences between wires usually used for</p>	<p>Talk about how ideas of how some dinosaurs looked have changed.</p> <p>Explain what trace fossils are and how they</p>

	<p>different Explanations.</p> <p>Compare and evaluate different ways of classifying organisms.</p>	<p>Use evidence to support or refute an assertion.</p>	<p>contribution made by people to our understanding of evolution</p>	<p>Explain using ray diagrams how light enables us to see objects.</p>	<p>circuits and fuse wires.</p> <p>Design games and activities independently.</p> <p>Explain clearly and scientifically what has been learned.</p>	<p>help scientists.</p> <p>Compare the ratio of brain to body size of some animals.</p> <p>Explain why scientists still don't know exactly why dinosaurs died out.</p>
Most	<p>Explain the differences between fungi, plants and microbes.</p> <p>Record and display ideas in various ways and justify explanations.</p> <p>Ask a range of questions to put things into groups.</p> <p>make a branching key</p>	<p>Understand the function of parts of the circulatory system.</p> <p>Explain the effect of drugs on the body.</p>	<p>Explain why parents and offspring look different.</p> <p>Explain simply how things change and evolve over time.</p> <p>Recognise the timescales involved in evolution.</p> <p>Explain how evidence can be used to support ideas.</p>	<p>Recognise that light travels from a source, and that when it is blocked, a shadow is formed.</p> <p>Describe how when light hits a shiny surface, it is reflected.</p> <p>Explain that light sources are seen when light from them enters the eyes.</p> <p>Make careful measurements of shadows.</p> <p>Describe a pattern in shadow size and distance to source. Identify and manage variables in an enquiry. Present findings and conclusions from experiments in various ways.</p>	<p>Suggest ways of changing the brightness of a bulb in a circuit.</p> <p>Draw circuit diagrams and construct circuits from diagrams using conventional symbols.</p> <p>Set up a circuit which can be used to investigate an idea.</p> <p>Use knowledge about electrical conductors and insulators to answer questions about circuits. Represent information about circuits clearly and scientifically with symbols.</p>	<p>Explain what their results might mean.</p> <p>Make and present detailed observations.</p> <p>Decide if they agree with other people's test results.</p> <p>Weigh up different theories and decide which has the strongest evidence.</p> <p>Find some evidence to support a theory about why dinosaurs became extinct.</p> <p>Use their results to make predictions and suggest further tests.</p>

				Use results to make predictions and suggest further tests to carry out.		
All	<p>Recognise fungi, plants and microbes.</p> <p>Name a range of living things.</p> <p>Observe carefully in order to identify living things.</p> <p>Use a branching key.</p>	<p>Recognise the need to eat a healthy balanced diet.</p> <p>Take and record measurements.</p>	<p>Observe closely and explain differences in appearance.</p> <p>Describe how parents and offspring look similar but different.</p> <p>Present data in a variety of ways.</p>	<p>Recognise that when light is blocked, a shadow is formed.</p> <p>Describe that reflections can be seen in shiny surfaces. take measurements and present these in a table</p>	<p>Recognise symbols for some electrical components.</p> <p>Construct some working circuits with specified components.</p>	<p>Suggest the best way to try and find the answer to a question.</p> <p>Record their results clearly.</p> <p>Explain what their observations show.</p>