

Science

Biology

Data analysis

Chemistry

Physics

Evidence to
develop
explanations

Methods used to
answer
questions

Apparatus and
techniques including
measurement

Choices + Vocabulary

Science Curriculum Overview

	EYFS		Y1	Y2	Y3	Y4	Y5	Y6
Autumn	Seasons and Seasonal Scavenger hunts	Forces Animals and environments	Seasons (throughout the year)	Local habitats	Rocks, soils and fossils	Changes of state	Forces and mechanisms	Classification of living things
			Human body and senses					
			Naming and describing materials	Choosing materials	Light and shadows	Electricity - circuits	Properties and uses of materials	Evolution and inheritance
Spring		Minibeasts	Properties and uses of materials	Growing up (animals and humans)	Forces, friction, magnets	Digestion and food chains	Earth and space	What light does
		Melting	Animals - vertebrates	Growing seeds and bulbs	Movement and nutrition for the human body	Human impact on the environment	Plant and animal lifecycles	Human circulation
		Life Cycles (animals)						
Summer		Growing flowers and Plants	Identifying plants and their parts	Changing materials	Flowering plants and plant growth	Sound	Separating materials and changing materials	Electricity – changing circuits
		Life cycles (plants)						
	Light and Shadows	Growing healthy plants	Flowering plants lifecycle	Classification of plants and animals	Human growth	Body health		

Devonshire Road Primary School

Bringing everyone

Substantive Concepts Overview

	<u>Physics</u>	<u>Chemistry</u>	<u>Biology</u>	
	x			EYFS
			x	Forces
			x	Animals and environments
			x	Minibeasts
			x	Growing flowers and plants
		x		Melting
			x	Life cycles (Animals)
			x	Growing flowers and plants
			x	Life cycles (plants)
	x			Light and shadows
			x	H body /senses
		x		Materials name/describe
		x		Materials properties/uses
			x	Animals- vertebrates
			x	Plants and parts
	x		x	Seasons
			x	Local habitats
		x		Changing materials
			x	Growing up animals/h
			x	Growing seeds/bulbs
			x	Changing materials
			x	Growing healthy plants
			x	Rocks, soils, fossils
	x			Light/shadows
x			Forces/friction/magnets	
		x	Movement + nutrition	
		X	Flowering plants growth	
		x	Flowering plants lifecycle	
		x	Changes of state	
x			Electricity, circuits	
		x	Digestion and food chains	
		x	Human impact on the environment	
x			Sound	
		x	Classification – plants and animals	
x			Forces and mechanisms	
	x		Properties/uses of materials	
x			Earth and space	
		x	Plant and animal lifecycles	
		x	Separating/changing materials	
		x	Human growth	
		x	Classification living things	
		x	Evolution/inheritance	
x			What light does	
		x	Human circulation	
x			Electricity changing circuits	
		x	Body health	

Substantive Knowledge and Concepts

	<u>EYFS</u>	<u>Y1</u>	<u>Y2</u>	<u>Y3</u>	<u>Y4</u>	<u>Y5</u>	<u>Y6</u>
	-	-	-	-	-	-	-
<u>Biology</u>	<p><u>Seasons</u></p> <ul style="list-style-type: none"> There are 4 seasons over the year (Spring, Summer, Autumn, Winter). Animals behave differently in winter to protect themselves. <p><u>Animals and Environments</u></p> <ul style="list-style-type: none"> Some animals are nocturnal (awake at night) – e.g. owls. <p><u>Minibeasts</u></p> <ul style="list-style-type: none"> A minibeast is a tiny creature, like a bug (such as ladybird, spider, worm). Minibeasts live under the ground or in leaves/grass. <p><u>Growing flowers and plants</u></p> <ul style="list-style-type: none"> Know that flowers and plants need sunlight and water to live. <p><u>Life cycles (animals)</u></p> <ul style="list-style-type: none"> Chicks and ducklings hatch from eggs 	<p><u>Human Body and Senses</u></p> <ul style="list-style-type: none"> Humans are mammals Humans have five senses: sight, touch, taste, hear, feel Identify, name, draw, label the parts of the body associated with the senses Humans are similar but not identical. <p><u>Animals – vertebrates</u></p> <ul style="list-style-type: none"> Vertebrates are animals with backbones. 5 vertebrate groups: Reptiles – eggs, claws, teeth, scales, live on land Birds -eggs, feathers, beaks, claws Amphibians-eggs, water and land living and changes Fish- water, scales, gills, teeth, fins, eggs Mammals- hair/fur, live young, produce milk, look like parents, range of movements Identify and name carnivores, omnivores, herbivores 	<p><u>Growing up (animals and humans)</u></p> <ul style="list-style-type: none"> Animals, including humans, have babies that grow and change All need food, water and air to survive Humans need food from 4 food groups daily Humans need to stay clean to be healthy Physical activity is needed to be healthy <p><u>Growing seeds and bulbs</u></p> <ul style="list-style-type: none"> Germination is when a seed starts to sprout and grow. Seeds need certain conditions to germinate. All require water, some require warmth, and most do not need light. Seeds come in a variety of sizes. The size of the seed does not determine how tall the mature plant that grows from it will be. Mature plants can grow from either seeds or bulbs. <p><u>Growing healthy plants</u></p> <ul style="list-style-type: none"> Seeds germinate into seedlings and then grow into mature plants. 	<p><u>Movement and Motion for the human body</u></p> <ul style="list-style-type: none"> Different foods contain different nutrients which have different uses Some bones protect organs and others provide support. Joints allow movement Muscles work in pairs to move bones Vertebrates are supported by an internal skeleton. All have a spine. Vertebrate bones vary in size and shape Invertebrates have no bony skeleton <p><u>Flowering plants and plant growth</u></p> <ul style="list-style-type: none"> Leaves capture sunlight. Energy from sunlight is used to produce the plant's food. Some of this food is used to make the plant grow. Roots anchor the plant into the soil and absorb water and minerals. 	<p><u>Digestion and food chains</u></p> <ul style="list-style-type: none"> Digestive system breaks down food to use for energy and growth. It gets rid of the waste. Mouth; oesophagus; stomach and small intestine break food down using chemicals; large intestine absorbs water; rectum stores poo; anus. Teeth have different shapes for different purposes. Incisors cut, canines tear, molars grind. Carnivores have sharp slicing teeth. Herbivores have flat teeth for grinding. Food chains show how energy and nutrients pass. Producer (plant) makes energy using water, air, sun's energy. Herbivore (consumer) eats the plant. Carnivore (animal - predator) eats the consumer <p>ENVIRONMENTAL</p> <p><u>Human impact on the environment</u></p>	<p><u>Plant and animal life cycles</u></p> <ul style="list-style-type: none"> All living things have a lifecycle – growth, reproduction, death, decay. Most animals reproduce sexually with a male and female part. Female birds lay hard shelled eggs, fertilised or unfertilised. Female mammals have live young and produce milk. Amphibian females' eggs are fertilised outside the body. Some go through metamorphosis. Most insects go through complete metamorphosis, but some incomplete. Flowers contain both male sex organs (stamen) and female (carpel). Pollination – pollen must be moved to the stigma for reproduction. Seeds are produced by sexual reproduction. 	<p><u>Human circulation</u></p> <ul style="list-style-type: none"> Blood carries water and nutrients (used for energy, health and growth) around the body. Blood is made up of plasma, red blood cells, white blood cells and platelets. The circulatory system pumps blood from the heart to the lungs, back to the heart and onto the rest of the body in a figure-of-eight system. Blood passes through each side of the heart separately in one circuit. The heart is a muscle. One side pumps blood full of oxygen from the lungs, the other side pumps blood with the oxygen used up, from the body. Arteries are blood vessels that carry blood away from the heart. Veins carry blood back to the heart. Veins have valves to stop the blood

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	<ul style="list-style-type: none"> Over time they grow to be a chicken/duck Caterpillars hatch from eggs, become a cocoon and then turn into a butterfly. <p><u>Life cycles (animals)</u></p> <ul style="list-style-type: none"> Plants grow from seeds/bulbs They get planted in soil to help them grow. Seeds/bulbs change slowly over time. 	<p><u>Identifying plants and their parts</u></p> <ul style="list-style-type: none"> Names of the parts of a flowering plant that grow above the ground are stem, leaf and flower. Roots grow under the ground and different plants have different roots. Some trees are flowering plants which have roots, stems, leaves and flowers. Identify some trees which lose their leaves in winter (deciduous) and some which don't (evergreens) There are similarities and differences between flowering plants. <p>ENVIRONMENTAL</p> <p><u>Seasonal Changes</u></p> <ul style="list-style-type: none"> There are different types of weather: rain, sun, wind, fog, snow, cloudy. There are four seasons across the year. Each season has its own weather patterns and natural events, which happen each year. 	<ul style="list-style-type: none"> Mature plants need light and water to grow healthily. Different mature plants require different temperatures to grow healthily depending on the type of plant <p>ENVIRONMENTAL</p> <p><u>Local Habitats</u></p> <ul style="list-style-type: none"> All things are either living, dead or have never been alive. Living things include plants (including seeds) and animals. Things that were once alive include dead animals and plants/ parts of plants and animals. Things made of rock, metal and plastic have never been alive. A habitat provides the basic needs of the animals and plants in it: shelter, food and water. There are different types of habitat Animals and plants live in a habitat to which they are suited. Animals obtain their food from plants and other animals. Feeding relationships can be shown in a food chain. Herbivores eat plants e.g. caterpillars eat leaves. Omnivores eat plants and animals e.g. 	<ul style="list-style-type: none"> This water is transported to the leaves and flowers via small tubes within the stem. The stem also provides support for the plant and holds the leaves and flowers up. Leaves have tiny holes in them which allow air into the plant. The energy from the sunlight is used to turn air and water into the plant's food. When plants are overcrowded, they compete with each other for sunlight, water and nutrients. Plants which are able to get more sunlight, water and nutrients will grow faster and bigger than the others. Different plants live in different habitats. Plants are adapted to the habitat that they live in. <p><u>Flowering plants lifecycle</u></p> <ul style="list-style-type: none"> The flower produces the plant's seeds. A flower has: a female part (which produces the ovule) and male parts (which 	<ul style="list-style-type: none"> Litter is things that have been thrown away Some waste materials can be processed and reused. Decomposition is when dead plants and animals break down and help other living things grow. Worms, bacteria and fungi help decomposition. Pollution is the introduction of non-biodegradable materials e.g. glass, plastic, into the environment. Pollution can result in habitat destruction and cause harm to animals. <p>CLASSIFICATION</p> <p><u>Classification of plants and animals</u></p> <ul style="list-style-type: none"> Living things are classified into five groups. These include animals and plants. Classification is the process of grouping living things together based on how they look and how they're related to each other. Vertebrates are classified into five main groups: mammals, fish, amphibians, reptiles and birds. 	<ul style="list-style-type: none"> New plants are not identical to the parent. Asexual reproduction creates plants which are identical to the parent. <p><u>Human growth</u></p> <ul style="list-style-type: none"> Humans go through gestation, infancy, childhood, puberty. Male and female bodies change during puberty (around 12 years) and grow rapidly. Male sexual organs develop and female bodies change to prepare to have babies. 	<p>flowing backwards.</p> <p><u>Body health</u></p> <ul style="list-style-type: none"> Healthy diet maintains or improves general health in humans and other animals. Without a balanced diet, risk of malnutrition, which can result in unplanned weight loss, muscle loss or vitamin and mineral deficiencies. Our pulse increases when we exercise to meet the increased need for oxygen in our muscles. Regular physical activity prevents obesity; keeps heart, lungs and muscles healthy; increases flexibility and strength; and helps to fight off infections. Drugs are any substances that alter the way the body works. <p>EVOLUTION</p> <p><u>Evolution and inheritance</u></p> <ul style="list-style-type: none"> Species is a group of organisms that can reproduce and have offspring which
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							<ul style="list-style-type: none"> • Offspring are similar but not identical their parents. • If a habitat changes, organisms which are best suited to the new habitat are more likely to reproduce. Their offspring are more likely to have the survival adaptations of their parents. • This process is called natural selection. • Charles Darwin and Alfred Wallace both proposed a mechanism for evolution which is called natural selection <p> CLASSIFICATION <u>Classification of living things</u> </p> <ul style="list-style-type: none"> • Living things are classified into five groups, which are called kingdoms.- animals fungi, protista and monera. • Plants are divided into four smaller groups: flowering plants, ferns, mosses and conifers. • Animals are divided into two groups: vertebrates and invertebrates. • Vertebrates are split into five
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							<p>smaller groups: mammals, birds, amphibians, reptile and fish.</p> <ul style="list-style-type: none"> Invertebrates are split into five smaller groups: molluscs, arthropods, flatworms, echinodermata and annelids. Arthropods are split into four smaller groups: myriapods, insects, arachnids and crustaceans
Chemistry	<p><u>Melting</u></p> <ul style="list-style-type: none"> Melting happens when something hard turns into a runny liquid (e.g. ice to water when left in the sun). 	<p><u>Naming and describing materials</u></p> <ul style="list-style-type: none"> Everything around us is made from materials. Some materials are natural. Some materials are manmade materials (e.g. sand is used to make glass and oil is used to make plastic) . – <i>is this too hard</i> Different materials have different characteristics (such as hard, soft, bumpy, transparent etc.). Identify and name common materials including wood, plastic, glass, metal, water and rock Materials should be used 	<p><u>Properties and uses of materials</u></p> <ul style="list-style-type: none"> Objects can be made from more than one material, including recycled materials. Materials have physical properties that make them useful for different purposes <p><u>Choosing materials</u></p> <ul style="list-style-type: none"> Objects can be tested and sorted according to the properties of the materials they are made from. Inventors discover new uses for materials and create new materials. <u>Changing materials</u> Squashing, bending, stretching and twisting can change the shape of some materials. 	<p><u>Rocks</u></p> <ul style="list-style-type: none"> Rocks can be compared and grouped according to their appearance and simple properties. Rocks change over time depending on their physical properties. Soils are made from rocks and organic material. Specific properties of different soils affect whether they absorb and hold water or not. Fossils are formed when living things are trapped within rock. Human knowledge of the living world 	<p><u>Changes of state</u></p> <ul style="list-style-type: none"> A solid holds its shape. Liquids can be poured and will spread out. Both solids and liquids have a fixed volume. Water freezes at zero degrees Celsius. Freezing/solidifying is when a liquid changes state into a solid. Melting is when a solid changes state into a liquid. Different materials melt at different temperatures. Melting and freezing are reversible processes. Air is a gas. Gases have substance (take up space) and have weight. Gases change in shape and 	<p><u>Properties and uses of materials</u></p> <ul style="list-style-type: none"> Materials have physical properties that make them fit for certain purposes. Weathering, wear and tear can occur over time and this will have an impact upon a material's fitness for purpose. The properties of liquids include having a fixed weight, a fixed volume, an ability to flow, a level of viscosity; and they take on the shape of a container. The viscosity of a liquid describes how thick or thin it is and how fast or slowly it will flow. 	

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		<ul style="list-style-type: none"> carefully and can often be reused or recycled. Objects can be sorted according to their properties Be able to name an object and identify the material it is made from. 	<ul style="list-style-type: none"> Different properties allow the shapes of materials to be changed in different ways. Objects are made from materials with properties that make them fit for purpose 	<p>has been developed through the lives and work of fossil scientists such as Mary Anning.</p>	<ul style="list-style-type: none"> volume to fill the space they are in. When water changes state from liquid into gas it becomes water vapour. This process is called evaporation. Liquids other than water evaporate too. Steam is the invisible gas produced by boiling water. When water vapour changes state from gas into liquid it becomes water. This process is called condensation. The Earth's water can be a liquid (water), a gas (vapour) and a solid (ice). Water in the environment evaporates into the air then the warm air cools as it rises, leading to condensation and the formation of clouds. Water droplets in the clouds fall as rain (or as snow or hail if cooled below freezing point). The water returns to the sea via streams, lakes and rivers to continue the water cycle 	<ul style="list-style-type: none"> A thermal insulator is a material that does not transmit heat through it well. A thermal conductor is a material that transmits heat through it very well. A thermal insulator keeps hot things hot and cold things cold. Materials can be absorbent. Some materials are permeable and let water pass through. Some materials are waterproof and do not let water pass through. <p><u>Separating mixtures and changing materials</u></p> <ul style="list-style-type: none"> Solid, dry mixtures of materials can be separated by sieving. Some solids dissolve in water while others do not. Solids that do not dissolve can be separated from a liquid by filtering. Solids which dissolve can be retrieved if the liquid is evaporated. Dissolving and mixing are 	
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						reversible changes <ul style="list-style-type: none"> Some changes of state are reversible, and others are non-reversible. Non-reversible changes result in the formation of new material 	
Physics	<u>Forces</u> <ul style="list-style-type: none"> We can feel forces (such as water pushing up). Magnetic means it can stick to some metals and pulls them closer. <u>Light and Shadows</u> <ul style="list-style-type: none"> Light helps us see When there is no light, it is dark Shadows are made when something blocks the light. 			LIGHT <u>Light and shadows</u> <ul style="list-style-type: none"> Light comes from light sources. Dark is the absence of light. Nothing can be seen if there is no light. Objects are easier to see when there is more light. Shiny materials and objects are good reflectors of light and are easier to see than less reflective ones. Shadows are formed when light is blocked. Objects made from opaque materials cast the darkest shadows. Shadows are the same shape as the objects that cast them. Light from the sun can be dangerous so we need to protect our eyes. The size and position of a shadow can be 	SOUND <u>Sound</u> <ul style="list-style-type: none"> Sounds are made by something vibrating; this is the source. Different sources make different sounds. Vibrations travel from the source through a material to the ear so that we can hear them. Sounds can be quiet or loud; volume depends on the size of the vibrations. Sounds get fainter as the distance from the sound source increases. Sounds can be high or low in pitch. Pitch depends on the size of the object vibrating. The pitch of a note played on a stringed instrument depends on the length, thickness and tautness of the vibrating string ELECTRICITY <u>Electricity – circuits</u>	FORCES <u>Forces and mechanisms</u> <ul style="list-style-type: none"> Friction is a force that makes it harder to move an object across a surface or slows down an object moving over a surface. The unit of measurement of a force is Newtons (abbreviated to N). Gravity is a force that pulls all objects to the centre of the Earth. Air resistance is a force that slows down an object moving through air. The amount of air resistance depends on the surface area of the object. Air resistance, not weight, affects how quickly an object falls. Water resistance is a force that slows down an object moving through water. 	LIGHT <u>What light does</u> <ul style="list-style-type: none"> Light appears to travel in straight lines. We can see a light source because some of the light from the source enters our eyes. Light travelling in straight lines can be used to explain why a shadow is the same shape as the object that casts it and how the shape of shadows can be changed. Light is reflected from shiny surfaces in a predictable way because it travels in straight lines. We can see objects because they reflect some of the light that falls onto them into our eyes ELECTRICITY <u>Electricity – changing circuits</u> <ul style="list-style-type: none"> Circuit diagrams using standard

				<p>changed by moving the light source</p> <p>FORCES <u>Forces, friction and magnets</u></p> <ul style="list-style-type: none"> A force is a push or pull that can make something move. The surface a spinning top is moving on affects how long it spins for. The surface on which an object rests affects how it slides. Magnets have a North and a South pole. Unlike poles attract and like poles repel each other. Some metals are attracted to a magnet and are known as magnetic. Other materials are not. The strength of magnets varies and can be tested using the idea that magnetic forces act at a distance 	<ul style="list-style-type: none"> Any household devices and appliances run on electricity. Some plug in to the mains and others run on batteries. An electrical circuit consists of a cell or battery connected to a component using wires. A switch can be added to a circuit to turn the component on and off. If there is a break in a circuit, a loose connection or a short circuit, the component will not work. Metals are good electrical conductors. Non-metals are generally electrical insulators except for graphite (pencil lead), human tissue and water 	<ul style="list-style-type: none"> The amount of water resistance depends on the shape of the object. Mechanisms can be used for a smaller force to have a greater effect. Pulleys lift heavy objects using a rope over a wheel. Levers use a force on one part of an arm to lift a load on another part. Gears are wheels with teeth that can change direction or force needed to make something move. <p>EARTH IN SPACE <u>Earth and space</u></p> <ul style="list-style-type: none"> The main bodies that are found in space are the Sun, Moon, Earth and planets. They are all spherical. The Earth and the other planets all orbit the Sun. The time it takes to complete one orbit is called a year. The other planets of our solar system also orbit the Sun at different distances and taking different 	<p>symbols are used to record circuits.</p> <ul style="list-style-type: none"> Adding cells to a circuit makes a lamp brighter. A lamp gets brighter if the voltage in the circuit is increased. A lamp gets dimmer if thinner wires are used. If the voltage is increased in a circuit, a buzzer makes a louder sound and a motor turns more quickly.
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						<p>times to complete one orbit.</p> <ul style="list-style-type: none"> • The Sun appears to move east to west in an arc across the sky from sunrise to sunset. • Changes in shadows during the day can be explained by the changes in the position of the Sun. • The Earth rotates on its axis and this causes day and night, the apparent movement of the Sun across the sky and changes in shadows. • The Moon orbits the Earth every 28 days and rotates on its axis. 	
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Disciplinary Knowledge and Concepts

	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
	-	-	-	-	-	-	-
Methods used to answer questions	<ul style="list-style-type: none"> Use the real-world to answer questions about the 4 seasons. Observe and explore forces they can feel (including magnetic attraction, sinking and floating, water pushing up). Use simple equipment to answer questions about shadows. 	<ul style="list-style-type: none"> Ask questions - notice and observe. Show curiosity similarities/differences – living things + materials. Answer questions from observations. Sorting hoops to group. ID sheets to identify living things. Simple scientific language – describe observations/answer questions. Recognise and rank differences. 	<ul style="list-style-type: none"> Ask questions similarities/differences, material suitability, changes. Realise different ways to answer – naming, sorting, comparing. Select own sorting criteria. Classify living things using ID cards. Identify patterns. Use data collected to answer questions. Begin to develop explanations. 	<ul style="list-style-type: none"> Suggest questions to investigate. Names of enquiry types. State the science used to answer. Relate similarities and differences to simple scientific ideas/processes. Refer to own data when answering questions. 	<ul style="list-style-type: none"> Decide how to gather evidence to answer. Use range of question stems. Answer questions about types of enquiry used. Make comparative statements. Begin to identify simple causal relationships. Use simple models for scientific processes. Use own data to answer questions. Use secondary sources to answer questions. 	<ul style="list-style-type: none"> Identify independent (the one we change) and dependent (the one we measure/observe) variables – use for fair/comparative test questions. Research secondary sources. Justify enquiry type chosen. 	<ul style="list-style-type: none"> Decide where and how to collect information (controlling variables, choosing observations or measurements). Recognise how secondary sources can be used when questions can't be answered through practical work. Ask/write enquiry questions.
Apparatus and techniques including measurement	<ul style="list-style-type: none"> Observe, explore and discuss minibeasts Plant flowers and plants and observe changes over time. Observe melting changes over time. Observe changes over time in relation to life cycles (e.g. eggs hatching/cocoons forming, changes from seedlings). 	<ul style="list-style-type: none"> Observations using all senses – context specific vocabulary. Magnifiers. Make comparisons. Follow simple instructions – comparative tests. Practical resources e.g. water droppers. Gather 1st hand data – variety of sources. Record in words, labelled pictures, prepared tables & pictograms. 	<ul style="list-style-type: none"> More systematic observations of features & changes. Non-standard units of measurement. Thermometer is used to measure temperature. Comparative test – change only 1 thing. Begin to plan tests independently. 	<ul style="list-style-type: none"> Plan observing over time enquiries – observations and/or measurements. Plan comparative tests – some decisions about change and measure. Some decisions about which practical resources. 	<ul style="list-style-type: none"> Use terms variable and control variable. Use a fair test planner – identify variables to change, measure & keep the same. Plan and carry out fair and comparative tests. 	<ul style="list-style-type: none"> Use force meters. Use measuring cylinders accurately. Decide if repeat readings are needed for accuracy. 	<ul style="list-style-type: none"> Construct data collection tables. Select equipment with suitable scales – force meters, ruler/tape measure

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	<ul style="list-style-type: none"> Use terminology to explain the changes to a shadow (bigger, smaller). 	block/paper strip bar charts.	<ul style="list-style-type: none"> Learn to set up observation over time enquiry. Predict result. Use prepared tables to classify living things and materials. Construct bar charts using templates. Label diagrams. 	<ul style="list-style-type: none"> Learn to use a data logger, stop watch, weighing scales, rulers. Use a digital microscope. Use standard units of measure. Make systematic & careful observations. 	<ul style="list-style-type: none"> Follow instructions to carry out a pattern seeking enquiry. Use a thermometer. Use standard units of measure. Use senses for observations. 		
Data analysis				<ul style="list-style-type: none"> Gather evidence including first hand observation/ experimental data and secondary sources. Use tally charts. Construct tables. Draw labelled diagrams with keys. Construct simple food chains. Use scientific language. Make some decisions about how to record. Use different ways to report e.g. posters, writing, labelled diagrams, oral, drama. 	<ul style="list-style-type: none"> Become systematic and accurate in data collection. Learn branching keys. Learn to draw a bar chart – label axes and choose scale intervals. Use non standard symbols for electrical circuits. Sequence flow charts. Use Venn and Carroll diagrams. Make detailed observational drawings. Make choices about how to report. Use scientific vocabulary consistently and accurately. 	<ul style="list-style-type: none"> Create tables to collect data. Draw/label line graphs, scatter graphs, bar charts – suitable scale with equal intervals, variables on correct axis, plot correctly Draw labelled diagrams of mechanisms and structures. 	<ul style="list-style-type: none"> Construct/use range of ways to record data. Create branching keys with 4 or more items. Draw circuit diagrams using recognised symbols.

Subject Progression Science



Evidence to develop explanations	<ul style="list-style-type: none"> • Use real-world visits to explain differences over time (seasons) • Use images of plants/flowers over time to explain how they've changed. 			<ul style="list-style-type: none"> • Predict outcomes of tests. • Use evidence for simple conclusions. • Begin to evaluate the effectiveness of tests. 	<ul style="list-style-type: none"> • Identify simple patterns between 2 data sets. • Use test results to propose solutions to problems. 	<ul style="list-style-type: none"> • Use test results to make predictions. • Pose further questions. • Use data to identify causal relationships. • Explain how to increase measurement accuracy. • Consistent/accurate use of key vocabulary. • Make decisions about relevant data to present. • Recognise different ways to report findings – scales, charts, reports, annotated diagrams, graphs, charts, inventor's notebooks, multimedia presentations. 	<ul style="list-style-type: none"> • Analyse scatter graphs. • Recognise need for as much data as possible in pattern seeking enquiry. • Use scientific vocabulary for findings – written, oral, dramatic, multimedia. • Use/evaluate models for systems/processes.
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