Camps Hill Primary School- Science Curriculum Progression

Intent: We give children an enriched Science curriculum. Using equipment, conducting experiments, building arguments and explaining concepts confidently. Seeing themselves as scientists. We want children to be confident to ask questions and be curious about their surroundings and the world they live in.

Science Knowledge and Skills Strands

Scientific knowledge and understanding	Working scientifically	Science in action

Key Areas

Plants	Animals including humans	Living things and their habitats	Materials	Energy	Forces, Earth and space	Making connections

Topics across the Year	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn	Animal adventures	Seasonal changes	Habitats	Movement and nutrition	Digestion and food	Mixtures and separation	Classifying big and small
	Changing seasons	Everyday materials	Microhabitats	Forces and magnets	Electricity and circuits	Properties and changes	Light and reflection
Spring	I am a scientist	Sensitive bodies	Uses of everyday materials	Rocks and soil	States of matter	Earth and Space	Evolution and inheritance
	Changing seasons	Comparing animals	Life cycles and health	Light and shadows	Sound and vibrations	Life cycles and reproduction	Circuits, batteries and switches
Summer	Our beautiful planet	Introduction to plants	Plant growth	Plant reproduction	Classification and changing habitats	Unbalanced forces	Circulation and health
	Changing seasons	Investigating science through stories	Plant-based materials	Does hand span affect grip strength?	How does the flow of liquids compare?	Human timeline Does the size of an asteroid affect its impact strength?	Are some sunglasses safer than others?

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National Curriculum						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
EYFS Foundation areas: Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them –from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension.	**National Curriculum:** • Enable pupils to experience and observe natural phenomena, looking closely at the natural and humanly constructed world around them. • Be curious and ask questions about what they notice • They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. • They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways		**National Curriculum:** • Pupils in years 3 and 4 should be given a range of scientific experiences to enable them to raise their own questions about the world around them. • They should start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. • They should begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. • They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data. • With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. • With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected, and finding ways of improving what they have already done. • They should also recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.		**National Curriculum:** • The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. • At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. • They should also begin to recognise that scientific ideas change and develop over time. • They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. • Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. Pupils should read, spell and pronounce scientific vocabulary correctly.	

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Scientific knowledge and understanding	**Plants**	Year group and topic	**EYFS: Reception** **Our beautiful planet**	**Year 1** **Introduction to plants**	**Year 2** **Plant growth**	**Year 3** **Plant reproduction**			
		Plant structure and function	To know the name for the basic plant parts (leaves, flowers, stem and roots.) To know the names of some familiar flowering plants (e.g. daisy, rose, sunflower, daffodil).*	To know a variety of common plants, and how they differ. To know that deciduous trees lose their leaves seasonally, but evergreen trees do not. To know the basic structure (including leaves, flowers (blossom), fruit, roots, bulb, seed, trunk, branches, stem) of a variety of common plants, including flowering plants and trees.		To understand the functions of the basic parts of a plant and the relationship between structure and function. To know that water is transported within a plant from the root, through the stem, to the leaves.			
		Plant growth and needs	To know plants are alive. To know that seeds need water to grow.	To begin to understand how plants grow and change over time.	To know that seeds and bulbs grow into seedlings by producing roots and shoots. To know that seedlings grow into mature plants by developing parts such as roots, stems, leaves and flowers. To know that seeds need water and warmth to germinate. To know that plants need water, light and a suitable temperature for growth and health.	To know that plants need water, light, air, nutrients and a suitable temperature for growth and health. To understand that the needs for growth and health vary from plant to plant.			
		Plant life cycle	To know that seeds grow into plants if taken care of.			To know the life cycle of a plant from seed to mature plant. To know that flowers are the reproductive organ of a plant. To know that the process of pollination is the transfer of pollen to the female (part of the) flower. To know that the process of seed formation is the growth of a seed after pollination. To know some different methods of seed dispersal and the benefits of each.			

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		Year group and topic	EYFS: Reception Animal adventures	Year 1 Sensitive bodies Comparing animals	Year 2 Life cycles and health	Year 3 Movement and nutrition	Year 4 Digestion and food	Year 5 Human timeline	Year 6 Circulation and health
Scientific knowledge and understanding	Animals including humans	Animal growth	To know the names of familiar animals (e.g. farm animals, pets and animals seen in storybooks.)	To know a variety of common animals (including fish, amphibians, reptiles, birds and mammals).	To understand how living things change, and that animals have offspring that grow into adults. To know which offspring comes from which parent animal. To know the stages in some animal life cycles.			To describe the human life cycle, including the stages of growth and development (baby, toddler, child, teenager, adult, elderly). To describe changes that occur during puberty (in boys and girls). To know that gestation periods vary across mammals.	
		Animal structure and function	To know the main body parts of common animals (number of legs, wings, fur, tail). To know that animals, including humans use their senses to explore the world.	To know the main body parts of common animals (arms, legs, wings, tails, fins, head, trunk, horns/tusks, shell) To know key parts of the human body (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth). To know the five main senses: sight, smell, hearing, taste and touch. To know that the skin is used for touch, the tongue is used for taste, the nose is used for smell, the eyes are used for sight and the ears are used for hearing.		To know that animals can be grouped based on the presence of a skeleton. To know that the skeleton in humans and some animals is used for movement, protection and support. To know that the muscular system in humans and some animals works with the skeleton for movement. To know the main bones in the body.	To know the main organs of the human digestive system (mouth, teeth, tongue, oesophagus, stomach, small and large intestines) and describe their simple functions. To know the different types of human teeth (incisor, canine, premolar and molar) and their simple functions.		To know the main parts of the human circulatory system (heart, blood vessels and blood). To know that the heart pumps blood around the body. To know that the blood vessels transport blood around the body. To know that the blood transports vital substances around the body, including oxygen and nutrients. To understand the relationships between different organ systems.
		Health and nutrition	To know that animals need food.	To know that a carnivore is an animal that eats other animals and give some examples. To know that a herbivore is an animal that eats only plants and give some examples. To know that an omnivore is an animal that eats both animals and plants, and to give some examples.	To know that animals, including humans, need water, food and air to survive. To understand the importance of exercise, a balanced diet and hygiene for humans.	To know that animals, including humans, need the right types and amount of nutrition. To understand that humans cannot make their own food and therefore eat to get the nutrition needed. To know the main nutrient groups (carbohydrates, protein, fats, fibre, vitamins, minerals and water) and their simple functions. To know that a balanced diet should include all nutrient groups. To describe the diets of different animals.	To know that teeth can be damaged, including the effect of sugary and acidic food. To know that it is important to brush teeth twice a day, make good food choices and visit the dentist regularly. To describe the teeth of carnivores and herbivores, and understand why they are different. To know that predators hunt for their food and prey are the animals being hunted. To know that producers make their own food. To know that food chains begin with a producer followed by consumers, and arrows to show the energy passed on.		To understand the impact of diet, exercise, drugs and lifestyle on the way a body functions. To know that the heart rate is the number of beats per minute. To know that exercise increases heart rate.

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		Year group and topic	EYFS: Reception Animal adventures		Year 2 Habitats and microhabitats		Year 4 Classification and changing habitats	Year 5 Life cycles and reproduction	Year 6 Classifying big and small Evolution and inheritance
Scientific knowledge and understanding	Living thigs and their habitats	Characteristics of living things	To know that animals and plants move, grow and feed. To know the difference between things that are living and things that are non-living. To know that some animals hibernate or store food in winter.*		To begin to understand some of the life processes, including movement, reproduction, sensitivity, growth, excretion and nutrition. To know the difference between things that are living, dead, and things that have never been alive, using some of the life processes.		To know that living things can be grouped in different ways. To know that a classification key can be used to group and identify plants and animals. To know that vertebrates are animals which have a backbone and invertebrates are animals which do not have a backbone. To know that plants can be grouped into flowering or non-flowering varieties. To know that flowering plants include grasses and non-flowering plants includes ferns and mosses. To know that there are five main vertebrate groups: birds, mammals, reptiles, amphibians and fish. To know that invertebrate groups include snails, slugs, worms, spiders and insects.		To know that 'organism' is a term used to refer to an individual living thing. To know that micro-organisms are incredibly small and cannot usually be seen by the naked eye. To know the characteristics of the different groups of vertebrates and commonly found invertebrates.
		Variation and inheritance	To know the names of familiar animals (e.g. farm animals, pets and animals seen in storybooks.)* To know the names of some familiar flowering plants (e.g. daisy, rose, sunflower, daffodil).*		To know a variety of plants and animals and describe some differences.			To know that a life cycle shows the changes an animal or plant goes through until the reproduction of a new generation when the cycle starts again. To know that all living things must reproduce for the species to survive. To know that sexual reproduction requires two parents, whereas asexual reproduction only requires one parent. To know that there are different processes plants and animals use to reproduce (asexual and sexual reproduction).	To know that living things have changed over time. To know that fossils provide us with information about living things that inhabited the Earth millions of years ago. To know that characteristics are passed from parents to their offspring, but that all offspring vary from their parents. To know that over time, variation in offspring can affect animals' chances of survival in particular environments.
		Habitats and interdependence	To know that plants and animals live in a range of different places. To name some different places where animals live on the school site.		To name a variety of habitats, including woodland, ocean, rainforest and seashore. To know that a habitat is the environment where an animal or plant lives/ grows, because it provides what they need to survive. To know that a micro-habitat is a very small habitat (e.g. stones, logs and leaf litter). To know that living things depend upon each other (e.g. for food, shelter.) To understand that a food chain can be used to show how animals obtain food from eating either plants and/or other animals.		To know that habitats can change throughout the year and this can be dangerous for living things. To know that humans can have both a positive and negative impact on the environment.		To know that animals and plants have adapted to suit their environment over many millions of years and that this process can be called evolution.

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		Year group and topic	EYFS: Reception I am a scientist	Year 1 Everyday materials	Year 2 Uses of everyday materials	Year 3 Rocks and soil	Year 4 States of matter	Year 5 Mixtures and separation Properties and changes	
Scientific knowledge and understanding	Materials	Identifying and naming		To know that objects are items or things. To know that a material is what an object is made from. To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.		To know that rocks can be grouped based on their appearance or properties, (e.g. colour, texture, hardness, permeability.) To know that rocks may contain grains, crystals or fossils. To know that grains and crystals appear differently and can be used to classify rocks. To know that soils are made from rocks and dead matter.	To know that all substances around us can exist as solids, liquids and gases.		
		Properties and uses	To know objects float or sink.	To know that property refers to how a material can be described. To describe the physical properties of a variety of everyday materials. To understand that materials can be grouped based on their physical properties.	To know why objects are made from particular materials and to give examples of their suitability. To know that one material can be used for a range of purposes (and to give examples.) To know that different materials can be used for the same purpose (and to give examples.) To know why certain materials are unsuitable for particular objects.	To understand the relationship between the properties of rocks and their uses.	To know that a property of a solid is that it keeps its shape unless a force is applied to it. To know that a property of a liquid can flow freely and take on the shape of a container. To know that a property of a gas does not have a fixed shape and can escape from an unsealed container.	To describe a broader range of materials and their properties, including hardness, solubility, transparency, conductivity and response to magnets.	
		Change	To know some objects move when pushed or pulled. To know some objects freeze or melt.		To know that a push or pull must be applied to change the shape of a solid object. To know that solid objects can be squashed, bent, twisted or stretched. To know that different solid objects may take a different amount of force to change shape	To know that fossils can form from the remains of living things. To know that rocks can change over time (e.g. erosion, weathering).	To know that heating causes solids to turn into liquids (melting) and liquids to turn into gases (evaporating). To know that cooling causes gases to turn into liquids (condensing) and liquids to turn into solids (freezing). To know that water can exist as a solid, a liquid or a gas. To know that the melting point of water is zero degrees Celsius and the boiling point of water is 100 degrees Celsius. To know that water flows around the world in a continuous process called the water cycle. To know that in the water cycle, evaporation is when bodies of water are heated and turn into water vapour. To know that in the water cycle, condensation is the process of water vapour cooling to form water droplets in clouds, which can result in precipitation. To know that the rate of evaporation increases as temperature rises.	To know that some substances will dissolve in a liquid to form a solution. To know the factors that affect the time taken to dissolve, including temperature and stirring. To understand that dissolving, mixing and changes of state are reversible changes. To know that some liquids and solids can be separated using sieving, filtering and evaporation and to describe these processes. To understand that some changes result in the formation of new materials and that these are usually irreversible. (e.g. burning, rusting, the action of acid on bicarbonate of soda.)	

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		Year group and topic	EYFS: Reception I am a scientist			Year 3 Light and shadows			Year 6 Light and reflection
Scientific knowledge and understanding	Energy: Light	Sources	To know day is light because the sun is in the sky. To know night is dark because the sun is not in the sky.			To know that light travels from a source (e.g. the Sun, light bulbs and torches). To know that light is needed to see things and that dark is the absence of light. To know that light from the Sun can be dangerous and how to protect their eyes.			To know that light travels in a straight line from a light source. To understand that luminous objects are seen as a result of light directly entering the eye, whereas non-luminous objects reflect light into the eye.
		Transfer	To know that shadows are created when something blocks the light.			To know that all materials reflect light. To know that shadows are formed when the light from a light source is blocked by an opaque object.			To know that shiny surfaces reflect light uniformly. To know that when light is reflected off a surface, its direction changes. To know that mirrors and periscopes work using reflection of light on smooth surfaces. To understand why shadows have the same shape as the objects that cast them as a result of light travelling in straight lines. To understand relationships between light sources, objects and shadows.
		Factors affecting energy				To know that shadows change as a result of different factors: - Changing the position of the light source. - Changing the distances between the light source, object and surface. To know that shadows change position and length throughout the day as the Sun changes position in the sky.			To understand how and why the distance between the object and the screen affects the size of the shadow. To understand how the angle of a reflected ray is affected by the angle of the incoming ray on a smooth surface.

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		Year group and topic	EYFS: Reception I am a scientist				Year 4 Sound and vibrations		
Scientific knowledge and understanding	Energy: Sound	Sources					To understand that sound is a result of vibrations		
		Transfer					To know that vibrations from sounds travel through mediums to the ear. To know that an insulating material reduces the amount of vibrations that pass through it and this can be used to protect the ears from damaging sounds. To know that different materials provide different amounts of insulation against sound.		
		Factors affecting energy	To know about differences in sounds.				To know a variety of ways to change the pitch or volume of a sound. To know that quicker vibrations cause higher-pitched sounds and slower vibrations cause lower-pitched sounds. To know that stronger vibrations cause louder sounds and weaker vibrations cause quieter sounds. To know that sounds get fainter as the distance from the sound source increases.		

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	Energy: Electricity	Year group and topic					**Year 4** **Electricity and circuits**		**Year 6** **Circuits, batteries and switches**
		Sources					To know that all electrical appliances need a power source, including batteries or mains electricity. To know that an electrical circuit needs a complete path for the electrical charge to flow through. To know the main components in a simple series circuit. To know the precautions for working safely with electricity.		To know a wider variety of components in a series circuit (including buzzer and motor). To know the conventions used to draw circuit diagrams, including the recognised symbols for common components and using straight lines.
		Transfer					To know that some materials allow electrical charge to pass through them quickly and these are known as electrical conductors (e.g. metals). To know that some materials do not allow electrical charge to pass through them easily and these are known as electrical insulators (e.g wood and plastic). To know that metals are used for cables and wires because they are good conductors of electricity. To know that plastic is used to cover cables and wires because it is a good insulator.		
		Factors affecting energy					To understand that an open switch breaks a series circuit so the components will be off. To understand that a closed switch completes a series circuit so the components will be on. To understand the relationship between bulb brightness and the number of bulbs in a circuit.		To know that the voltage of a circuit can be changed and how this affects bulb brightness (or buzzer volume).

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		Year group and topic	EYFS: Reception Changing seasons	Year 1 Seasonal changes		Year 3 Forces and magnets		Year 5 Earth and space Unbalanced forces	
	Forces, Earth and space	Key facts	To know that some trees change in the four seasons. To know some signs of each season (leaves on the ground, cold weather, daffodils growing and sunny weather.) To know that some animals hibernate or store food in winter.*	To know the name and order of the four seasons; spring, summer, autumn and winter. To know that it is unsafe to look directly at the Sun.		To know some examples of contact and non-contact forces. To know that some forces are a result of contact between two surfaces, but some forces can act at a distance (e.g. magnetism). To know the North and South poles of a magnet. To know some examples of magnetic materials, including iron and nickel, and how they react to a magnet and each other. To know some different examples of magnets, including bar, horseshoe, button and ring, To know some uses of magnets.		**Year 5 Eart and space:** To know that the Sun is a star at the centre of our solar system. To know that the Sun, Earth and Moon are approximately spherical bodies. To know the names, order and relative positions of the planets and other main celestial bodies. To know that a moon is a celestial body that orbits a planet and give examples of moons that orbit other planets.	**Year 5 Unbalanced forces:** To know that gravity is a non-contact force that pulls objects together. To know that air resistance and water resistance are both types of friction.
		Forces in motion	To know that the weather changes throughout the year. To know and compare weather types (rain, sun, snow, wind).	To know weather associated with the four seasons and how it changes (in the UK). To understand that day length varies across the four seasons, with fewer daylight hours in the winter and more in the summer.		To know that friction is a contact force that acts between two surfaces to slow an object down. To know that magnetism is a non-contact force that affects objects containing magnetic metal. To understand that the opposite poles of a magnet attract one another and like poles repel one another.		To know that the Earth and other planets orbit around the Sun. To know that the tilt of the Earth and its orbit around the Sun causes the seasons. To know that the Moon orbits around the Earth. To understand how the Earth's rotation causes day and night and the apparent movement of the Sun across the sky.	To know that unsupported objects fall towards the Earth because of gravity. To know that friction, air resistance and water resistance act in the opposite direction to a moving object. To know that when forces are imbalanced, the speed, shape or direction of an object changes. To know that when forces are balanced the speed, shape or direction of an object stays the same. To know that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.
		Factors affecting forces				To know that rougher surfaces have more friction between them than smoother surfaces. To understand that the strength of different magnets may vary.			To know that rougher surfaces have more friction between them than smoother surfaces and how that may affect movement. To know that the larger the surface area of an object the greater the air or water resistance it creates.

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	Year group	EYFS: Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working scientifically	**Posing questions**	Asking questions about the natural world with support.	Exploring the world around them and raising their own simple questions. Recognising there are different types of enquiry (ways to answer a question). Responding to suggestions on how to answer questions.		Beginning to raise further questions during the enquiry process. Considering what makes a testable question. Beginning to recognise that there are different types of enquiry and that they are suitable for different questions. Beginning to make suggestions about how different questions could be answered.		Raising questions throughout the enquiry process. Identifying testable questions. Selecting the most appropriate enquiry method to answer questions and give justification.	
	Planning	Beginning to share ideas and suggestions, when working practically	Beginning to recognise whether a test is fair. Deciding if suggested observations are suitable, with support. Ordering a simple method.		Beginning to select from options which variables will be changed, measured and controlled. Beginning to suggest what observations to make and how long to make them for. Planning a simple method, verbally and in writing. Beginning to write a simple method in numbered steps. Selecting and beginning to decide what simple equipment might be used to aid observations and measurements.		Suggesting which variables will be changed, measured and controlled. Making and explaining decisions about what observations to make and how long to make them for. Writing a method including detail about how to ensure control variables are kept the same. Writing a method that considers reliability by planning repeated readings. Suggesting the most appropriate equipment to make observations and measurements and justifying their choices.	
	Predicting	Beginning to make guesses about what might happen.	Suggesting what might happen, often justifying with personal experience.		Making predictions about what they think will happen by: ● Using scientific knowledge and/or personal experience to explain their prediction (because…) ● Beginning to consider cause and effect when making predictions, where appropriate. ● Predicting a trend by considering how the changing variable will affect the measured variable. (The smoother the surface, the longer the distance the car will travel)		Making increasingly scientific predictions by: ● Using previous scientific knowledge and evidence to inform their predictions. ● Using scientific language to describe a potential outcome or explain why they think something will happen. ● Making links between topics to evidence a prediction.	
	Observing (qualitative data)	Commenting on what they see and hear in the natural world.	Using their senses to describe, in simple terms, what they notice or what has changed.		Using their senses to describe, in more detail and with simple scientific vocabulary, what they notice or what has changed.		Using their senses to describe, in detail and with a broader range of scientific vocabulary, what they notice or what has changed.	
	Measuring (quantitative data)	N/A	Using non-standard units to measure and compare. Beginning to use standard units and read simple scales to measure and compare. Beginning to use simple measuring equipment to make approximate measurements.		Using standard units to measure and compare. Using measuring equipment with increasing accuracy. Reading scales with unmarked intervals between numbers.		Using standard units to measure and compare with increasing precision (decimals). Reading a wider variety of scales with unmarked intervals between numbers.	
	Researching	Recognising that information can be found online and in books.	Gathering specific information from one simplified, specified source.		Gathering specific information from a variety of sources.		Gathering answers to open-ended questions from a variety of sources.	

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	Recording (diagrams)	Drawing and labelling pictures of plants and animals.	Drawing and labelling simple diagrams	Beginning to draw more scientific diagrams by: ● Using some standard symbols. ● Drawing in 2D to produce simple line diagrams. ● Labelling with more scientific vocabulary.	Drawing scientific diagrams by: ● Using a wider range of standard symbols. ● Drawing with increasing accuracy. ● Labelling with a broader range of scientific vocabulary. ● Annotating diagrams to explain concepts and convey opinions.
	Recording (tables)	Recognising that tables can be used to record information.	Using a prepared table to record results including: ● Numbers. ● Simple observations. ● Tally frequency	Using a prepared table to record results including more detailed observations. Using tables with more than two columns. Identifying and adding headings to tables. Beginning to design simple results tables.	Using tables with columns that allow for repeat readings. Suggesting headings to tables, including units. Designing results tables with increasing independence with consideration of variables where applicable. Calculating the mean average.
	Grouping and classifying	Grouping objects, plants and animals with support.	Grouping based on visible characteristics. Organising questions to create a simple classification key.	Grouping based on visible characteristics and measurable properties. Populating a pre-prepared branching and number key. Choosing appropriate questions for classification keys.	Grouping in a broader range of contexts. Organising the layout of number and branching keys. Formulating appropriate questions for classification keys.
	Graphing	N/A	Representing data using pictograms and block graphs.	Representing data using bar charts. Drawing bars with greater accuracy. Reading the value of bars with greater accuracy.	Representing data by using line graphs and scatter graphs. Plotting points with greater accuracy. Reading the value of plotted points with greater accuracy.
	Analysing and drawing conclusions	Describing their discoveries when working practically.	Using their results to answer simple questions. Beginning to recognise when results or observations do not match their predictions.	Writing a conclusion to summarise findings using simple scientific vocabulary. Beginning to suggest how one variable may have affected another. Beginning to quote results as evidence of relationships. Identifying data that does not fit a pattern (anomalous data). Recognising when results or observations do not match their predictions. Beginning to use identified patterns to predict new values or trends.	Writing a conclusion to summarise findings using increasingly complex scientific vocabulary. Suggesting with increasing independence how one variable may have affected another. Quoting relevant data as evidence of relationships. Identifying anomalies in repeat data and excluding results where appropriate. Comparing individual, class and/or model data to the prediction and recognising when they do not match. Using identified patterns to predict new values or trends.
	Evaluating	N/A	N/A	Beginning to identify steps in the method that need changing and suggest improvements. Beginning to identify which variables were difficult to control and suggesting how to better control them. Commenting on the degree of trust by reflecting on: ● Results that do not fit a pattern (anomalies). ● The quality of results (accurate measurements and maintaining control variables). Beginning to identify new questions that would further the enquiry.	Identifying steps in the method that need changing and suggesting improvements. Identifying which variables were difficult to control and suggesting how to control them better. Commenting on the degree of trust by also reflecting on: ● Accuracy (human error with equipment). ● Reliability (repeating results). ● Sources of information (e.g. websites, books). Posing new questions in response to the data that would extend the enquiry. Deciding what data to collect to further test direct relationships.

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	EYFS: Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Science in action	To know some different job roles.	To know about famous scientists throughout history. To know about a range of jobs and careers that use scientific knowledge and methods. To know about the work of modern-day scientists. To know about science in the news and recent discoveries. To know there are spiritual, moral, social and cultural links with Science. →					
				To know about the methods and equipment used by scientists throughout history and how these have led to modern methods. To know how scientific knowledge has changed over time, leading to the current understanding of Science. To know about current scientific research and what it aims to achieve in the future. To know that collaboration and peer reviewing is essential for effective scientific progress.	→	
						To know how scientific evidence is used to support or refute ideas or arguments. To know that mistakes can lead to new discoveries.	

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We WILL Build It Better Curriculum

Year 2	Year 3	Year 4	Year 5	Year 6
Kit 1-Hammers and Algorithms	**Kit 2-Screwdrivers, Fasteners & Technology**	**Kit 3-Measurement & Robotics**	**Kit 4-Pliers & Electricity**	**Kit 5-Wrenches $ How We WILL Build It Better**
Spring 1	**Summer 1**	**Autumn 2**	**Spring 2**	**Summer 2**
L1-Safety First!	L1-Safety First!	L1-Safety First!	L1-Safety First!	L1-Safety First!
L2-Cool Tools	L2-Fasten Up!	L2- Game Plan	L2-Food as Fuel	L2-Hold the Line!
L3-Nature's Tools	L3-Whose Screws?	L3- Decisions, Decisions	L3-Do the Twist!	L3-FOD One Out
L4-Hammer History	L4-	L4- I Am Your Ruler	L4-Renewable Energy	L4-Chancing Your Arm
L5-Hammer Highway	L5- Sign of the Times	L5- Design Masters	L5-Get Data Savvy	L5-Building It Better!
L6-Robot Helpers	L6-Botley's Adventures	L6- Finding the Way	L6-Botley's Mission	L6-Reflect for Effect
L7-Let's Get to Work	L7-Action Stations!	L7- Testing Times		L7-Chain of Command
L8-Nailed It!	L8-BINGO!			L8-How Will YOU Build It Better?