



Curriculum 22 – Subject Sequence for Science

Year 4

Project Title Key Concepts NC PoS Reference	Vocabulary	Knowledge (specific facts or truth components. A knowledge statement will often contain substantive, declarative or explicit knowledge.)	Skills (the use and application of composite knowledge. A skill statement will often contain implicit, procedural and disciplinary knowledge.)
<p>Year 4 Digestive System – Science focus</p> <p>Key Concepts: Gather & record data Healthy lifestyle Human body Investigation Measurement Nutrition Observation Parts and functions Questioning Report and conclude</p> <p>Ask relevant questions and using different types of scientific enquiries to answer them</p> <p>Set up simple practical enquiries, comparative and fair tests.</p> <p>Make systematic and careful observations and, where appropriate,</p>	<p>digestive system digesting absorbing nutrients water mouth oesophagus stomach small intestines large intestines rectum chewing mixing saliva oesophagus transports undigested waste stored excretion anus teeth incisors canines premolars molars premolars chewing grinding Carnivores</p>	<p>core knowledge Questions can help us find out about the world and can be answered using scientific enquiry.</p>	<p>Y4 skill 1 Ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them.</p>
		<p>core knowledge Scientific enquiries can be set up and carried out by following or planning a method. A prediction is a statement about what might happen in an investigation, based on some prior knowledge or understanding. A fair test is one in which only one variable is changed and all others remain constant.</p>	<p>Y4 skill 1 Begin to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately.</p> <p>Y4 skill 1 Take accurate measurements in standard units, using a range of equipment.</p>
		<p>core knowledge Equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours), thermometers (°C), and metre sticks, rulers or trundle wheels (millimetres, centimetres, metres).</p> <p>core knowledge An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time.</p>	<p>Y4 skill 1 Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.</p>
		<p>core knowledge Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams.</p>	<p>Y4 skill 1 Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).</p>

<p>take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings. Describe the simple functions of the basic</p>	<p>Herbivores omnivores</p>	<p>core knowledge Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams.</p>	<p>Y4 skill 1 Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).</p>
		<p>core knowledge Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected.</p>	<p>Y4 skill 1 Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions.</p>
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		<p>core knowledge Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected.</p>	<p>Y4 skill 1 Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions.</p>
		<p>core knowledge The digestive system is responsible for digesting food and absorbing nutrients and water. The main parts of the digestive system are the mouth, oesophagus, stomach, small intestines, large intestines and rectum. The mouth starts digestion by chewing food and mixing it with saliva. The oesophagus transports the chewed food to the stomach, where it mixes with stomach acid and gets broken down into smaller pieces. In the small intestine, nutrients from the food are absorbed by the body. In the large intestine, water is absorbed by the body. The remaining undigested waste is stored in the rectum before excretion through the anus.</p>	<p>Y4 skill 1 Describe the purpose of the digestive system, its main parts and each of their functions.</p>

<p>parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey. Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.</p> <p>13 Programmes of study, 14 skills and 10 knowledge statements</p>		<p>core knowledge There are four different types of teeth: incisors, canines, premolars and molars. Incisors are used for cutting. Canines are used for tearing. Premolars and molars are used for grinding and chewing. Carnivores, herbivores and omnivores have characteristic types of teeth. Herbivores have many large molars for grinding plant material. Carnivores have large canines for killing their prey and tearing meat.</p>	<p>Y4 skill 1 Identify the four different types of teeth in humans and other animals, and describe their functions.</p>
		<p>core knowledge Food chains show what animals eat within a habitat and how energy is passed on over time. All food chains start with a producer, which is typically a green plant. The producer is eaten by a primary consumer (prey), which is eaten by a secondary consumer (prey), which is eaten by a tertiary consumer. All food chains end with a top or apex predator. Changes within a food chain, such as an abundance or lack of one food type, have an impact on the entire food chain.</p>	<p>Y4 skill 1 Construct and interpret a variety of food chains and webs to show interdependence and how energy is passed on over time.</p>
		<p>core knowledge Regular teeth brushing, limiting sugary foods and visiting the dentist are important for good oral hygiene.</p>	<p>Y4 skill 1 Describe what damages teeth and how to look after them.</p>
<p>Year 4 Sound – Science Focus</p> <p>Key Concepts: Gather & record data Investigation Measurement Observation Pattern seeking Phenomena Questioning Report and conclude</p> <p>Ask relevant questions and using different types of scientific enquiries to answer them.</p> <p>Set up simple practical enquiries, comparative and fair tests.</p>	<p>Vibrations travel sound wave distance fainter absorbs volume pitch high low tighter thicker thinner note</p>	<p>core knowledge Questions can help us find out about the world and can be answered using scientific enquiry.</p>	<p>Y4 skill 1 Ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them.</p>
		<p>core knowledge Scientific enquiries can be set up and carried out by following or planning a method. A prediction is a statement about what might happen in an investigation, based on some prior knowledge or understanding. A fair test is one in which only one variable is changed and all others remain constant.</p>	<p>Y4 skill 1 Begin to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately.</p>
		<p>core knowledge Equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours), thermometers (°C), and metre sticks, rulers or trundle wheels (millimetres, centimetres, metres).</p>	<p>Y4 skill 1 Take accurate measurements in standard units, using a range of equipment.</p>

<p>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p>	<p>core knowledge An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time.</p>	<p>Y4 skill 1 Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.</p>
	<p>core knowledge Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams.</p>	<p>Y4 skill 1 Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).</p>
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<p>Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p> <p>14 Programmes of study, 15 skills and 10 knowledge statements</p>	<p>core knowledge Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected.</p>	<p>Y4 skill 1 Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions.</p>
	<p>core knowledge When an instrument is played, the air around or inside it vibrates. These vibrations travel as a sound wave. Sound waves travel through a medium, such as air or water, to the ear.</p>	<p>Y4 skill 1 Explain how sounds are made and heard using diagrams, models, written methods or verbally.</p>
	<p>core knowledge When an instrument is played, the air around or inside it vibrates. These vibrations travel as a sound wave. Sound waves travel through a medium, such as air or water, to the ear.</p>	<p>Y4 skill 1 Explain how sounds are made and heard using diagrams, models, written methods or verbally.</p>
	<p>core knowledge Pitch is how high or low a sound is. Parts of an instrument that are shorter, tighter or thinner produce high-pitched sounds. Parts of an instrument that are longer, looser or fatter produce low-pitched sounds.</p>	<p>Y4 skill 1 Compare and find patterns in the pitch of a sound, using a range of equipment, such as musical instruments.</p>
	<p>core knowledge Volume is how loud or quiet a sound is. The harder an instrument is hit, plucked or blown, the stronger the vibrations and the louder the sound.</p>	<p>Y4 skill 1 Compare and find patterns in the volume of a sound, using a range of equipment, such as musical instruments.</p>
	<p>core knowledge Sounds are louder closer to the sound source and fainter as the distance from the sound source increases.</p>	<p>Y4 skill 1 Compare how the volume of a sound changes at different distances from the source.</p>

<p>Year 4 Misty Mountain, Winding River – Geography focus</p> <p>Key Concepts: Earth Habitats</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>2 Programmes of study, 2 skills and 2 knowledge statements</p>	<p>Change of states cloud collection condensation condense cool evaporate evaporation gas hail heat liquid precipitation rain sleet snow solid temperature water cycle water vapour change human influence impact natural influence negative positive risk</p>	<p>core knowledge Humans can affect habitats in negative ways, such as littering, pollution and land development, or positive ways, such as garden ponds, bird boxes and wildflower areas.</p> <p>core knowledge The water cycle has four stages: evaporation, condensation, precipitation and collection. Water in lakes, rivers and streams is warmed by the Sun, causing the water to evaporate and rise into the air as water vapour. As the water vapour rises, it cools and condenses to form water droplets in clouds. The clouds become full of water until the water falls back to the ground as precipitation (rain, hail, snow and ice). The fallen water collects back in lakes, rivers and streams. Evaporation and condensation are caused by temperature changes.</p>	<p>Y4 skill 1 Describe how environments can change due to human and natural influences and the impact this can have on living things.</p> <p>Y4 skill 1 Describe the water cycle using words or diagrams and explain the part played by evaporation and condensation.</p>
<p>Year 4 States of Matter – science focus</p> <p>Key Concepts: Changes Gather & record data Identify & classify Investigation Measurement Observation Report and conclude</p>	<p>Compare conclusion control equipment factor interval investigation measurement method observe prediction question results variable</p>	<p>core knowledge Scientific enquiries can be set up and carried out by following or planning a method. A prediction is a statement about what might happen in an investigation, based on some prior knowledge or understanding. A fair test is one in which only one variable is changed and all others remain constant.</p> <p>specific knowledge Factors that affect the rate of ice melting include the size of the ice, the temperature, agitation by stirring and changing its composition.</p>	<p>Y4 skill 2 Begin to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately.</p>

<p>Set up simple practical enquiries, comparative and fair tests.</p> <p>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> <p>Compare and group materials together, according to whether they are solids, liquids or gases.</p>	<p>describe diagram results chart data line graph record research table variable degrees Celsius equipment liquid thermometer measurement temperature thermometer unit compare observe compress foam gel liquid material matter particle powder property solid-state of matter volume boiling point condensation condense condensing point cool evaporate evaporation freeze freezing freezing points heat melt melting</p>	<p>core knowledge Equipment is used to take measurements in standard units. Examples include data loggers plus sensors, timers (seconds, minutes and hours), thermometers (°C), and metre sticks, rulers or trundle wheels (millimetres, centimetres, metres).</p>	<p>Y4 skill 1 Take accurate measurements in standard units, using a range of equipment</p>
		<p>core knowledge an observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time.</p>	<p>Y4 skill 1 Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.</p>
		<p>core knowledge Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams.</p> <p>specific knowledge A line graph is a way of displaying data that shows a relationship between two variables. Many line graphs show changes over time. A flat line means that there was no change over time. A line with a shallow curve means there was a gradual change over time. A line with a steep curve means there was a quick change over time.</p>	<p>Y4 skill 2 Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).</p>
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		<p>core knowledge Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected.</p> <p>specific knowledge Particles make up all materials. The particles are close together and arranged in a regular pattern in a solid. In a liquid, the particles are close together but arranged randomly. In a gas, the particles are randomly arranged and far apart.</p>	<p>Y4 skill 2 Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions.</p>

<p>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p> <p>10 Programmes of study, 11 skills and 13 knowledge statements</p>	<p>melting point process reversible water vapour</p>	<p>core knowledge Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected.</p> <p>specific knowledge Particles make up all materials. The particles are close together and arranged in a regular pattern in a solid. In a liquid, the particles are close together but arranged randomly. In a gas, the particles are randomly arranged and far apart.</p>	<p>Y4 skill 2 Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions.</p>
		<p>core knowledge An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time.</p>	<p>Y4 skill 1 Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.</p>
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		<p>core knowledge Materials can be grouped according to whether they are solids, liquids or gases. Solids stay in one place and can be held. Some solids can be squashed, bent, twisted and stretched. Examples of solids include wood, metal, plastic and clay. Liquids move around (flow) easily and are difficult to hold. Liquids take the shape of the container in which they are held. Examples of liquids include water, juice and milk. Gases spread out to fill the available space and cannot be held. Examples of gases include oxygen, helium and carbon dioxide. Air is a mixture of gases.</p>	<p>Y4 skill 1 Group and sort materials into solids, liquids or gases.</p>

		<p>core knowledge Heating or cooling materials can bring about a change of state. This change of state can be reversible or irreversible. The temperature at which materials change state varies depending on the material. Water changes state from solid (ice) ⇌ liquid (water) at 0°C and from liquid (water) ⇌ gas (water vapour) at 100°C. The process of changing from a solid to liquid is called melting. The reverse process of changing from a liquid to a solid is called freezing. The process of changing from a liquid to a gas is called evaporation. The reverse process of changing from a gas to a liquid is called condensation.</p> <p>specific knowledge The temperature when a solid begins to melt is called its melting point. The temperature when a liquid begins to freeze is called its freezing point. The temperature when a liquid begins to evaporate is called its boiling point. The temperature when a gas begins to condense is called its condensing point.</p> <p>specific knowledge Temperature is a measure of how hot or cold something is. It is measured in degrees using an instrument called a thermometer. In the United Kingdom, temperature is measured in degrees Celsius.</p> <p>specific knowledge Different materials have different melting and boiling points. A material's state on Earth depends on Earth's temperature.</p>	<p>Y4 skill 4 Observe and explain that some materials change state when they are heated or cooled and measure or research the temperature in degrees Celsius (°C) at which materials change state.</p>
<p>Year 4 Grouping and Classifying – science focus</p> <p>Key Concepts:</p> <p>Gather & record data Identify & classify Observation Questioning</p> <p>Ask relevant questions and using different types of scientific</p>	<p>Property Question Research Sort Diagram Observe Measure Table Chart Compare Graph data</p>	<p>core knowledge Questions can help us find out about the world and can be answered using scientific enquiry.</p> <p>core knowledge An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time.</p> <p>specific knowledge Classification is the arrangement of living and non-living things into groups or categories. Single-stage classification involves separating a large group of objects into smaller groups based on a single property. Multi-stage classification involves sorting groups into subgroups repeatedly until all the objects in one group are the same.</p>	<p>Y4 skill 1 Ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them.</p> <p>Y4 skill 1 Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.</p>

<p>enquiries to answer them.</p> <p>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> <p>Explore and use classification keys to help group, identify and name a variety of living</p>		<p>Serial ordering involves sorting objects into an order based on a property.</p>	
		<p>core knowledge Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams.</p> <p>specific knowledge Classification keys are created by devising a set of yes or no questions that separate a group into two groups until objects end up on their own. Classification keys are also called dichotomous keys or branching trees.</p>	<p>Y4 skill 2 Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).</p>
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		<p>core knowledge Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected.</p> <p>specific knowledge All vertebrates are covered with skin, feathers, scales, fur or hair. They give birth to live young or lay eggs. They can be cold blooded or warm blooded.</p>	<p>Y4 skill 2 Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions</p>
		<p>core knowledge Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected.</p>	<p>Y4 skill 2 Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions.</p>

<p>things in their local and wider environment.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p> <p>Recognise that living things can be grouped in a variety of ways.</p> <p>10 Programmes of study, 10 skills and 11 knowledge statements</p>		<p>specific knowledge All vertebrates are covered with skin, feathers, scales, fur or hair. They give birth to live young or lay eggs. They can be cold blooded or warm blooded.</p>	
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		<p>core knowledge Scientists classify living things according to shared characteristics. Animals can be divided into six main groups: mammals, reptiles, amphibians, birds, fish and invertebrates. These groups can be further subdivided. Classification keys are scientific tools that aid the identification of living things.</p> <p>specific knowledge The animal kingdom is divided into vertebrates and invertebrates. A vertebrate is an animal with a backbone. An invertebrate is an animal without a backbone. All vertebrates are covered with skin, feathers, scales, fur or hair. Invertebrates usually have soft bodies or a hard-outer shell or covering called an exoskeleton.</p> <p>specific knowledge Invertebrates usually have soft bodies or a hard-outer shell or covering called an exoskeleton. There</p>	<p>Y4 skill 4 Compare, sort and group living things from a range of environments, in a variety of ways, based on observable features and behaviour.</p>

		<p>are six main groups of invertebrates: annelids, molluscs, arachnids, crustaceans, insects and myriapods.</p> <p>specific knowledge The plant kingdom is divided into vascular and non-vascular plants. There are two main types of vascular plants: plants with seeds and plants with spores. There are two groups of plants with seeds: flowering plants and cone-bearing plants.</p>	
		<p>core knowledge Scientists classify living things according to shared characteristics. Animals can be divided into six main groups: mammals, reptiles, amphibians, birds, fish and invertebrates. These groups can be further subdivided. Classification keys are scientific tools that aid the identification of living things.</p> <p>specific knowledge The animal kingdom is divided into vertebrates and invertebrates. A vertebrate is an animal with a backbone. An invertebrate is an animal without a backbone. All vertebrates are covered with skin, feathers, scales, fur or hair. Invertebrates usually have soft bodies or a hard-outer shell or covering called an exoskeleton.</p> <p>specific knowledge Invertebrates usually have soft bodies or a hard-outer shell or covering called an exoskeleton. There are six main groups of invertebrates: annelids, molluscs, arachnids, crustaceans, insects and myriapods.</p> <p>specific knowledge The plant kingdom is divided into vascular and non-vascular plants. There are two main types of vascular plants: plants with seeds and plants with spores. There are two groups of plants with seeds: flowering plants and cone-bearing plants.</p>	<p>Y4 skill 4 Compare, sort and group living things from a range of environments, in a variety of ways, based on observable features and behaviour.</p>

<p>Year 4 Electrical Circuits</p> <p>Key Concepts: Forces Gather & record data Investigation Modelling Observation Physical things Properties and uses Questioning Report and conclude Staying safe</p> <p>15 Programmes of study, 15 skills and 14 knowledge statements</p> <p>Ask relevant questions and using different types of scientific enquiries to answer them.</p> <p>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> <p>Set up simple practical enquiries, comparative and fair tests.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings,</p>	<p>Light bulb question research cartridge fuse earth wire electric shock electrical safety flexible cable insulator 3 pin plug appliances battery cell electricity mains electricity portable device power line power station pylon rechargeable socket source wire brass conductive conductor copper core earth wire electrical conductivity filament gold graphite insulator livewire material metal neutral wire nonconductive non-metal plastic property resistant rubber tungsten</p>	<p>core knowledge Questions can help us find out about the world and can be answered using scientific enquiry.</p>	<p>Y4 skill 1 Ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them.</p>
		<p>core knowledge Scientific enquiries can be set up and carried out by following or planning a method. A prediction is a statement about what might happen in an investigation, based on some prior knowledge or understanding. A fair test is one in which only one variable is changed and all others remain constant.</p>	<p>Y4 skill 1 Begin to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately.</p>
		<p>core knowledge An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time.</p>	<p>Y4 skill 1 Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.</p>
		<p>core knowledge Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams.</p>	<p>Y4 skill 1 Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).</p>
		<p>core knowledge Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams.</p>	<p>Y4 skill 1 Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs).</p>
		<p>core knowledge Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected.</p>	<p>Y4 skill 1 Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions.</p>
		<p>core knowledge Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected.</p>	<p>Y4 skill 1 Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions.</p>
		<p>core knowledge An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time.</p>	<p>Y4 skill 1 Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.</p>

<p>labelled diagrams, keys, bar charts, and tables.</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Use straightforward scientific evidence to answer questions or to support their findings.</p> <p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p>	<p>wood LED battery battery holder buzzer cell circuit complete circuit component crocodile clip electric current incomplete circuit emitting diode motor series circuit switch wire</p>	<p>core knowledge Results are information, such as data or observations, that have been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected.</p>	<p>Y4 skill 1 Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw simple conclusions and identify next steps, improvements and further questions.</p>
		<p>core knowledge Electricity is a type of energy. It is used to power many everyday items, such as kettles, computers and televisions. Electricity can also come from batteries. Batteries eventually run out of power and need to be recycled or recharged. Batteries power devices that can be carried around, such as mobile phones and torches.</p> <p>specific knowledge Electricity is essential to our daily lives and makes peoples' lives easier. Electricity comes from two sources, mains and batteries.</p>	<p>Y4 skill 1 Compare common household equipment and appliances that are and are not powered by electricity.</p>
		<p>core knowledge Electrical components include cells, wires, lamps, motors, switches and buzzers. Switches open and close a circuit and provide control.</p> <p>specific knowledge A circuit is a collection of components connected by wires through which an electric current can flow. A circuit must be a complete loop to work.</p> <p>specific knowledge 2 A series circuit has a single path for an electric current to flow through.</p>	<p>Y4 skill 4 Construct operational simple series circuits using a range of components and switches for control.</p>
		<p>core knowledge A series circuit is a simple loop with only one path for the electricity to flow. A series circuit must be a complete loop to work and have a source of power from a battery or cell.</p>	<p>Y4 skill 1 Predict and describe whether a circuit will work based on whether or not the circuit is a complete loop and has a battery or cell.</p>
		<p>core knowledge Electrical components include cells, wires, lamps, motors, switches and buzzers. Switches open and close a circuit and provide control.</p> <p>specific knowledge A circuit is a collection of components connected by wires through which an electric current can flow. A circuit must be a complete loop to work.</p>	<p>Y4 skill 4 Construct operational simple series circuits using a range of components and switches for control.</p>

<p>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors</p> <p>Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.</p>	<p>specific knowledge 2 A series circuit has a single path for an electric current to flow through.</p>	
	<p>core knowledge Electrical conductors allow electricity to flow through them, whereas insulators do not. Common electrical conductors are metals. Common insulators include wood, glass, plastic and rubber.</p> <p>specific knowledge Plugs and cabling are made from a combination of conductive and insulating materials. Insulating plastic covers conductive metals to make plugs safe to use.</p>	<p>Y4 skill 2 Describe materials as electrical conductors or insulators.</p>
	<p>core knowledge Working with electrical circuits can be dangerous. Precautions include not touching electrical components with wet hands and not putting batteries in mouths.</p>	<p>Y4 skill 1 Explain the precautions needed for working safely with electrical circuits.</p>

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