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	Autumn 1		Autumn 2	
	Nursery How Many Colours In A Rainbow?		Nursery Why Do Leaves Go Crispy?	
Nursery topics are shorter than the others and don't follow the termly plan quite as set out here. EYFS **All E. L. Goals are to be considered in conjunction with the prime areas of learning.**	**The World** **E. L. Goal 100** Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	• **22-36 months** Notices detailed features of objects in their environment. • **30-50 months** Can talk about some of the things they have observed such as plants, animals, natural and found objects. • **40-60+ months** Looks closely at similarities, differences, patterns and change.	**The World** **E. L. Goal 62** Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	• **22-36 months** **Nursery** Notices detailed features of objects in their environment. • **30-50 months** **Nursery** Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. • **30-50 months** **Nursery** Can talk about some of the things they have observed such as plants, animals, natural and found objects. • **30-50 months** **Nursery** Shows care and concern for living things and the environment. • **40-60+ months** **Nursery** Looks closely at similarities, differences, patterns and change.
	Reception Do You Want To Be My Friend?		Reception Will You Read Me A Story?	
	Understanding **E.L. Goal 40** Children follow instructions involving several ideas or actions. They answer 'how' and 'why' questions about their experiences and in response to stories or events.	• **30- 50 months** **Reception** Beginning to understand 'why' and 'how' questions. • **40-60+ months** **Reception** Listens and responds to ideas expressed	**The World** **E. L. Goal 145** Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and	• **30-50 months** Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.

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		by others in conversation or discussion. • **ELG skills** **Reception** Answer 'how' questions about their experiences and in response to stories.	how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	• **30-50 months** Can talk about some of the things they have observed such as plants, animals, natural and found objects. • **40-60+ months** Looks closely at similarities, differences, patterns and change. • **ELG skills** Talk about features of their immediate environment. • **Exceeding ELG** Know that the environment and living things are influenced by human activity.
Year 1	Superheroes (Linked to Collins Connect unit – Everyday Materials)		Bright Lights, Big City (Linked to Collins Connect unit – Everyday Materials)	
	Skills • Observe objects, materials, living things and changes over time, sorting and grouping them based on their features. • Talk about what they have done and say, with help, what they think they have found out. • Draw and label the main parts of the human body and say which body part is associated with which sense. • Identify and name what an object is made from, including wood, plastic, glass, metal, water and rock. • Compare and group materials in a variety of	**Knowledge** • Objects, materials and living things can be looked at and compared. • The results are information that has been found out from an investigation. • The basic body parts are the head, arms, legs, nose, eyes, ears, mouth, hands and feet. The five senses are hearing, sight, smell, taste and touch. Ears are used for hearing, eyes are used to see, the nose is used to smell, the tongue is used to taste and skin gives the sense of touch. • A material is what an object is made from. Everyday	**Skills** • Talk about what they have done and say, with help, what they think they have found out. • Identify and name what an object is made from, including wood, plastic, glass, metal, water and rock.	**Knowledge** • The results are information that has been found out from an investigation. • A material is what an object is made from. Everyday materials include wood, plastic, glass, metal, water, rock, brick, paper and fabric.

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	ways, such as based on their physical properties; being natural or man-made and being recyclable or non-recyclable.	materials include wood, plastic, glass, metal, water, rock, brick, paper and fabric. • Materials can be grouped according to their properties.		
Year 2	Muck, Mess and Mixtures (Linked to Collins Connect unit: Materials- Good Choices)		Street Detectives (Linked to Collins Connect unit: Materials – Shaping Up)	
	Skills • Use simple equipment to measure and make observations. • Follow a set of instructions to perform a range of simple tests, making simple predictions for what might happen and suggesting ways to answer their questions. • Begin to notice patterns and relationships in their data and explain what they have done and found out using simple scientific language. • Observe what happens when a range of everyday materials, including foods, are heated and cooled, sorting and grouping them based on their observations. • Compare the suitability of a range of everyday materials for particular uses. • Describe how some objects and materials can be changed and how these changes can be desirable or undesirable.	Knowledge • Simple equipment is used to take measurements and observations. Examples include timers, hand lenses, metre sticks and trundle wheels. • Tests can be carried out by following a set of instructions. A prediction is a guess for what might happen in an investigation. • The results are information that has been found out from an investigation and can be used to answer a question. • Some foods, such as ice and chocolate, melt when heated, but then harden (solidify or freeze) when cooled. • A material's physical properties make it suitable for particular purposes, such as glass for windows and brick for building walls. Many materials are used for more than one purpose, such as metal for cutlery and cars. • Some objects and materials can be changed by	Skills • Use simple equipment to measure and make observations. • Use a range of methods (tables, charts, diagrams and Venn diagrams) to gather and record simple data with some accuracy. • Identify and name a variety of plants and animals in a range of habitats and microhabitats. • Compare the suitability of a range of everyday materials for particular uses.	Knowledge • Simple equipment is used to take measurements and observations. Examples include timers, hand lenses, metre sticks and trundle wheels. • Data can be recorded and displayed in different ways, including tables, charts, pictograms and drawings. • A habitat is a place where a living thing lives. A microhabitat is a very small habitat. • A material's physical properties make it suitable for particular purposes, such as glass for windows and brick for building walls. Many materials are used for more than one purpose, such as metal for cutlery and cars.

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		squashing, bending, twisting, stretching, heating, cooling, mixing and being left to decay.		
Year 3	Mighty Metals (Linked to Collins Connect unit –The Power of Forces)		Gods and Mortals (Linked to Collins Connect unit – A Changing World)	
	Skills • Ask questions about the world around them and explain that they can be answered in different ways. • Take measurements in standard units, using a range of simple equipment. • Set up and carry out some simple comparative and fair tests, making predictions for what might happen. • Make increasingly careful observations, identifying similarities, differences and changes, and making simple connections. • Use suitable vocabulary to talk or write about what they have done, what the purpose was and, with help, draw a simple conclusion based on evidence collected, beginning to identify next steps or improvements. • Gather and record findings in a variety of ways (diagrams, tables, charts and graphs) with increasing accuracy. • Compare and group rocks based on their appearance, properties or uses.	Knowledge • Questions can help us find out about the world and can be answered in different ways. • 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 (millimetres, centimetres and metres). Taking repeat readings can increase the accuracy of the measurement. • Tests can be set up and carried out by following or planning a set of instructions. A prediction is a best guess for what might happen in an investigation based on some prior knowledge. • An observation involves looking closely at objects, materials and living things, which can be compared and grouped according to their features. • Results are information that has been found out from an investigation. A conclusion is	Taught entirely from Collins Connect Objectives	

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	• Compare and group materials based on their magnetic properties. • Investigate and compare a range of magnets (bar, horseshoe and floating) and explain that magnets have two poles (north and south) and that opposite poles attract each other, while like poles repel each other. • Compare how objects move over surfaces made from different materials. • Explain that an object will not move unless a push or pull (force) is applied, describing forces in action and whether the force requires direct contact or whether the force can act at a distance (magnetic force). • Make working models with simple mechanisms or electrical circuits.	the answer to a question that uses the evidence collected. • Data can be recorded and displayed in different ways, including tables, charts, graphs and labelled diagrams. Data can be used to provide evidence to answer questions. • There are three different rock types: sedimentary, igneous and metamorphic. Sedimentary rocks form from mud, sand and particles that have been squashed together over a long time to form rock. Examples include sandstone and limestone. Igneous rocks are made from cooled magma or lava. They usually contain visible crystals. Examples include pumice and granite. Metamorphic rocks are formed when existing rocks are heated by the magma under the Earth's crust or squashed by the movement of the Earth's tectonic plates. They are usually very hard. Examples include slate and marble. • Some materials have magnetic properties. Magnetic materials are attracted to magnets. All magnetic materials are metals but not all metals are magnetic. The metal iron is magnetic.		

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		• Magnets have two poles (north and south). Opposite poles (north and south) attract each other, while like poles (north and north, or south and south) repel each other. • Friction is a force between two surfaces as they move over each other. Friction slows down a moving object. Smooth surfaces usually generate less friction than rough surfaces. • An object will not move unless a pushing or pulling force is applied. Some forces require direct contact, whereas other forces can act at a distance, such as magnetic force.		
Year 4	Burps, Bottoms and Bile (Linked to Collins Connect unit – Where Does All That Food Go?)		Traders and Raiders (Linked to Collins Connect unit –Who Am I?)	
	Skills • Begin to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately. • Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections.	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. • An observation involves looking closely at objects, materials and living things.	Taught entirely from Collins Connect Objectives	

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	• 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. • Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs). • Identify the four different types of teeth in humans and other animals, and describe their functions. • Describe the purpose of the digestive system, its main parts and each of their functions. • Describe what damages teeth and how to look after them.	Observations can be made regularly to identify changes over time. • Results are information, such as data or observations, that has been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected. • Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams. • 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 tooth. Herbivores have many large molars for grinding plant material. Carnivores have large canines for killing and tearing meat. • 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		

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		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. • Regular teeth brushing, limiting sugary foods and visiting the dentist are important for good oral hygiene.		
Year 5	Pharoahs (Linked To Collins Connect Unit – Everyday Materials)		Stargazers (Linked to Collins Connect unit – Earth and Beyond)	
	Taught entirely from Collins Connect Objectives		Skills • Ask a wide range of relevant scientific questions that broaden their understanding of the world around them and identify how they can answer them. • Take increasingly accurate measurements, in standard units, using a range of chosen equipment. • Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based	Knowledge • Questions can help us find out about the world and can be answered using a range of scientific enquiries. • Specialised equipment is used to take measurements in standard units. Examples include data loggers plus sensors, such as light (lux), sound (dB) and temperature (°C); timers (seconds, minutes and hours); thermometers (°C), and measuring tapes (millimetres, centimetres, metres).

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			on prior knowledge and understanding. • Within a group, decide which observations to make, when and for how long, and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect. • Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected, identify improvements, further questions and predictions. • Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification keys, tables, graphs and models). • Describe, using evidence from comparative or fair tests, why a material has been chosen for a specific use. • Use the idea of Earth's rotation to explain day and night, and the Sun's apparent movement across the sky.	• A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding. • An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time. • The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected. • Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams. • A material's properties dictate what it can be used for. For example, cooking pans are made from metal, which is a good thermal conductor,

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			• Describe or model the movement of the planets in our Solar System, including Earth, relative to the Sun. • Describe the Sun, Earth and Moon as approximately spherical bodies and use this knowledge to understand the phases of the Moon and eclipses. Explain that objects fall to Earth due to the force of gravity.	allowing heat to quickly transfer from the hob to the contents of the pan. • As Earth orbits the Sun, it also spins on its axis. It takes Earth a day (24 hours) to complete a full spin. During the day, the Sun appears to move through the sky. However, this is due to the Earth rotating and not the Sun moving. Earth rotates to the east or, if viewed from above the North Pole, it rotates anti-clockwise, which means the Sun rises in the east and sets in the west. As Earth rotates, different parts of it face the Sun, which brings what we call daytime. The part facing away is in shadow, which is night time. • The Solar System is made up of the Sun and everything that orbits around it. There are eight planets in our Solar System: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Earth orbits around the Sun and a year (365 days) is the length of time it takes for Earth to complete a full orbit.

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				• The Sun, Earth, Moon and other planets and stars are roughly spherical. All planets are spherical because their mass is so large that they have their own force of gravity. This force of gravity pulls all of a planet's material towards its centre, which compresses it into the most compact shape – a sphere. Gravity is a force of attraction. Anything with a mass can exert a gravitational pull on another object. The Earth's large mass exerts a gravitational pull on all objects on Earth, making dropped objects fall to the ground.
Year 6	Bloodheart (Linked to Collins Connect unit –Body Pump)		A Child's War (Linked to Collins Connect unit – Body Health)	
	Skills • Ask and answer deeper and broader scientific questions about the local and wider world that build on and extend their own and others' experiences and knowledge. • Take accurate, precise and repeated measurements in standard units, using a range of chosen equipment. • Plan and carry out a range of enquiries, including writing methods, identifying and controlling variables, deciding on equipment and	Knowledge • Questions can help us find out about the world and can be answered using a range of scientific enquiries, including fair tests, research and observation. • Specialised equipment is used to take accurate measurements in standard units. Examples include data loggers plus sensors, such as light (lux), sound (dB) and temperature (°C); timers (seconds, minutes and hours); thermometers (°C),	Taught entirely from Collins Connect Objectives	

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	data to collect and making predictions based on prior knowledge and understanding. • Independently, decide which observations to make, when and for how long and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect. • Report on and validate their findings, answer questions and justify their methods, opinions and conclusions, and use their results to suggest improvements to their methodology, separate facts from opinions, pose further questions and make predictions for what they might observe. • Choose an appropriate approach to record accurate results, including scientific diagrams, labels, timelines, classification keys, tables, models and graphs (bar, line and scatter), linking to mathematical knowledge. • Explain that the circulatory system in animals transports oxygen, water and nutrients around the body. • Name and describe the purpose of the circulatory system and the functions of	and measuring tapes (millimetres, centimetres, metres). • A method is a set of clear instructions for how to carry out a scientific investigation, including what equipment to use and observations to make. A variable is something that can be changed during a fair test. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding. • An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time, identify processes and make comparisons. • The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected using correct, precise terminology. • Data can be recorded and displayed in different ways, including tables, bar and line charts, scatter graphs, classification keys and labelled diagrams.		

	the heart, blood vessels and blood. • Explain the impact of positive and negative lifestyle choices on their body.	• The role of the circulatory system is to transport oxygen, water and nutrients around the body. They are transported in blood and delivered to where they are needed. • The circulatory system includes the heart, blood vessels and blood. The heart pumps blood through the blood vessels and around the body. There are three types of blood vessel: arteries, veins and capillaries. They each have a different-sized hole (lumen) and walls. The blood carries gases (oxygen and carbon dioxide), water and nutrients to where they are needed. The red blood cells carry oxygen and carbon dioxide around the body. The blood also contains white blood cells, which protect the body from infection. • Lifestyle choices can have a positive (exercise and eating healthily) or negative (drugs, smoking and alcohol) impact on the body. •		

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	Spring 1		Spring 2	
	Nursery Are Eggs Alive?		Nursery Why Can't I Have Chocolate For Breakfast?	
EYFS **All E. L. Goals are to be considered in conjunction with the prime areas of learning.**	**The World** **E. L. Goal 62** Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	• **22-36 months Nursery** Notices detailed features of objects in their environment. • **30-50 months Nursery** Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. • **30-50 months Nursery** • Can talk about some of the things they have observed such as plants, animals, natural and found objects. • **30-50 months Nursery** Shows care and concern for living things and the environment. • **40-60+ months Nursery** Looks closely at similarities, differences, patterns and change.	**The World** **E. L. Goal 62** Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	• **22-36 months Nursery** Notices detailed features of objects in their environment. • **30-50 months Nursery** Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. • **30-50 months Nursery** • Can talk about some of the things they have observed such as plants, animals, natural and found objects. • **30-50 months Nursery** Shows care and concern for living things and the environment. • **40-60+ months Nursery** Looks closely at similarities, differences, patterns and change.

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	Reception What Happens When I Fall Asleep?		Reception Are Carrots Orange?	
	The World **E. L. Goal 145** Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	• **30-50 months** Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. • **40-60+ months** Looks closely at similarities, differences, patterns and change. • **ELG skills** Talk about features of their immediate environment. • **Exceeding ELG** Know that the environment and living things are influenced by human activity.	**The World** **E. L. Goal 145** Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	• **30-50 months** Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. • **40-60+ months** Looks closely at similarities, differences, patterns and change. • **ELG skills** Talk about features of their immediate environment. • **Exceeding ELG** Know that the environment and living things are influenced by human activity.
Year 1	Dinosaur Planet (Linked to Collins Connect unit – Plant Detectives)		Paws, Claws and Whiskers (Linked to Collins Collect unit – Looking At Animals)	
	Skills • With support, use simple equipment to measure and make observations. • Talk about what they have done and say, with help, what they think they have found out.	**Knowledge** • Simple equipment is used to take measurements and observations. Examples include metre sticks, measuring tapes, egg timers and hand lenses.	**Skills** • With support, follow instructions to perform simple tests and begin to talk about what they might do or what might happen. • Observe objects, materials, living things and changes over time,	**Knowledge** • Simple tests can be carried out by following a set of instructions. • Objects, materials and living things can be looked at and compared. • The results are information that has been

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	• Identify, compare, group and sort a variety of common plants, including deciduous and evergreen trees, based on observable features. • Identify, compare, group and sort a variety of common animals, including fish, amphibians, reptiles, birds and mammals, based on observable features. • Label and describe the basic structure of a variety of common plants. Label and describe the basic structure of a variety of common animals. • Group and sort a variety of common animals based on the foods they eat. Describe, following observation, how plants and animals change over time.	• The results are information that has been found out from an investigation. • Plants are living things. Common plants include the daisy, daffodil and grass. Trees are large, woody plants and are either evergreen or deciduous. Trees that lose their leaves in the autumn are called deciduous trees. Examples include oak, beech and rowan. Trees that keep their leaves all year round are called evergreen trees. Examples include holly and pine. • Animals are living things. Animals can be sorted and grouped into six main groups: fish, amphibians, reptiles, birds, mammals and invertebrates. • Plants are living things. Common plants include the daisy, daffodil and grass. Trees are large, woody plants and are either evergreen or deciduous. Trees that lose their leaves in the autumn are called deciduous trees. Examples include oak, beech and rowan. Trees that keep their leaves all year round are called evergreen trees.	sorting and grouping them based on their features. • Talk about what they have done and say, with help, what they think they have found out. • With support, gather and record simple data in a range of ways (data tables, diagrams, Venn diagrams). • Identify, compare, group and sort a variety of common animals, including fish, amphibians, reptiles, birds and mammals, based on observable features. • Label and describe the basic structure of a variety of common animals. • Describe how to care for plants and animals, including pets. •	found out from an investigation. • Data can be recorded and displayed in different ways, including tables, pictograms and drawings. • Animals are living things. Animals can be sorted and grouped into six main groups: fish, amphibians, reptiles, birds, mammals and invertebrates. • Different animal groups have some common body parts, such as eyes and a mouth, and some different body parts, such as fins or wings. • Living things need to be cared for in order for them to survive. They need water, food, warmth and shelter.

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		Examples include holly and pine. • Animals are living things. Animals can be sorted and grouped into six main groups: fish, amphibians, reptiles, birds, mammals and invertebrates. • The basic plant parts include root, stem, leaf, flower, petal, fruit, seed and bulb. Trees have a woody stem called a trunk. • Different animal groups have some common body parts, such as eyes and a mouth, and some different body parts, such as fins or wings. • Carnivores eat other animals (meat), herbivores eat plants and omnivores eat other animals and plants. • All living things (plants and animals) change over time as they grow and mature.		

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Year 2	Beat Band Boogie (Linked to Collins Connect unit – Growing Up)		Towers, Tunnels and Turrets (Linked to Collins Connect unit –Take Care)	
	Skills	Knowledge	Skills	Knowledge
	• Ask and answer scientific questions about the world around them. • Follow a set of instructions to perform a range of simple tests, making simple predictions for what might happen and suggesting ways to answer their questions. • Begin to notice patterns and relationships in their data and explain what they have done and found out using simple scientific language. • Use a range of methods (tables, charts, diagrams and Venn diagrams) to gather and record simple data with some accuracy. • Compare the volume and pitch of sounds made by instruments, their voices or other objects. • Explain in simple terms how sounds are made.	• Questions can help us find out about the world. • Tests can be carried out by following a set of instructions. A prediction is a guess at what might happen in an investigation. • The results are information that has been found out from an investigation and can be used to answer a question. • Data can be recorded and displayed in different ways, including tables, charts, pictograms and drawings. • Volume is how loud or quiet a sound is. Pitch is how high or low a sound is. • When an instrument is played by plucking, striking or blowing, the air around or inside it vibrates. These vibrations travel as a sound wave to the ear.	• Use simple equipment to measure and make observations. • Follow a set of instructions to perform a range of simple tests, making simple predictions for what might happen and suggesting ways to answer their questions. • Observe objects, materials, living things and changes over time, sorting and grouping them based on their features and explaining their reasoning. • Begin to notice patterns and relationships in their data and explain what they have done and found out using simple scientific language. • Use a range of methods (tables, charts, diagrams and Venn diagrams) to gather and record simple data with some accuracy. • Identify and name a variety of plants and	• Simple equipment is used to take measurements and observations. Examples include timers, hand lenses, metre sticks and trundle wheels. • Tests can be carried out by following a set of instructions. A prediction is a guess for what might happen in an investigation. • Objects, materials and living things can be looked at, compared and grouped according to their features. • The results are information that has been found out from an investigation and can be used to answer a question. • Data can be recorded and displayed in different ways, including tables, charts, pictograms and drawings. • A habitat is a place where a living thing lives. A

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			animals in a range of habitats and microhabitats. • Describe the basic life cycles of some familiar animals (egg, caterpillar, pupa, butterfly; egg, chick, chicken; spawn, tadpole, froglet, frog).	microhabitat is a very small habitat. • Animals have offspring that grow into adults. Different animals have different stages of growth or life cycles. •
Year 3	Heroes and Villains (Linked to Collins Connect unit – Amazing Bodies)		Tribal Tales (Linked to Collins Connect unit –How Does Your Garden Grow?)	
	Taught only through Collins Connect lessons		Skills • Set up and carry out some simple comparative and fair tests, making predictions for what might happen. • Make increasingly careful observations, identifying similarities, differences and changes, and making simple connections. • Gather and record findings in a variety of ways (diagrams, tables, charts and graphs) with increasing accuracy. • Describe the requirements of plants for life and growth (air, light, water, nutrients and room to grow) and how they vary from plant to plant.	Knowledge • Tests can be set up and carried out by following or planning a set of instructions. A prediction is a best guess for what might happen in an investigation based on some prior knowledge. • An observation involves looking closely at objects, materials and living things, which can be compared and grouped according to their features. • Data can be recorded and displayed in different ways, including tables, charts, graphs and labelled diagrams. Data can be used to provide

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			• Find patterns in the way shadows change during the day. • Explain, using words or diagrams, how shadows are formed when a light source is blocked by an opaque object. • Draw and label the life cycle of a flowering plant.	evidence to answer questions. • Plants need air, light, water, minerals from the soil and room to grow, in order to survive. Different plants have different needs depending on their habitat. Examples include cacti, which need less water than is typical, and ferns, which can grow in lower light levels. • Shadows change shape and size when the light source moves. For example, when the light source is high above the object, the shadow is short and when the light source is low down, the object's shadow is long. • A shadow is formed when light from a light source, such as the Sun, is blocked by an opaque object. Transparent objects allow light to pass through them and do not create shadows. • Flowers are important in the life cycle of flowering plants. The stages of a plant's life cycle include germination, flower production, pollination, fertilisation, seed

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				formation and seed dispersal. Insects and the wind can transfer pollen from one plant to another (pollination). Animals, wind, water and explosions can disperse seeds away from the parent plant (seed dispersal).
Year 4	Playlist (Linked to Collins Connect unit – Good Vibrations)		Potions (Linked to Collins Connect unit – In A State)	
	Skills • Ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them. • Take accurate measurements in standard units, using a range of equipment. • Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections. • Use scientific vocabulary to report and answer questions about their findings based on evidence collected, draw	**Knowledge** • Questions can help us find out about the world and can be answered using scientific enquiry. • 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). • An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time.	**Skills** • Ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them. • Take accurate measurements in standard units, using a range of equipment. • Begin to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately. • Begin to choose which observations to make and for how long and make systematic, careful	**Knowledge** • Questions can help us find out about the world and can be answered using scientific enquiry. • 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). • Scientific enquiries can be set up and carried out by following or planning a method. A prediction is a statement about what

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	simple conclusions and identify next steps, improvements and further questions. • Compare how the volume of a sound changes at different distances from the source. • Compare and find patterns in the pitch of a sound, using a range of equipment, such as musical instruments. • Compare and find patterns in the volume of a sound, using a range of equipment, such as musical instruments. • Explain how sounds are made and heard using diagrams, models, written methods or verbally.	• Results are information, such as data or observations, that has been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected. • Sounds are louder closer to the sound source and fainter as the distance from the sound source increases. • 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. • 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. • 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.	observations and comparisons, identifying changes and connections. • 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. • Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs). • Group and sort materials into solids, liquids or gases. • 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. •	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. • An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time. • 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. • Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams. • 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. Air is a mixture of gases. • 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

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				liquid is called condensation.
Year 5	Peasants, Princes and Pestillence (Linked to Collins Connect unit – Everyday Materials)		Sow, Grow and Farm (Linked to Collins Connect unit – Reproduction in Plants)	
	Not in this topic		**Skills** • Take increasingly accurate measurements, in standard units, using a range of chosen equipment. • Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based on prior knowledge and understanding. • Within a group, decide which observations to make, when and for how long, and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect. • Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected, identify improvements,	**Knowledge** • Specialised equipment is used to take measurements in standard units. Examples include data loggers plus sensors, such as light (lux), sound (dB) and temperature (°C); timers (seconds, minutes and hours); thermometers (°C), and measuring tapes (millimetres, centimetres, metres). • A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding. • An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to

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			further questions and predictions. • Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification keys, tables, graphs and models). • Group and sort plants by how they reproduce. • Label and draw the parts of a flower involved in sexual reproduction in plants (stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and sepal). • Describe the life process of reproduction in some plants and animals. • Compare the life cycles of animals, including a mammal, amphibian, insect and bird. •	identify changes over time. • The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected. • Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams. • Flowering plants reproduce sexually. The flower is essential for sexual reproduction. Other plants reproduce asexually. Bulbs, corms and rhizomes are some parts used in asexual reproduction in plants. • Parts of a flower include the stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and sepal. Pollination is when the male part of a plant (pollen) is carried, by wind, insects or other animals, to the female part of the plant (carpel).

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				The pollen travels to the ovary, where it fertilises the ovules (eggs). Seeds are then produced, which disperse far away from the parent plant and grow new plants. • Reproduction is the process of producing offspring and is essential for the continued survival of a species. There are two types of reproduction: sexual and asexual. Sexual reproduction involves two parents (one female and one male) and produces offspring that are different from the parents. Asexual reproduction involves one parent and produces offspring that is identical to the parent. • A life cycle is the series of changes in the life of a living thing and includes these basic stages: birth, growth, reproduction and death. Mammals' life cycles include the stages: embryo, baby, adolescent and adult. Amphibians' life cycles include the stages: egg, larva (tadpole), adolescent and adult. Some insects'

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				(butterflies, beetles and bees) life cycles include the stages: egg, larva, pupa and adult. Birds' life cycles include the stages: egg, baby, adolescent and adult.
Year 6	Frozen Kingdom (Linked to Collins Connect unit – Nature Library)		Darwin's Delights (Linked to Collins Connect unit – Everything Changes)	
	Skills • Ask and answer deeper and broader scientific questions about the local and wider world that build on and extend their own and others' experiences and knowledge. • Plan and carry out a range of enquiries, including writing methods, identifying and controlling variables, deciding on equipment and data to collect and making predictions based on prior knowledge and understanding. • Independently, decide which observations to make, when and for how long and make systematic and careful observations, using them to make comparisons, identify changes, classify and make	**Knowledge** • Questions can help us find out about the world and can be answered using a range of scientific enquiries, including fair tests, research and observation. • A method is a set of clear instructions for how to carry out a scientific investigation, including what equipment to use and observations to make. A variable is something that can be changed during a fair test. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding. • The results are information, such as measurements or observations, that have been	**Skills** • Ask and answer deeper and broader scientific questions about the local and wider world that build on and extend their own and others' experiences and knowledge. • Plan and carry out a range of enquiries, including writing methods, identifying and controlling variables, deciding on equipment and data to collect and making predictions based on prior knowledge and understanding. • Report on and validate their findings, answer questions and justify their methods, opinions and conclusions, and use their	**Knowledge** • Questions can help us find out about the world and can be answered using a range of scientific enquiries, including fair tests, research and observation. • A method is a set of clear instructions for how to carry out a scientific investigation, including what equipment to use and observations to make. A variable is something that can be changed during a fair test. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.

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	links between cause and effect. • Report on and validate their findings, answer questions and justify their methods, opinions and conclusions, and use their results to suggest improvements to their methodology, separate facts from opinions, pose further questions and make predictions for what they might observe. • Choose an appropriate approach to record accurate results, including scientific diagrams, labels, timelines, classification keys, tables, models and graphs (bar, line and scatter), linking to mathematical knowledge. • Research unfamiliar animals and plants from a range of habitats, deciding upon and explaining where they belong in the classification system. • Identify how animals and plants are adapted to suit their environment, such as giraffes having long necks for feeding, and that adaptations may lead to evolution. •	collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected using correct, precise terminology. • Data can be recorded and displayed in different ways, including tables, bar and line charts, scatter graphs, classification keys and labelled diagrams. • Living things are classified into groups, according to common observable characteristics and based on similarities and differences. •	results to suggest improvements to their methodology, separate facts from opinions, pose further questions and make predictions for what they might observe. • Choose an appropriate approach to record accurate results, including scientific diagrams, labels, timelines, classification keys, tables, models and graphs (bar, line and scatter), linking to mathematical knowledge. • Research unfamiliar animals and plants from a range of habitats, deciding upon and explaining where they belong in the classification system. • Use and construct classification systems to identify animals and plants from a range of habitats. • Classify living things into groups according to common observable characteristics and based on similarities and differences. • Identify that living things produce offspring of the same kind, although the	• An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time, identify processes and make comparisons. • The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected using correct, precise terminology. • Data can be recorded and displayed in different ways, including tables, bar and line charts, scatter graphs, classification keys and labelled diagrams. • Living things are classified into groups, according to common observable characteristics and based on similarities and differences. • Classification keys help us identify living things

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			offspring are not identical to either parent. • Explain that living things have changed over time, using specific examples and evidence. • Describe how animals and plants can be bred to produce offspring with specific and desired characteristics (selective breeding). • Identify how animals and plants are adapted to suit their environment, such as giraffes having long necks for feeding, and that adaptations may lead to evolution.	based on their physical characteristics. • Scientists classify living organisms into broad groups according to their characteristics. Vertebrates are an example of a classification group. There are a number of ranks, or levels, within the biological classification system. The first rank is called a kingdom, the second a phylum, then class, order, family, genus and species. • Animals that sexually reproduce generate new offspring of the same kind by combining the genetic material of two individuals. Each offspring inherits two of every gene, one from the female parent and one from the male parent. • Animals and plants can be bred to produce offspring with specific and desired characteristics. This is called selective breeding. Examples include cows that produce large quantities of milk or crops that are disease-resistant.

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				• An adaptation is a physical or behavioural trait that allows a living thing to survive and fill an ecological niche. Adaptations evolve by natural selection. Favourable traits help an organism survive and pass on their genes to subsequent generations. • Scientists compare fossilised remains from the past to living species that exist today to hypothesise how living things have evolved over time. Humans and apes share a common ancestry and evidence for this comes from fossil discoveries and genetic comparison.

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	Summer 1		Summer 2	
	Nursery How High Can I Jump?		Nursery Why Is Water Wet?	
EYFS **All E. L. Goals are to be considered in conjunction with the prime areas of learning.**	**The World** **E. L. Goal 62** Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes	• **22-36 months Nursery** Notices detailed features of objects in their environment. • **30-50 months Nursery** Talks about why things happen and how things work. • **40-60+ months Nursery** Looks closely at similarities, differences, patterns and change.	**The World** **E. L. Goal 100** Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	• **22-36 months** Notices detailed features of objects in their environment. • **30-50 months** Can talk about some of the things they have observed such as plants, animals, natural and found objects. • **40-60+ months** Looks closely at similarities, differences, patterns and change.
	Reception Are We There Yet?		Reception Why Do Ladybirds Have Spots?	
	The World **E. L. Goal 145** Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	• **30-50 months** Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. • **40-60+ months** Looks closely at similarities, differences, patterns and change. • **ELG skills** Talk about features of their immediate environment. • **Exceeding ELG** Know that the environment and living things are influenced by human activity.	**The World** **E. L. Goal 145** Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.	• **30-50 months** Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. • **30-50 months** Can talk about some of the things they have observed such as plants, animals, natural and found objects. • **40-60+ months** Looks closely at similarities, differences, patterns and change. • **ELG skills** Talk about features of their immediate environment.

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				• **Exceeding ELG** Know that the environment and living things are influenced by human activity.
Year 1	Splendid Skies (Linked to Collins Connect unit – Using Our Senses)		Rio de Vida (Linked to Collins Connect unit – Animal Antics)	
	Skills • With support, use simple equipment to measure and make observations. • With support, follow instructions to perform simple tests and begin to talk about what they might do or what might happen. • Observe objects, materials, living things and changes over time, sorting and grouping them based on their features. • Talk about what they have done and say, with help, what they think they have found out. • With support, gather and record simple data in a range of ways (data tables, diagrams, Venn diagrams). • Observe the local environment throughout the year and ask and answer questions about living things and seasonal change. • Compare shadows made by different objects and materials.	**Knowledge** • Simple equipment is used to take measurements and observations. Examples include metre sticks, measuring tapes, egg timers and hand lenses. • Simple tests can be carried out by following a set of instructions. • Objects, materials and living things can be looked at and compared. • The results are information that has been found out from an investigation. • Data can be recorded and displayed in different ways, including tables, pictograms and drawings. • The local environment is a habitat for living things and can change during the seasons. • Shadows are normally the same shape as the object that cast them. Shadows change during the day as the Sun appears to change position in the sky. Shadows occur where light is blocked by an opaque object.	Taught entirely from Collins Connect units	

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	• Observe changes across the four seasons. • Observe and describe different types of weather. • Explain in simple terms how shadows are formed. • Investigate weather using toys, models or simple equipment. •	• There are four seasons: spring, summer, autumn and winter. Certain events and weather patterns happen in different seasons. • Different types of weather include sunshine, rain, hail, wind, snow, fog, lightning, storm and cloud. The weather can change daily and some weather types are more common in certain seasons, such as snow in winter. • A shadow is formed when light from a light source, such as the Sun, is blocked by an opaque object, but not by transparent objects. • Simple equipment can be used for measuring weather, such as measuring temperature with a thermometer; identifying wind direction and force with a wind sock or measuring rainfall with a rain gauge.		
Year 2	Wriggle and Crawl (Linked to Collins Connect unit – What's In Your Habitat?)		Coastline (Linked to Collins Connect unit – The Apprentice Gardener)	
	Skills • Ask and answer scientific questions about the world around them. • Use simple equipment to measure and make observations.	Knowledge • Questions can help us find out about the world. • Simple equipment is used to take measurements and observations. Examples include timers, hand lenses,	Skills • Follow a set of instructions to perform a range of simple tests, making simple predictions for what might happen and suggesting ways to answer their questions.	Knowledge • Tests can be carried out by following a set of instructions. A prediction is a guess for what might happen in an investigation.

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	• Follow a set of instructions to perform a range of simple tests, making simple predictions for what might happen and suggesting ways to answer their questions. • Begin to notice patterns and relationships in their data and explain what they have done and found out using simple scientific language. • Use a range of methods (tables, charts, diagrams and Venn diagrams) to gather and record simple data with some accuracy. • Identify and name a variety of plants and animals in a range of habitats and microhabitats. • Describe the basic life cycles of some familiar animals (egg, caterpillar, pupa, butterfly; egg, chick, chicken; spawn, tadpole, froglet, frog). • Interpret and construct simple food chains to describe how living things depend on each other as a source of food.	metre sticks and trundle wheels. • Tests can be carried out by following a set of instructions. A prediction is a guess for what might happen in an investigation. • The results are information that has been found out from an investigation and can be used to answer a question. • Data can be recorded and displayed in different ways, including tables, charts, pictograms and drawings. • A habitat is a place where a living thing lives. A microhabitat is a very small habitat. • Animals have offspring that grow into adults. Different animals have different stages of growth or life cycles. • Food chains show how living things depend on one another for food. All food chains start with a plant, followed by animals that either eat the plant or other animals. • Animals need water, food, air and shelter to survive. Their habitat must provide all these things.	• Use a range of methods (tables, charts, diagrams and Venn diagrams) to gather and record simple data with some accuracy. • Compare the suitability of a range of everyday materials for particular uses. • Describe how some objects and materials can be changed and how these changes can be desirable or undesirable. • Sort and group objects that float and sink.	• Data can be recorded and displayed in different ways, including tables, charts, pictograms and drawings. • A material's physical properties make it suitable for particular purposes, such as glass for windows and brick for building walls. Many materials are used for more than one purpose, such as metal for cutlery and cars. • Some objects and materials can be changed by squashing, bending, twisting, stretching, heating, cooling, mixing and being left to decay. • Some objects float and others sink. Objects that float are typically light or hollow.

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Year 3	Scrumdiddliumptious (Linked to Collins Connect unit –Can You See Me?)		Flow (Linked to Collins Connect unit – Rock Detectives)	
	Skills • Set up and carry out some simple comparative and fair tests, making predictions for what might happen. • Make increasingly careful observations, identifying similarities, differences and changes, and making simple connections. • Explain the importance and characteristics of a healthy, balanced diet.	Knowledge • Tests can be set up and carried out by following or planning a set of instructions. A prediction is a best guess for what might happen in an investigation based on some prior knowledge. • An observation involves looking closely at objects, materials and living things, which can be compared and grouped according to their features. • Humans have to get nutrition from what they eat. It is important to have a balanced diet made up of the main food groups, including proteins, carbohydrates, fruit and vegetables, dairy products and alternatives, and fats and spreads. Humans need to stay hydrated by drinking water.	Skills • Ask questions about the world around them and explain that they can be answered in different ways. • Take measurements in standard units, using a range of simple equipment. • Set up and carry out some simple comparative and fair tests, making predictions for what might happen. • Make increasingly careful observations, identifying similarities, differences and changes, and making simple connections. • Use suitable vocabulary to talk or write about what they have done, what the purpose was and, with help, draw a simple conclusion based on evidence collected, beginning to identify next steps or improvements. • Gather and record findings in a variety of ways (diagrams, tables, charts and graphs) with increasing accuracy.	Knowledge • Questions can help us find out about the world and can be answered in different ways. • 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 (millimetres, centimetres and metres). Taking repeat readings can increase the accuracy of the measurement. • Tests can be set up and carried out by following or planning a set of instructions. A prediction is a best guess for what might happen in an investigation based on some prior knowledge. • An observation involves looking closely at objects, materials and living things, which can be compared and grouped according to their features. • Results are information that has been found out from an investigation. A

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			• Investigate soils from the local environment, making comparisons and identifying features.	conclusion is the answer to a question that uses the evidence collected. • Data can be recorded and displayed in different ways, including tables, charts, graphs and labelled diagrams. Data can be used to provide evidence to answer questions. • Soils are made from tiny pieces of eroded rock, air and organic matter. There are a variety of naturally occurring soils including, clay, sand and silt. Different areas have different soil types.
Year 4	Road Trip USA (Linked to Collins Connect unit – Switched On!)		Blue Abyss (Linked to Collins Connect unit – Human Impact)	
	Skills • Ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them. • Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs). • Explain the precautions needed for working safely with electrical circuits.	Knowledge • Questions can help us find out about the world and can be answered using scientific enquiry. • Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams. • Working with electrical circuits can be dangerous. Precautions include not touching electrical components with wet hands and not putting batteries in mouths.	Skills • Ask relevant scientific questions, independently, about the world around them and begin to identify how they can answer them. • Take accurate measurements in standard units, using a range of equipment. • Begin to independently plan, set up and carry out a range of comparative and fair tests, making predictions and following a method accurately.	Knowledge • Questions can help us find out about the world and can be answered using scientific enquiry. • 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). • Scientific enquiries can be set up and carried out by

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	• Describe materials as electrical conductors or insulators. • Compare common household equipment and appliances that are and are not powered by electricity. • 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. • Construct operational simple series circuits using a range of components and switches for control.	• 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. • 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. • 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. • Electrical components include cells, wires, lamps, motors, switches and buzzers. Switches open and close a circuit and provide control.	• Begin to choose which observations to make and for how long and make systematic, careful observations and comparisons, identifying changes and connections. • 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. • Gather, record, classify and present observations and measurements in a variety of ways (pictorial representations, timelines, diagrams, keys, tables, charts and graphs). • Describe how environments can change due to human and natural influences and the impact this can have on living things. • Compare, sort and group living things in a variety of ways based on observable features and behaviour. • Construct and interpret a variety of food chains and webs to show interdependence and how	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. • An observation involves looking closely at objects, materials and living things. Observations can be made regularly to identify changes over time. • Results are information, such as data or observations that has been found out from an investigation. A conclusion is the answer to a question that uses the evidence collected. • Data can be recorded and displayed in different ways, including tables, charts, graphs, keys and labelled diagrams. • Humans can affect habitats in negative ways, such as litter, pollution and land development, or positive ways, such as garden ponds, bird boxes and wildflower areas. • Scientists classify living things according to

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			energy is passed on over time. • Explain how adaptations help living things to survive in their habitat. • Explain how unfamiliar habitats, such as a mountain or ocean, can change over time and what influences these changes.	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 a scientific tools that aid the identification of living things. • 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. • An adaptation helps an animal or plant survive in its habitat. If living things are unable to adapt to changes within their habitat, they are at risk of becoming extinct. • Habitats change over time, either due to natural

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				or human influences. Natural influences include extreme or unseasonable weather. Human influences include habitat destruction or pollution. These changes can pose a risk to animals and plants that live in the habitat.
Year 5	Time Traveller (Linked to Collins Connect unit –Reproduction in Animals)		Scream Machine (Linked to Collins Connect unit – Feel the Force)	
	Skills • Ask a wide range of relevant scientific questions that broaden their understanding of the world around them and identify how they can answer them. • Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based on prior knowledge and understanding. • Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected, identify improvements, further questions and predictions. • Gather and record data and results of increasing complexity, selecting from a	Knowledge • A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding. • The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected. • Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams. • Humans reproduce sexually, which involves two parents (one female and one male)	Skills • Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based on prior knowledge and understanding. • Use relevant scientific vocabulary to report on their findings, answer questions and justify their conclusions based on evidence collected, identify improvements, further questions and predictions. • Describe, using evidence from comparative or fair tests, why a material has been chosen for a specific use. • Compare and describe, using a range of toys, models and natural	Knowledge • A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding. • The results are information, such as measurements or observations, that have been collected during an investigation. A conclusion is an explanation of what has been discovered using evidence collected. • A material's properties dictate what it can be used for. For example, cooking pans are made from metal, which is a good thermal conductor,

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	range of methods (scientific diagrams, labels, classification keys, tables, graphs and models). • Describe the process of human reproduction. • Explain why personal hygiene is important during puberty. • Describe the changes as humans develop from birth to old age.	and produces offspring that are different from the parents. • Good personal hygiene (washing, wearing clean clothes and teeth brushing) can prevent disease or illness. Puberty is the period during which adolescents reach sexual maturity and become capable of reproduction. It causes physical and emotional changes.	objects, the effects of water resistance, air resistance and friction. • Explain that objects fall to Earth due to the force of gravity. • Describe and demonstrate how simple levers, gears and pulleys assist the movement of objects.	allowing heat to quickly transfer from the hob to the contents of the pan. • Friction, air resistance and water resistance are forces that oppose motion and slow down moving objects. These forces can be useful, such as bike brakes and parachutes, but sometimes we need to minimise their effects, such as streamlining boats and planes to move through water or air more easily, and using lubricants and ball bearings between two surfaces to reduce friction. • Gravity is a force of attraction. Anything with a mass can exert a gravitational pull on another object. The Earth's large mass exerts a gravitational pull on all objects on Earth, making dropped objects fall to the ground. • Mechanisms, such as levers, pulleys and gears, give us a mechanical advantage. A mechanical advantage is a measurement of how much a simple machine multiplies the force that we put in. The bigger the mechanical advantage,

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				the less force we need to apply.
Year 6	Hola Mexico (Linked to Collins Connect unit – Danger! Low Voltage)		Tomorrow's World (Linked to Collins Connect unit – Light Up Your World)	
	Skills • Explain, using words, diagrams or a model, why shadows have the same shape as the objects that cast them and how shadows can be changed. • Identify that light travels in straight lines.	Knowledge • A shadow appears when an object blocks the passage of light. Apart from some distortion or fuzziness at the edges, shadows are the same shape as the object. The distortion or fuzziness depends on the position or type of light source. • Light travels in straight lines.	**Skills** • Ask and answer deeper and broader scientific questions about the local and wider world that build on and extend their own and others' experiences and knowledge. • Plan and carry out a range of enquiries, including writing methods, identifying and controlling variables, deciding on equipment and data to collect and making predictions based on prior knowledge and understanding. • Describe, using diagrams, how light behaves when reflected off a mirror (plane, convex or concave) and when passing through a lens (concave or convex). • Compare and give reasons for variations in how components in electrical circuits function (brightness of lamps; volume of buzzers and function of on or off switches).	**Knowledge** • Questions can help us find out about the world and can be answered using a range of scientific enquiries, including fair tests, research and observation. • A method is a set of clear instructions for how to carry out a scientific investigation, including what equipment to use and observations to make. A variable is something that can be changed during a fair test. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding. • Mirrors and lenses are used in a range of everyday objects (telescopes, periscopes, cards and on roads). The human eye has a lens that bends and focuses light on the back of the eye (retina) so that we can see.

TPS Science Progression Map

			• Identify that light travels in straight lines. • Explain that, due to how light travels, we can see things because they give out or reflect light into the eye. • Explain how the brightness of a lamp or volume of a buzzer is affected by the number and voltage of cells used in a circuit. • Create circuits using a range of components and record diagrammatically using the recognised symbols for electrical components. •	• A circuit needs a power source, such as a battery or cell, with wires connected to both the positive and negative terminals. Other components include lamps, buzzers or motors, which an electric current passes through and affects a response, such as lighting a lamp or turning a motor. When a switch is open, it creates a gap and the current cannot travel around the circuit. When a switch is closed, it completes the circuit and allows a current to flow all the way around it. • Light travels in straight lines. • Light sources give out light. They can be natural or artificial. When light hits an object, it is absorbed, scattered, reflected or a combination of all three. Light from a source or reflected light enter the eye. Vertebrates, such as mammals, birds and reptiles, have a cornea and lens that refracts light that enters the eye and focuses it on the nerve tissue at the back of the eye, which is called the

				retina. Once light reaches the retina, it is transmitted to the brain via the optic nerve. • Voltage is measured in volts (V) and is a measure of the difference in electrical energy between two parts of a circuit. The bigger the voltage, the more electrons are pushed through the circuit. The more voltage flowing through a lamp, buzzer or motor, the brighter the lamp, the louder the buzzer and the faster the motor. • There are recognised symbols for different components of circuits.