

KSI/2 skills progression overview (National Curriculum)

Science	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	*Describe some of the features of seeds and plants. They can begin to make comparisons of different plants and seeds. *Identify, name and begin to describe the basic structure of a variety of common flowering plants. *Identify and name a variety of common wild and garden plants. *Identify and name a variety of deciduous and evergreen trees. They identify, name and describe the basic parts of a tree. *Identify and name a variety of fruit and vegetable plants. They identify and describe the basic structure of a variety of common plants. *Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.	*To observe and describe how seeds and bulbs grow into mature plants. *To perform a simple test to show the needs of a plant. *To perform simple tests (a test to see what cress seeds need to grow well) *To use observations and ideas to suggest answers to questions. *To gather and record data to help in answering questions.	*To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers *To know, by investigating, the way in which water is transported within plants *Ask relevant questions and use different types of scientific enquiries to answer them. * Setup simple practical enquiries, comparative and fair tests based on the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.			

Animals including humans	*Observe and identify animals in the world around them. *With a support resource, they sort and classify them into simple groups. *Make careful observations of animals in the same group and can use simple features to compare living things (animals). *Use simple secondary sources to find answers to help them sort and classify animals according to what they eat. *Use their senses to carry out simple practical tests, using simple equipment. After making careful observations, they can draw simple conclusions and can, with support, record and communicate their findings in a range of ways. *Use simple sorting diagrams to sort and classify objects (animals) into simple groups of their choice and are	*To observe and record the changes in humans as they grow. Question why these changes take place. *To find out about and describe the basic needs of animals, including humans, for survival. *To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. *To identify and classify (food groups). *To observe and record (the effects of exercise on the body). *To perform a simple test (hand washing investigation).	*To identify that animals, including humans, need the right types and amount of nutrition and recall the five main food groups and list examples. *Ask relevant questions and use different types of scientific enquiries to answer them. *Set up simple practical enquiries, comparative and fair tests. * Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.	*Record the functions of the digestive system using labelled diagrams. * Draw and label the different types of human teeth. *Use secondary sources to identify predators and their prey. *Construct a variety of food chains.	*Describe the changes as humans develop to old age	*Explain that the circulatory system in animals transports oxygen, water and nutrients around the body. *Explain the impact of positive and negative lifestyle choices on the body. *Name and describe the purpose of the circulatory system and the functions of the heart, blood vessels and blood.
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	beginning to explain why they have sorted them this way.					
Materials	*Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock by matching a material to its name. *Distinguish between an object and the material from which it is made *Describe the simple physical properties of a variety of everyday materials. *Identify which materials have certain properties. *Observe closely, perform a simple test and to use their observations to ask questions. *Compare and group together a variety of everyday materials on the basis of their simple physical properties	*To identify and compare the suitability of a variety of everyday materials for particular uses. *To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. *To find out about people who have developed useful new materials. *To perform simple tests; To observe things closely, using simple equipment; *Use observations and ideas to suggest answers to questions; *Ask simple questions and recognise that they can be answered in different ways. *To gather and record data to help answer questions. *To identify and classify.			* To describe and report changes of state using scientific language *To observe changes over time e.g. using ice to explore thermal conductors/ insulators * To test and group materials (wood, metal and plastic) based on scientific evidence (hardness/solubility) *To recover a substance from a solution (salt)	

Seasonal Changes

- *Observe and describe weather associated with the seasons by observing the weather in autumn.
- *Gather and record data to help in answering questions by recording the weather, temperature, rainfall and wind direction in autumn.
- *Observe changes that occur in Autumn compared to the other seasons.
- *Observe and describe how day length varies in the context of autumn to winter.
- *Observe changes across the 4 seasons by looking at how trees and the clothes that we wear change from autumn to winter.
- *Observe and describe weather associated with the seasons by observing and recording the weather in winter.
- *Gather and record data to help in answering questions by recording the weather, temperature, rainfall

	and wind direction in winter. *Observe changes across the 4 seasons by exploring how some animals adapt to survive in winter.					
Living things and their habitats		*To explore and compare the differences between things that are living, dead, and things that have never been alive. *To group, identify and classify animals and plants from similar/different habitats. *To identify and name a variety of plants and animals in their habitats, including microhabitats. *To describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. *To observe closely using simple equipment (magnifying glass to look at microhabitats). *To identify and classify (sort plants and		. *Recognise that living things can be grouped in a variety of ways. *Classify and group them by chosen criteria. * Explore plants and animals living in the local area and present information using a key. *Use secondary sources to aid identification. *Research and identify environmental dangers and their effects upon animal and plant life. *Set up a simple test to gain evidence and to support findings. Suggest possible solutions.	* Compare the life cycles of a mammal, an amphibian, an insect and a bird. *To observe changes over time (plants in a local environment and animals). *Describe the life process of a-sexual and sexual reproduction in some plants. *Describe the process of sexual reproduction in animals *Grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. *To label, draw and dissect a flower. *Study the work of an animal behaviourist – David Attenborough.	*Classify living things, including microorganisms, animals and plants, into groups according to common observable characteristics and based on similarities and differences. *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. *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. *Research unfamiliar animals and plants from a range of habitats, deciding upon and

		animals in to correct habitats).				explaining where they belong in the classification system. *Use and construct classification systems to identify animals and plants from a range of habitats.
Rocks			*To compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. To explain how fossils are formed when things that have lived are trapped within rock. *To identify and describe the three different rock types and list examples. *Ask relevant questions and using different types of scientific enquiries to answer them. * Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. *Use straightforward scientific evidence to answer questions or to support their findings.			

			*Set up simple practical enquiries, comparative and fair tests. * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. *Gather, record, classify and present data in a variety of ways to help in answering questions. *Compare and group rocks based on their appearance, properties or uses.			
Light			*Ask relevant questions and use different types of scientific enquiries to answer them. * Setup simple practical enquiries, comparative and fair tests to show that light is reflected off surfaces and how shadows are formed. *Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, including thermometers and data loggers. *Gather, record, classify and present data in a			Children choose one of the following questions to investigate: *How much light passes through a range of transparent and translucent materials? *How much light is absorbed by different materials? *Do all shiny materials reflect light? *Does crumpled foil reflect as much light as flat foil? *Which fabric would be the best to use to make a pair of curtains? *When does a material become opaque?

			variety of ways to help in answering questions. * Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.			*Is any material totally transparent? *Children design the method and list equipment needed for the experiment. *Children follow method and take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. *Children display their data appropriately. Give time for them to interrogate their data, seek out patterns and answer their question.
Forces and Magnets			*To investigate how things move differently on different surfaces. * Record findings using simple scientific language, drawings, keys, bar charts and tables. – e.g. time taken to move across surfaces, the strength of magnets * To investigate how magnets attract or repel each other and attract some materials and not others. * Pupils should read and spell scientific vocabulary		*Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. *Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. *Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.	

			correctly and with confidence, using their growing word reading and spelling knowledge.			
States of matter				*Compare and group materials together according to whether they are solids, liquids or gases. *Explore how materials change state when they are heated or cooled. *Measure or research the temperature at which this change happens. *Set up a simple practical enquiry to test what happens to water at various temperatures. *Present findings using scientific vocabulary, in a variety of ways.		
Sound				*To explore how sounds are made. * Identify patterns between volume, strength and distance through comparative and fair tests. *Make predictions and present conclusions using scientific language.		
Electricity				*Construct a simple series circuit. *Identify whether a lamp will light in a simple series circuit based on whether		*Plan different kinds of fair experiments. *Recognise why controlling variables is important and explain how and why.

				or not the lamp is part of a complete loop with a battery. *Make predictions and suggest improvements to their circuit. *Test circuits with a variety of possible conductors and present findings and conclusions using labelled diagrams.		*Take repeated measurements when appropriate. *Draw conclusions from results and describe causal relationships. *Compare and give reasons for variations in how components function in circuits. *Use evidence to justify ideas. *Use scientific language and diagrams to report and present findings.
Earth and Space					*To raise scientific questions *To draw scientific diagrams/simple models of the solar system with labels and keys. * To compare the time of day through internet links.	
Evolution and inheritance					*Discuss inherited features, making a list in science books. *Children generate a testable hypothesis they can investigate as a class, such as 'Females are taller than males', 'Brown-eyed children also have brown hair' or 'People with larger hand spans also have larger feet'.	

						*Children collect data by taking accurate, precise and repeated measurements in standard units, using a range of chosen equipment. *Children display their data using graphs and charts to identify if their hypothesis was correct. (Discuss the different graphing methods they could use, such as bar charts for discontinuous variation, line graphs for continuous variation or scatter graphs for looking for a correlation between two data sets.) *Children discuss their results and whether it proves or disproves their hypothesis then write a short scientific report, including their original hypothesis, results, graphs and a conclusion
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