Science Whole School Working Scientifically Progression

Strand		Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically	Asking Questions	In the EYFS, the characteristics of effective learning from the Statutory Framework for the Early Years Foundation Stage are the foundations on which the working scientifically skills build in Key Stage 1. While children are playing and exploring, teachers should be modelling, encouraging and supporting them to do the following: Show curiosity and ask questions		Pupils should be taught to: Ask simple questions and recognise that they can be answered in different ways		Pupils should be taught to: Ask relevant questions and use different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests		Pupils should be taught to: Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	
	Measuring & Recording	Make observations using their senses and simple equipment Make direct comparisons Record their observations by drawing, taking photographs, using sorting rings or boxes and, in Reception, on simple tick sheets Use their observations to help them to answer their questions		Observe closely, using simple equipment Perform simple tests Gather and record data to help in answering questions		Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers 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		Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	

	Concluding	Talk about what they have done and found out Identify, sort and group. Pupils should be taught to: Children question why things happen having their own ideas. Look closely at similarities, differences, patterns and change (40-60).	Identify and classify Use their observations and ideas to suggest answers to questions	Identify differences, similarities or changes related to simple scientific ideas and processes Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use straightforward scientific evidence to answer questions or to support their findings	Identify scientific evidence that has been used to support or refute ideas or arguments Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
	Evaluating	Make observations and explain observations (ELG). Carry out observations on changes such as melting ice, floating and sinking, magnets. Begin to explain their observations		Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Use test results to make predictions to set up further comparative and fair tests

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Biology	**Plants**	.		Pupils should be taught to: Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees	Pupils should be taught to: Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	Pupils should be taught to: Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers Explore 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 Investigate the way in which	Pupils should be taught to: Use classification keys to identify a range of different plants	Pupils should be taught to: Describe the life process of reproduction in some plants and animals	Pupils should be taught to: Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

						water is transported within plants Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal			
	Animals including Humans			**Pupils should be taught to:** Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores	**Pupils should be taught to:** Notice that animals, including humans, have offspring which grow into adults Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of	**Pupils should be taught to:** Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat Identify that humans and some other animals have skeletons and muscles for support, protection and movement	**Pupils should be taught to:** Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey	**Pupils should be taught to:** Describe the changes as humans develop to old age	**Pupils should be taught to:** identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported

				Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	different types of food, and hygiene				within animals, including humans

	Living Things and their Habitats				**Pupils should be taught to:** Explore and compare the difference between things that are living, dead, and things that have never been alive Identify that most living things live in habitats to which they are suited and describe how different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each other Identify and name a variety of plants and animals in their habitats, including micro-habitats 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				

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Chemistry	Asking Questions	.		Pupils should be taught to: • ask simple questions and recognise that they can be answered in different ways		Pupils should be taught to: • ask relevant questions and use different types of scientific enquiries to answer them • set up simple practical enquiries, comparative and fair tests		Pupils should be taught to: • plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	

	Measuring & Recording		• observe closely, using simple equipment • perform simple tests • gather and record data to help in answering questions	• make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • 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	• take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
	Concluding		• identify and classify • use their observations and ideas to suggest answers to questions	• identify differences, similarities or changes related to simple scientific ideas and processes • report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use straightforward scientific evidence to answer questions or to support their findings	• identify scientific evidence that has been used to support or refute ideas or arguments • report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

	Evaluating			Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	• use test results to make predictions to set up further comparative and fair tests