Wendron Science Skills and Knowledge Progression EYFS-Year 6

	Foundation	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
	EYFS	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Working Scientifically **PLAN**	CEL Find ways to solve problems / find new ways to do things / test their ideas ELG Choose the resources they need for their chosen activities	Ask simple questions when prompted Suggest ways of answering a question	Ask simple questions Recognise that questions can be answered in different ways	Ask relevant questions when prompted Use different types of scientific enquiry to answer them. Set up simple and practical enquiries, comparative and fair tests with some support.	Ask relevant questions. Use different types of scientific enquiries to answer their questions Set up simple and practical enquiries, comparative and fair tests	Plan different types of scientific enquiries to answer questions. With prompting, recognise and control variables where necessary	Plan different types of scientific enquiries to answer questions Recognise and control variables where necessary
Working Scientifically **DO**	CEL Engage in open-ended activity CEL Take a risk, engage in new experiences and learn by trial and error ELG Choose the resources they need for their chosen activities ELG Handle equipment and tools effectively ELG Make observations	Make relevant observations using simple equipment Conduct simple tests, with support Identify and classify with guidance	Observe closely, using simple equipment Perform simple tests Identify and classify	Make systematic and careful observations, using simple equipment Use standard units when taking measurements	Make systematic and careful observations using a range of equipment, including thermometers and data loggers Take accurate measurements using standard units, where appropriate	Select, with prompting, and use appropriate equipment to take readings Take precise measurements using standard units Begin to understand the need for repeat readings	Use a range of scientific equipment to take measurements Take measurements with increasing accuracy and precision Take repeat readings when appropriate

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Working Scientifically **RECORD**	CEL Develop ideas of grouping, sequences, cause and effect ELG Answer how and why questions about their experiences ELG Make observations	Gather and record data	Record and communicate their findings in a range of ways and begin to use simple scientific language Gather and record data to help answer questions	With modelling and guidance, gather, record, classify and present data in a variety of ways to help to answer questions With prompting, record findings using simple scientific language, drawings and labelled diagrams Record findings using keys, bar charts, and tables	Gather, record, classify and present data in a variety of ways to help to answer questions Record findings using simple scientific language, drawings and labelled diagrams Record findings using keys, bar charts, and tables	Take and process repeat readings Record data and results Record data using labelled diagrams, keys, tables and charts Use line graphs to record data	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar charts, scatter graphs and line graphs
Working Scientifically **REVIEW**	CEL Question why things happen ELG Answer how and why questions about their experiences ELG Develop their own narratives and explanations by connecting ideas or events ELG Explain why some things occur and talk about changes	Recognise findings Use their observations and ideas to suggest answers to simple questions	Use their observations and ideas to suggest answers to simple questions	With prompting, suggest conclusions from enquiries Suggest how findings could be reported Begin to identify differences, similarities or changes related to simple scientific ideas and processes With modelling, use straightforward scientific evidence to answer questions or to support their findings Suggest possible improvements or further questions to investigate	Report on findings from enquiries, including oral and written explanations, of results and conclusions Report on findings from enquiries using displays or presentations Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support their findings Use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions	Report and present findings from enquiries, including conclusions and, with prompting, suggest causal relationships With support, present findings from enquiries orally and in writing Use test results to make predictions and suggest further comparative or fair tests	Report and present findings from enquiries, including conclusions and causal relationships Report and presents findings from enquiries in oral and written forms such as displays and other presentation Report and present findings from enquiries, including explanations of, and degree of, trust in results Identify scientific evidence that has been used to support or refute ideas or arguments Use test results to make predictions to set up further comparative and fair tests

Animals Including Humans	Name and describe some of the animals they are likely to see After close observation, draw pictures of animals Find out about nocturnal animals Observe how animals behave differently as the seasons change Learn about different animal groups Describe whether a food comes from an animal or a plant	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 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	Understand that animals, including humans, have offspring which grow into adults 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 different types of food, and hygiene	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	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.	Describe the changes as humans develop to old age.	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 within animals, including humans. - (see also Evolution and inheritance)

Plants	Name and describe some of the plants they are likely to see After close observation, draw pictures of plants Grow plants from seeds	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.	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	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 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			

Living Things and Their Environment	Share texts about contrasting environments Explore places that have snow all year round and the types of animals that live there Explore animals that are found at the seaside Learn about animals that live in different parts of the world Explore the life cycles of some animals e.g. chickens, frogs and humans		Explore and compare the differences 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 for 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 microhabitats. • 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		Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Recognise that environments can change and that this can sometimes pose dangers to living things.	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable.characteristics and based on similarities and differences, including microorganisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics. - (see also Evolution and inheritance)

Evolution and Inheritance							Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Materials	Observe and interact with ice melting.	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter.	Compare and group materials together, according to whether they are solids, liquids or gases Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic Demonstrate that dissolving, mixing and changes of state are reversible changes Explain that some changes result in the formation of new materials, and that this kind of change is not	

						usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	

Light	Observe and interact with natural processes, such as light travelling through transparent material and an object casting a shadow			Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way that the size of shadows change			Recognise that light appears to travel in straight lines Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

Sound	Observe and interact with a sound causing a vibration				Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases.		

Forces	Explore sinking and floating			Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing		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.	

Electricity					Identify common appliances that run on electricity. Construct a simple series electrical circuit, Identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram.

Seasonal Changes **Earth and Space**	Observe seasonal changes Observe, note and record the weather Engage in texts about the changing seasons	Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies.				Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe the movement of the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately spherical bodies Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	