

Science Progression of Knowledge and Skills Document



Unit	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
	Knowledge and Skills					
Animals, including humans	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 Discover the basic parts of the human body Recording data Learn about your eyes and sight Observing and Measuring Learn about your ears and	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 different types of food, and hygiene Describe the needs of animals for survival Observing and Measuring Describe the needs of humans for survival Recording data Explore the importance of eating the right food Recording data	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 Explore the 5 key food groups Recording data Learn about the nutrition in the food we eat Interpreting and communicating results Learn about the different types of skeletons Interpreting and communicating results Learn about the human skeleton Identifying.	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 Identify the organs in the digestive system Interpreting and communicating results Describe the functions of the main organs in the digestive system Recording data Identify the types of human teeth and their functions Recording data Investigate the effects of	Describe the changes as humans develop to old age Identify the key stages of a mammal's life cycle Explore the gestation periods of mammals Interpreting and communicating results Learn about foetal development Recording data Investigate the hand span of different ages of children Observing and measuring Learn about the changes experienced during puberty Interpreting and communicating results	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 Understand the function of the heart and its role in the circulatory system Recording data Identify and compare blood vessels Observing and measuring Explore blood Recording data

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	hearing Recording data Explore the tongue and taste Setting up tests Explore your sense of touch Observing and Measuring Discover how your nose smells Recording data	Describe what a healthy, balanced diet looks like Interpreting and communicating results Investigate the impact of exercise on our bodies Setting up tests Investigate the importance of hygiene Setting up tests	Observing and Measuring Learn about animals and their skeletons Problem Solving Interpreting and communicating results Explore the role of muscles Interpreting and communicating results	different liquids on the teeth Observing and measuring Understand food chains Pattern-seeking and interpreting and communicating results Explore food webs Recording data	Describe the changes humans may experience during adulthood and old age Interpreting and communicating results	Learn how the body transports water and nutrients Setting up tests Investigate what affects your heart rate Evaluating and drawing conclusions Learn about the impact of drugs and alcohol on the body Interpreting and communicating results
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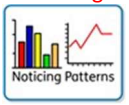
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Living things and their habitats		Explore and compare the differences between things that are living, dead, and things that have never been alive Identify that most living things live in habitats to which they are suited and describe how different 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 Explore and compare the differences between things that are living, dead, and things that have never been alive Grouping & classifying. Recording data Identify and name a variety of plants and animals in a microhabitat Observing and Measuring		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 Explore different habitats Interpreting and communicating results Research a habitat Interpreting and communicating results Explore how animals can be classified Recording data Create a classification key Interpreting and	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 Understand the life processes of a plant. Making predictions Understand the life cycles of mammals. Identifying, grouping and classifying. Interpreting and communicating results Compare the life cycles of insects and amphibians. Observation over time. Recording data Understand the life cycle of birds and reptiles. Observing and measuring Know about the life and work of Jane Goodall and David Attenborough.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics Classify living things Recording data Understand the kingdoms of life. Research. Interpreting and communicating results Classify living things using the Linnaean system. Interpreting and communicating results Identify the characteristics of different type of microorganisms. Setting up tests
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		 Design a suitable microhabitat where living things could survive Observing and Measuring  Find out what animals eat to survive in their habitats Research. Recording data  Understand food chains Research Recording data  Understand the journey food makes from the farm to the supermarket Recording data		communicating results  Adaptations and classification within species Problem-solving Interpreting and communicating results  Explore and classify pond plants Research. Observing and measuring	Interpreting and communicating results  Research and present the life cycle of a creature. Problem-solving Interpreting and communicating results	Investigate asexual reproduction through spore dispersal. Observing and measuring  Classify and describe a living organism. Problem-solving. Interpreting and communicating results
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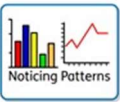
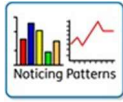
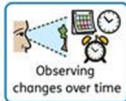
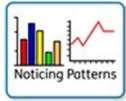


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Plants	Identify and name a variety of common and wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees  Understand that seeds grow into plants Making predictions  Identify the basic parts of a plant and tree Observing and Measuring Understand that different plants can grow in the same environment Recording data	Observe and describe how seeds and bulbs into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy  Know the difference between seeds and bulbs Observe and Measure  Design an experiment to find out what plants need to grow Forming hypothesis  Describe what plants need to grow and stay healthy Recording Data	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  Compare the effect of different factors on plant growth Asking questions and making predictions 			



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	 Know the difference between deciduous and evergreen trees Observing and Measuring	 Describe the life cycle of a plant Recording Data	Identify and describe the functions of different parts of a flowering plant and how they are used in photosynthesis Interpreting and communicating results			
	  Know that fruit trees and vegetables are varieties of plants Making Predictions Recording findings and drawing conclusions	 Observe and record the growth of plants over time Interpreting and communicating results	 Investigate the way in which water is transported within plants Observing and measuring			
	 Record the growth of a plant Interpret and communicate results	 Understand that plants adapt to suit their environment Recording data	 Explore the part that flowers play in the life cycle of flowering plants Recording data			
			 Understand the pollination process and the ways in which seeds are dispersed Interpreting and communicating results			
			 Compare the effect of different factors on plant			

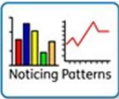
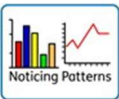
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		growth Interpreting and communicating results			
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Evolution and Inheritance						Recognise that living things have changed over time and that fossils provide information about living things that 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  Understand how offspring vary and are not identical to their parents Interpreting and communicating results  Learn about animal adaptations Interpreting and communicating results Learn about plant adaptations  Explore what we can learn
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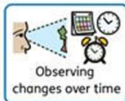
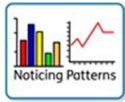
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						from fossils Observing and measuring  Research Explore the theory of evolution by natural selection Exploring scientific evidence
Materials Distinguish between an object and the material from which it is made Identify and name a variety of everyday 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  Grouping and classifying things Identify and name a variety of everyday materials	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  Grouping and classifying things Identify different materials and their uses Observing and Measuring  Comparative and Fair Tests				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,	



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	Observing and Measuring  Grouping and classifying things Distinguish between an object and the material it is made from Grouping & Classifying. Recording data  Grouping and classifying things Describe the properties of everyday materials Observing and Measuring  Grouping and classifying things Identify objects that are natural and those that are manmade Grouping & Classifying Recording data  Comparative and Fair Tests 5Predict and identify if an object will float or sink Making predictions  Comparative and Fair Tests Explore which materials are best for different objects	Understand how to select the right materials to build a bridge Setting up tests  Comparative and Fair Tests Explore and test the stretchiness of materials Setting up tests  Comparative and Fair Tests Understand that materials can change their shape by twisting, bending, squashing or stretching Recording data  Comparative and Fair Tests Find out about Charles Macintosh and explore how materials are suitable for different purposes Interpreting and communicating results  Comparative and Fair Tests Discover which materials change shape when making a road with John McAdam Evaluating			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  Observing changes over time Use evaporation to recover the solute from a solution Observation over time. Setting up tests  Noticing Patterns Recognise and describe reversible changes Problem-solving Interpreting and communicating results  Observing changes over time Observe chemical reactions and describe how we know new materials are made Interpreting and communicating results	
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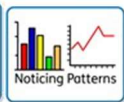
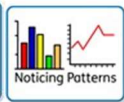
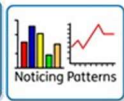
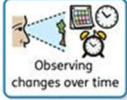
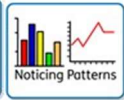
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	Setting up tests				 Investigate rusting reactions Setting up tests Investigate burning reactions Interpreting and communicating results Investigate chemical reactions - acids and bicarbonate of soda Recording data	
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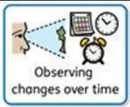
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Seasonal changes	Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies   Understand there are four seasons Observing and Measuring   Understand the changes that take place in Autumn Pattern Seeking and Recording data   Understand the changes that take place in Winter Pattern Seeking and Observing and Measuring   Understand the changes that take place in Spring Identifying, Grouping & Classifying Recording data					

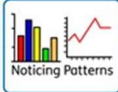
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	 Observing changes over time  Noticing Patterns Understand the changes that take place in Summer Identifying, Grouping & Classifying, Recording data  Comparative and Fair Tests Investigate how you can measure rainfall Pattern Seeking, Interpreting and communicating results					
Rocks			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  Research Explore the formation and properties of igneous rocks Interpreting and communicating results  Comparative and Fair Tests Explore the formation and properties of sedimentary rocks and metamorphic rocks Observing and Measuring			

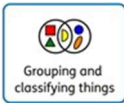
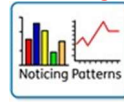
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			  Weathering and the suitability of rocks for different purposes Problem Solving and Evaluating  Explore how water contributes to the weathering of rocks Setting up tests  Understand how fossils are formed Observing and Measuring  Explore different types of soil Observing and Measuring			
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States of 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  Grouping and classifying things Compare and group the 3 states of matter Interpreting and communicating results  Noticing Patterns Explore how particles behave in solids, liquids and gases Interpreting and communicating results  Observing changes over time Investigate melting points Observation over time Setting up tests		
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				 Research Explore freezing and boiling points Recording data  Comparative and Fair Tests Explore evaporation and Condensation Making predictions  Research Understand the water cycle Problem-solving Recording data		
Earth and space					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	

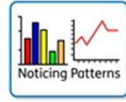
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					night and the apparent movement of the sun across the sky Grouping and classifying things Explore the solar system and its planets. Interpreting and communicating results Research Understand the Heliocentric model of the solar system. Research Interpreting and communicating results Noticing Patterns Explain the Earth's movement in Space. Pattern-seeking Observing and measuring Observing changes over time Explain the Earth's rotation and night and day. Observation over time. Making predictions Noticing Patterns Explain the movement of the Moon. Pattern-seeking. Recording data	
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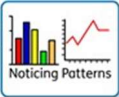
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					 Research Design a planet using knowledge gained. Problem-solving Interpreting and communicating results	
Light			Recognise that they need light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces 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 an opaque object Find patterns in the way that the size of shadows change  Grouping and classifying things Identify the difference between light sources and non-light sources Identifying, Grouping & Classifying. Recording data  Comparative and Fair Tests Explore the light that comes from the sun and how to stay safe Making predictions		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  Grouping and classifying things Explore how light travels Recording data  Comparative and Fair Tests Explore reflection Setting up tests  Noticing Patterns Explore reflection and explain how it can be used to help us see	

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			 Explore materials which are reflective Recording data  Discover how shadows are formed Pattern Seeking. Observing and Measuring  Investigate how you can change the size of a shadow Observing and measuring			Problem-solving. Evaluating  Investigate how shadows can change Observing and measuring  Investigate how we can show why shadows have the same shape as the object that casts them Problem-solving. Interpreting and communicating results  Investigate how we see objects Pattern-seeking
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Forces			Compare how things move on different surfaces Notice that some forces need contact between 2 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 2 poles Predict whether 2 magnets will attract or repel each other, depending on which poles are facing Comparative and Fair Tests Explore contact and non-contact forces Observing and Measuring Comparative and Fair Tests Compare how things move on different surfaces Setting up tests		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 Comparative and Fair Tests Explore gravity and the life and work of Isaac Newton Making predictions Comparative and Fair Tests Examine the connection between air resistance and parachutes Setting up tests Explore factors which affect an object's ability to resist water Investigate the effects of friction on different surfaces Setting up tests Investigate mechanisms - levers and pulleys Evaluating mechanisms - gears	
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			 Explore different types of magnets Making predictions  Explore the properties of magnets and everyday objects that are magnetic Recording data  Understand that magnetic forces can act at a distance Setting up tests  Explore the everyday uses of magnets			
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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 conductor Research Explore electrical appliances and electrical safety Problem-solving and interpreting and communicating results Comparative and Fair Tests Learn about electrical components in a series circuit Problem-solving and setting up tests		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 Grouping and classifying things Describe the parts of an electric circuit Recording data Comparative and Fair Tests Explore voltage and its effect on an electrical circuit Making predictions Research Comparative and Fair Tests Apply knowledge to identify and correct problems in a circuit Problem-solving. Interpreting and communicating results Research Investigate what effects the output of a circuit Evaluating
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				 Investigate electrical circuits Pattern-seeking Making predictions  Explore conductors and insulators Comparative / fair testing. Setting up tests  Learn about electrical switches Problem-solving. Setting up tests  Investigate how electrical components can change within a circuit Comparative / fair testing. Asking questions		 Build a set of traffic lights Problem-solving. Recording data  Apply knowledge of conductors and insulators Observing and measuring
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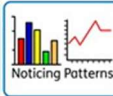
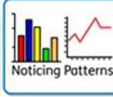
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Sound				Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear Find patterns between the pitch of a sound and features of the object that produced it 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 Grouping and classifying things Identify how sounds are made Interpreting and communicating results Noticing Patterns Explore how vibrations from sounds travel through a medium to the ear Observing and measuring Comparative and Fair Tests Noticing Patterns Exploring sound insulation Problem-solving, Setting up tests Comparative and Fair Tests Noticing Patterns		
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				Exploring volume Pattern-seeking, Recording data   Explore pitch Pattern-seeking, Evaluating   Exploring sounds from near and from far Setting up tests		
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