Woodloes Primary School Science Skills and Knowledge Progression

Science (Year 1 – 3)			
Aspect	Year 1	Year 2	Year 3
Working Scientifically	• Ask simple questions and recognising that they can be answered in different ways. • Observing closely, using simple equipment • Performing simple tests. • Identifying and classifying • Using their observations and ideas to suggest answers to questions. • Gathering and recording data to help in answering questions	• Ask simple questions and recognising that they can be answered in different ways. observing closely, using simple equipment performing simple tests. • Identifying and classifying using their observations and ideas to suggest answers to questions • Gathering and recording data to help in answering questions	• Ask relevant questions and use different types of scientific enquiries to answer them • Set up simple practical enquiries, comparative and fair tests • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • gathering, recording, classifying and presenting data in a variety of ways to help answer questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables • Reporting on findings from enquiries, including oral and written explanation, displays or presentations of results and conclusions • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Identifying differences, similarities or changes related to simple scientific ideas and processes • Using straightforward scientific evidence to answer questions or to support findings
Living things and their habitats	•	• 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. Ryr 4 • Explore and compare the differences between living and non- living things and things that have never been alive • Identify and name a variety of plants and animals in their habitats, including micro-habitats. RYr4 • 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. RYr4	
Animals including humans	• Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals. RYr4 • Identify and name a variety of common animals that are carnivores, herbivores and omnivores. RYr4	• Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. RYr5 • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). RYr3 and 4	• Identify that animals, including humans, need the right types and amount of nutrition and they cannot make their own food: they get nutrition from what they eat. Ry6 • Identify that humans and some other animals have skeletons and muscles for support, protection and movement

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	• 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	• Notice that animals, including humans, have offspring which grow into adults. Ryr 3 and 4	
Plants	• 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. RYr3	• Observe and describe how seeds and bulbs grow into mature plants. RYr3 • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Ryr 3	• Identify and describe the functions of different parts of flowering plants, for example, 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. Ryr 5 Living Things and their Habitat
Seasonal Change	• Observe changes across the four seasons. RYr3 • Observe and describe weather associated with the seasons and how day length varies. RYr3		
Everyday materials	• Distinguish between an object and the material from which it is Ryr 3 and 4 • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. RYr3 • Describe the simple properties of a variety of everyday materials. RYr3 • compare and group together a variety of everyday materials on the basis of their simple physical properties. RYr3 and 4 •	• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. RYr3	
Light			• Recognise that they need light in order to see things and that dark is the absence of light. Ryr 6 • Notice that light is reflected from surfaces. Ryr 6
Forces and magnets			• Compare how things move on different surfaces. RYr5 Forces • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. RY5 Forces • 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
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

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Science (Year 4 – 6)			
Aspect	Year 4	Year 5	Year 6
Working Scientifically	• Ask relevant questions and use different types of scientific enquiries to answer them • Set up simple practical enquiries, comparative and fair tests • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Gathering, recording, classifying and presenting data in a variety of ways to help answer questions • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables • Reporting on findings from enquiries, including oral and written explanation, displays or presentations of results and conclusions. • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Identifying differences, similarities or changes related to simple scientific ideas and processes • Using straightforward scientific evidence to answer questions or to support findings	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • 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 • Use test results to make predictions to set up further comparative and fair tests • 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 • Identify scientific evidence that has been used to support or refute ideas or arguments.	• Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • 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 • Use test results to make predictions to set up further comparative and fair tests • 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 • Identify scientific evidence that has been used to support or refute ideas or arguments
Living things and their habitats	• Recognise that living things can be grouped in a variety of ways. RYr6 Evolution and Inheritance • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. RYr6 • Recognise that environments can change and 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 micro-organisms, plants and animals • Give reasons for classifying plants and animals based on specific characteristics
Animals including humans	• Identify and describe the simple functions of the basic parts of the human digestive system • Describe the simple functions of the organs of the human digestive system. RYr6	• 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

	• Identify the different types of human teeth and their simple functions. RY6 • Construct and interpret a variety of food chains, identifying producers, predators and prey		• 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
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		
Electricity	• Identify common appliances that run on electricity. RYr6 • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. RYr6 • 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. RYr6 • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. RYr6 • Recognise some common conductors and insulators, and associate metals with being good conductors. RYr 6		• 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
States of matter	• Compare and group materials together, according to whether they are solids, liquids or gases. RY5 Properties and Changes of Materials • 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). RY5 Properties and Changes of Materials		

	• Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.		
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 night and the apparent movement of the sun across the sky	
Forces		• 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	
Properties and changes of materials		• 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 • 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.	
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
Light			• 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