



Science Knowledge Progression & Coverage:

WOODVALE PRIMARY ACADEMY

Programme of Study:	Year 1:	Year 2:	Year 3:	Year 4:	Year 5:	Year 6:
Plants	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. <i>Are all leaves the same?</i> <i>Plants Yr1</i> <i>Seasonal Changes</i></p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees. <i>Are all leaves the same?</i> <i>Plants Yr1</i></p>	<p>Observe and describe how seeds and bulbs grow into mature plants. <i>The Scented Garden x3</i> <i>Can seeds grow anywhere?</i> <i>Plants Yr 2</i></p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. <i>The Scented Garden</i> <i>Can seeds grow anywhere?</i> <i>How does grass grow?</i> <i>Plants Yr 2</i></p>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. <i>What are flowers for?</i> <i>Plants Yr 3</i></p> <p>Investigate the way in which water is transported within plants. <i>Predator!</i> <i>Plants Yr 3</i></p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. <i>What are flowers for?</i> <i>Plants Yr 3</i></p>			



WOODVALE PRIMARY ACADEMY

<p>Animals including Humans</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. <i>Animals Yr 1</i> <i>Can you leap like a frog?</i> <i>Humans Yr 1</i> <i>Paws, Claws & Whiskers</i> <i>What can worms sense?</i> Identify and name a variety of common animals that are carnivores, herbivores and omnivores. <i>Animals Yr1</i> <i>Paws, Claws & Whiskers x2</i> Describe and compare the structure of a variety of common animals (fish,</p>	<p>Notice that animals, including humans, have offspring which grow into adults. <i>Animals Yr 2</i> <i>Humans Yr 2</i> <i>Wriggle & Crawl x4</i> <i>What is the lifecycle of a ladybird?</i> Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). <i>Animals Yr 2</i> <i>Humans Yr 2 x2</i> <i>Wriggle & Crawl x2</i> Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. <i>How do germs spread?</i></p>	<p>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. <i>Predator! x5</i> <i>What do owls eat?</i> <i>Animals including Humans Yr 3</i> Identify that humans and some other animals have skeletons and muscles for support, protection and movement. <i>Predator!</i> <i>What are our joints for?</i> <i>Animals including Humans Yr 3 x2</i></p>	<p>Describe the simple functions of the basic parts of the digestive system in humans. <i>Burps, Bottoms & Bile</i> <i>What is spit for?</i> Identify the different types of teeth in humans and their simple functions. <i>Burps, Bottoms & Bile x3</i> <i>How does toothpaste protect teeth?</i> Construct and interpret a variety of food chains, identifying producers, predators and prey. <i>Blue Abyss</i></p>	<p>Describe the changes as humans develop to old age. <i>Time Traveller x4</i> <i>Animal including Humans Yr 5</i> <i>Do we slow down as we get older?</i></p>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. <i>Blood Heart x3</i> <i>What's in blood?</i> <i>Animals including Humans Yr 6</i> Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. <i>Blood Heart x2</i> <i>What can your heart rate tell you?</i> <i>Animals including Humans Yr 6</i> Describe the ways in which nutrients and water are transported within</p>
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WOODVALE PRIMARY ACADEMY

	<p>amphibians, reptiles, birds and mammals, including pets).</p> <p><i>Animals Yr 1</i> <i>Can you leap like a frog?</i></p> <p><i>Humans Yr 1</i> <i>Paws, Claws & Whiskers x2</i></p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p><i>Humans Yr 1</i> <i>What can our hands do?</i> <i>What can worms sense?</i></p>	<p><i>Humans Yr 2</i> <i>Wriggle & Crawl</i></p>				<p>animals, including humans.</p> <p><i>Blood Heart x2</i> <i>Animals including Humans Yr 6</i> <i>What's in blood?</i></p>
Everyday Materials	<p>Distinguish between an object and the material from which it is made.</p> <p><i>Everyday Materials Yr 1</i></p>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal,</p>				



WOODVALE PRIMARY ACADEMY

	<p><i>Moon Zoom</i> Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. <i>Everyday Materials Yr 1</i></p> <p><i>Moon Zoom</i> Describe the simple physical properties of a variety of everyday materials. <i>Everyday Materials Yr 1</i></p> <p><i>How does it feel?</i> <i>Moon Zoom</i> <i>What keeps us dry?</i> Compare and group together a variety of everyday materials on the basis of their simple physical properties. <i>Moon Zoom!</i> <i>Everyday Materials Yr 1</i> <i>How does it feel?</i></p>	<p>plastic, glass, brick, rock, paper and cardboard for particular uses. <i>Can water make music?</i> <i>Uses of Everyday Materials Yr 2</i> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. <i>Uses of Everyday Materials Yr 2</i></p>				
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WOODVALE PRIMARY ACADEMY

	<i>What keeps us dry?</i>					
Seasonal Changes	Observe changes across the four seasons. <i>Seasonal Changes Yr 1</i> <i>Splendid Skies</i> Observe and describe weather associated with the seasons and how day length varies. <i>How big is a raindrop?</i> <i>How wild is the wind?</i> <i>Seasonal Changes Yr 1 x2</i> <i>Splendid Skies x2</i>					
Living Things and their Habitats		Explore and compare the differences between things that are living, dead, and things that have never been alive. <i>Will it degrade?</i>		Recognise that living things can be grouped in a variety of ways. <i>Blue Abyss x2</i> <i>Are all sea creatures the same? x2</i> <i>Living things and their habitats Yr 4</i>	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. <i>Sow, Grow & Farm x3</i>	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-



WOODVALE PRIMARY ACADEMY

		<p><i>Living things and their habitats Yr 2</i> 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. <i>Where do snails live?</i> <i>Living things and their habitats Yr 2</i> <i>Wriggle & Crawl</i> Identify and name a variety of plants and animals in their habitats, including microhabitats. <i>Animals Yr 2</i> <i>Living things and their habitats Yr 2</i> <i>Plants Yr 2</i></p>		<p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. <i>Blue Abyss x2</i> <i>Are all sea creatures the same? x2</i> <i>Living things and their habitats Yr 4</i> Recognise that environments can change and that this can sometimes pose dangers to living things. <i>Blue Abyss</i> <i>How does pollution affect habitats?</i> <i>Misty Mountains, Winding River x2</i> <i>Living things and their habitats Yr 4</i> <i>x2</i></p>	<p><i>Animals including Humans Yr 5</i> Describe the life process of reproduction in some plants and animals. <i>Sow, Grow & Farm x3</i> <i>Time Traveller</i> <i>Animals including Humans Yr 5</i></p>	<p>organisms, plants and animals. <i>Darwin's Delights</i> <i>Frozen Kingdom x3</i> <i>Why are things classified?</i> <i>Where do wild plants grow best?</i> Give reasons for classifying plants and animals based on specific characteristics. <i>Why are things classified?</i> <i>Frozen Kingdoms</i></p>
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WOODVALE PRIMARY ACADEMY

		<p><i>Where do snails live?</i> <i>Wriggle & Crawl</i> 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.</p> <p><i>Animals Yr 2</i> <i>Living things and their habitats Yr 2</i> <i>Wriggle & Crawl</i> <i>What is the lifecycle of a ladybird?</i></p>				
Rocks			<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p><i>Rocks, Relics & Rumbles</i> Recognise that soils are made from</p>			



WOODVALE PRIMARY ACADEMY

			<p>rocks and organic matter. <i>Rocks, Relics & Rumbles</i></p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock. <i>Predator!</i> <i>Rocks, Relics & Rumbles</i></p>			
Light			<p>Recognise that they need light in order to see things and that dark is the absence of light. <i>Urban Pioneers</i> <i>Why do cats eyes glow at night?</i> <i>Light Yr 3</i></p> <p>Notice that light is reflected from surfaces. <i>Urban Pioneers</i></p>			<p>Recognise that light appears to travel in straight lines. <i>How does light travel?</i> <i>Tomorrow's World</i> <i>Light Yr 6</i></p> <p>Use the idea that light travels in straight lines to explain that objects are seen because</p>



WOODVALE PRIMARY ACADEMY

			<p><i>Why do cats eyes glow at night?</i> <i>Light Yr 3</i> Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. <i>Urban Pioneers</i> <i>Why do shadows change?</i> <i>Light Yr 3</i> Recognise that shadows are formed when the light from a light source is blocked by a solid (opaque) object. <i>Urban Pioneers</i> <i>Why do shadows change?</i> <i>Light Yr 3</i> Find patterns in the way that the size of shadows change. <i>Urban Pioneers</i> <i>Why do shadows change?</i> <i>Light Yr 3</i></p>			<p>they give out or reflect light into the eye. <i>Tomorrow's World</i> <i>Can you see through it?</i> <i>How have eyes evolved?</i> <i>Light Yr 6</i> 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. <i>Tomorrow's World</i> <i>Can you see through it? x2</i> <i>How have eyes evolved?</i> <i>Light Yr 6</i> Use the idea that light travels in straight lines to explain why shadows have the same shape as the</p>
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WOODVALE PRIMARY ACADEMY

						objects that cast them. <i>How does light travel?</i> <i>Light Yr 6</i>
Forces and Magnets			Compare how things move on different surfaces. <i>Mighty Metals</i> <i>Forces and Magnets</i> <i>Yr 3</i> Notice that some forces need contact between two objects, but magnetic forces can act at a distance. <i>Mighty Metals x2</i> <i>Forces and Magnets</i> <i>Yr 3</i> <i>How mighty are magnets?</i> Observe how magnets attract or repel each other and attract some		Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. <i>Stargazers</i> <i>Forces Yr 5</i> Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. <i>Stargazers</i> <i>Forces Yr 5</i> Recognise that some mechanisms, including levers, pulleys and gears,	



WOODVALE PRIMARY ACADEMY

			<p>materials and not others. <i>Mighty Metals x2</i> <i>How mighty are magnets?</i> <i>Forces and Magnets Yr 3</i></p> <p>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. <i>Mighty Metals x2</i> <i>How mighty are magnets?</i> <i>Forces and Magnets Yr 3</i></p> <p>Describe magnets as having two poles. <i>Mighty Metals x2</i> <i>Why do magnets attract and repel?</i> <i>x2</i> <i>Forces and Magnets Yr 3</i></p>		<p>allow a smaller force to have a greater effect. <i>Forces Yr 5</i></p>	
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WOODVALE PRIMARY ACADEMY

			<p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p><i>Mighty Metals x2</i> <i>Why do magnets attract and repel?</i> <i>X2</i> <i>Forces and Magnets</i> <i>Yr 3</i></p>			
States of Matter				<p>Compare and group materials together, according to whether they are solids, liquids or gases.</p> <p><i>How do smells get up your nose?</i> <i>States of Matter Yr 4</i></p> <p>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at</p>		



WOODVALE PRIMARY ACADEMY

				<p>which this happens in degrees Celsius (°C).</p> <p><i>How do smells get up your nose?</i></p> <p><i>States of Matter Yr 4</i></p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p><i>Misty Mountain, Winding River</i></p>		
Sound				<p>Identify how sounds are made, associating some of them with something vibrating.</p> <p><i>Playlist x2</i></p> <p><i>Sound Yr 4</i></p> <p>Recognise that vibrations from sounds travel</p>		



WOODVALE PRIMARY ACADEMY

				<p>through a medium to the ear. <i>Playlist x2</i> <i>Sound Yr 4</i> Find patterns between the pitch of a sound and features of the object that produced it. <i>Playlist</i> <i>How far can sound travel?</i> <i>Sound Yr 4</i> Find patterns between the volume of a sound and the strength of the vibrations that produced it. <i>Playlist</i> <i>How far can sound travel?</i> <i>Sound Yr 4</i> Recognise that sounds get fainter as the distance from the sound source increases.</p>		
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WOODVALE PRIMARY ACADEMY

				<i>Playlist</i> <i>How far can sound travel?</i> <i>Sound Yr 4</i>	
Electricity				Identify common appliances that run on electricity. <i>How do plugs work?</i> <i>Electricity Yr 4</i> Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. <i>What conducts electricity?</i> <i>Electricity Yr 4</i> Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. <i>Tomorrow's World Electricity Yr 6</i> 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. <i>Electricity Yr 6</i> Use recognised symbols when representing a



WOODVALE PRIMARY ACADEMY

				<p>simple series circuit. <i>What conducts electricity?</i> <i>Electricity Yr 4</i> 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. <i>Electricity Yr 4</i> Recognise some common conductors and insulators, and associate metals with being good conductors. <i>How do plugs work?</i> <i>What conducts electricity?</i> <i>Electricity Yr 4</i></p>		<p>simple circuit in a diagram. <i>Tomorrow's World x2</i> <i>Electricity Yr 6</i></p>
Properties and Changes of Materials					Compare and group together everyday materials	



WOODVALE PRIMARY ACADEMY

					<p>on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.</p> <p><i>Alchemy Island Properties and Changes of Materials Yr 5</i></p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p><i>Alchemy Island Properties and Changes of Materials Yr 5</i></p> <p>Use knowledge of solids, liquids and</p>	
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WOODVALE PRIMARY ACADEMY

					<p>gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p><i>Alchemy Island</i> <i>Can you clean dirty water?</i></p> <p><i>Pproperties and Changes of Materials Yr 5</i></p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p><i>Stargazers</i> <i>Properties and Changes of Materials Yr 5</i></p> <p>Demonstrate that dissolving, mixing and changes of</p>	
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WOODVALE PRIMARY ACADEMY

					<p>state are reversible changes.</p> <p><i>Can you clean dirty water?</i></p> <p><i>Will it erupt?</i></p> <p><i>Properties and Changes of Materials Yr 5</i></p> <p>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.</p> <p><i>Can you clean dirty water?</i></p> <p><i>Will it erupt?</i></p> <p><i>Properties and Changes of Materials Yr 5</i></p>	
Earth and Space					Describe the movement of the	



WOODVALE PRIMARY ACADEMY

					<p>Earth, and other planets, relative to the Sun in the solar system. <i>Earth and Space Yr 5</i> <i>How does the moon move?</i> <i>Stargazers</i> Describe the movement of the Moon relative to the Earth. <i>Earth and Space Yr 5</i> <i>How does the moon move?</i> <i>Stargazers</i> Describe the Sun, Earth and Moon as approximately spherical bodies. <i>Earth and Space Yr 5</i> <i>Stargazers</i> <i>How do we know the Earth is round?</i> Use the idea of the Earth's rotation to</p>	
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WOODVALE PRIMARY ACADEMY

					explain day and night and the apparent movement of the sun across the sky. <i>Stargazers Earth and Space Yr 5 Can we track the sun?</i>	
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. <i>Darwin's Delights x4 Evolution and Inheritance Yr 6 x2 How have eyes evolved?</i> Recognise that living things



WOODVALE PRIMARY ACADEMY

						<p>produce offspring of the same kind, but normally offspring vary and are not identical to their parents <i>Darwin's Delights x3</i> <i>Evolution and Inheritance x2</i></p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <i>Darwin's Delights x3</i> <i>Frozen Kingdom x2</i> <i>Evolution and Inheritance Yr 6</i> <i>Where do wild plants grow best?</i> <i>Why do birds have different beaks?</i></p>
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WOODVALE PRIMARY ACADEMY