

Science Knowledge Progression

Science	Skill	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Scientific knowledge and understanding of Plants							
Introduction to plants (structure and function)	B1	<p>I know a variety of common plants.</p> <p>I know that deciduous trees lose their leaves seasonally, but evergreen do not.</p> <p>I know the basic structure of a variety of common plants.</p>		<p>I know the functions of the basic parts of a plant and the relationship between structure and function.</p> <p>I know that water is transported within a plant from the root, through the stem, to the leaves.</p>			
	B2	<p>I know how plants grow and change over time.</p>	<p>I know that seeds and bulbs grow into seedlings by producing roots and shoots.</p> <p>I know that seedlings grow into mature plants by developing parts, that may include stems/trunks, leaves, flowers and fruits.</p> <p>I know that seeds need water to germinate.</p> <p>I know that plants need water, light and a suitable temperature for growth and health.</p>	<p>I know that plants need water, light, air, nutrients/fertilizer and a suitable temperature for growth and health.</p> <p>I know that the needs for growth and health vary from plant to plant.</p>			

Plant reproduction and life cycle	B3			<p>I know the life cycle of a plant from seed to mature plant.</p> <p>I know that flowers are the reproductive organ of a plant.</p> <p>To know that the process of pollination is the transfer of pollen to the female (part of the) flower.</p> <p>I know that the process of seed formation is the growth of a seed after pollination/fertilisation.</p> <p>I know some different methods of seed dispersal and the benefits of each.</p>			
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Scientific knowledge and understanding of Animals, including humans

Animal growth	B4	<p>I know a variety of common animals (including fish, amphibians, reptiles, birds and mammals).</p>	<p>I know how living things change, and that animals have offspring that grow into adults.</p> <p>I know which offspring comes from which parent animal.</p> <p>I know the stages in some animal life cycles.</p>			<p>I know how to describe the human life cycle, including the stages of growth and development (baby, toddler, child, teenager, adult, elderly).</p> <p>I know the changes that occur during puberty (in boys and girls).</p> <p>I know that gestation periods vary across mammals.</p>	
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Animal structure and function</p>	<p>B5</p>	<p>I know the main body parts of common animals (arms, legs, wings, tails, fins, head, trunk, horns/tusks, shell).</p> <p>I know key parts of the human body (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth).</p> <p>I know the five main senses: sight, smell, hearing, taste and touch.</p> <p>I know that eyes are used for sight, the nose is used for smell, ears are used for hearing, the tongue and mouth are used for taste and the skin is used for touch.</p>		<p>I know that animals can be grouped based on the presence of a skeleton.</p> <p>I know that the skeleton in humans and some animals is used for movement, protection and support.</p> <p>I know that the muscular system in humans and some animals works with the skeleton for movement.</p> <p>I know the main bones in the body.</p>	<p>I know the main organs of the human digestive system (mouth, teeth, tongue, oesophagus, stomach, small and large intestines) and describe their simple functions.</p> <p>I know the different types of human teeth (incisor, canine, premolar and molar) and their simple functions.</p>		<p>I know the main parts of the human circulatory system (heart, blood vessels and blood).</p> <p>I know that the heart pumps blood around the body.</p> <p>I know that the blood vessels transport blood around the body.</p> <p>I know that the blood transports vital substances around the body, including oxygen and nutrients.</p> <p>I understand the relationships between different organ systems.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Health and Nutrition</p>	<p>B6</p>	<p>I know that a carnivore is an animal that eats other animals and can give some examples.</p> <p>I know that a herbivore is an animal that eats only plants and can give examples.</p> <p>I know that an omnivore is an animal that eats both animals and plants and can give examples.</p>	<p>I know that animals, including humans, need water, food and air to survive.</p> <p>I understand the importance of exercise, a balanced diet and hygiene for humans.</p>	<p>I know that animals, including humans, need the right types and amount of nutrition.</p> <p>I understand that humans cannot make their own food and therefore eat to get the nutrition needed.</p> <p>I know the main food groups (carbohydrates, protein, fats, fibre, vitamins, minerals and water) and their simple functions.</p> <p>I know that a balanced diet should include all food groups and can describe the diets of different animals.</p>	<p>I know that teeth can be damaged, including the effect of sugary and acidic food.</p> <p>I know that it is important to brush teeth twice a day, make good food choices and visit the dentist regularly.</p> <p>I can describe the teeth of carnivores and herbivores, and understand why they are different.</p> <p>I know that predators hunt for their food and prey are the animals being hunted.</p> <p>I know that producers make their own food.</p>		<p>I understand the impact of diet, exercise, drugs and lifestyle on the way a body functions.</p> <p>I know that the heart rate is the number of beats per minute and breathing rate is the number of breaths per minute.</p> <p>I know that exercise increases heart and breathing rates.</p>

					I know that food chains begin with a producer followed by consumers, and arrows to show the energy passed on.		
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Scientific knowledge and understanding of Living things and their habitats

Characteristics of living things	B7		<p>I am beginning to understand some of the life processes, including movement, reproduction, sensitivity, growth, excretion and nutrition.</p> <p>I know the difference between things that are living, dead, and things that have never been alive, using some of the life processes.</p>		<p>I know that living things can be grouped in different ways.</p> <p>I know that a classification key can be used to group and identify plants and animals.</p> <p>I know that vertebrates are animals which have a backbone and invertebrates are animals which do not have a backbone.</p> <p>I know that plants can be grouped into flowering or non-flowering varieties.</p> <p>I know that flowering plants include grasses and non-flowering plants includes ferns and mosses.</p> <p>I know that there are five main vertebrate groups: birds, mammals, reptiles, amphibians and fish.</p> <p>I know that invertebrate groups include snails, slugs, worms, spiders and insects.</p>		<p>I know that 'organism' is a term used to refer to an individual living thing.</p> <p>I know that micro-organisms are incredibly small and cannot usually be seen by the naked eye.</p> <p>I know the characteristics of the different groups of vertebrates and commonly found invertebrates.</p>

Variation and inheritance	B8		I know a variety of plants and animals and describe some differences.			<p>I know that a life cycle shows the changes an animal or plant goes through until the reproduction of a new generation when the cycle starts again.</p> <p>I know that all living things must reproduce for the species to survive.</p> <p>I know that sexual reproduction requires two parents, whereas asexual reproduction only requires one parent.</p> <p>I know that there are different processes plants and animals use to reproduce (asexual and sexual reproduction).</p>	<p>I know that living things have changed over time.</p> <p>I know that fossils provide us with information about living things that inhabited the Earth millions of years ago.</p> <p>I know that characteristics are passed from parents to their offspring, but that all offspring vary from their parents.</p> <p>I know that over time, variation in offspring can affect animals' chances of survival in particular environments.</p>

Habitats and interdependence	B9		<p>I can name a variety of habitats, including woodland, ocean, rainforest and seashore.</p> <p>I know that a habitat is the environment where an animal or plant lives/ grows, because it provides what they need to survive.</p> <p>I know that a micro-habitat is a very small habitat (e.g. stones, logs and leaf litter).</p> <p>I know that living things depend upon each other (e.g. for food, shelter.)</p> <p>I understand that a food chain can be used to show how animals obtain food from eating either plants and/or other animals.</p>				<p>I know that animals and plants have adapted to suit their environment over many millions of years and that this process can be called evolution.</p>