

Willow Year B Autumn 1	Prior Knowledge	Knowledge to be explicitly taught	How the knowledge will be built on
Substantive Knowledge	<p>In Maple:</p> <ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • Talk about criteria for grouping, sorting and classifying; and use simple keys • Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations • Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them 	<p>In Sycamore:</p> <p>Animals inc humans teeth (Year 4)</p> <ul style="list-style-type: none"> • Identify the different types of teeth in humans and their simple functions <p>Sound stringed instruments (year 4)</p>
Disciplinary Knowledge	<ul style="list-style-type: none"> • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals 	<p>Animals inc humans year 3</p> <ul style="list-style-type: none"> • Food nutrition, use of muscles, bones. • 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. 	<p>Identify how sounds are made, associating some of them with something vibrating</p> <ul style="list-style-type: none"> • 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
VOCAB	<ul style="list-style-type: none"> • 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. 	<p>skeleton, skull, bones, muscles, movement, support, protection, nutrients, absorb</p>	<ul style="list-style-type: none"> • 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
Learning Objective	<ol style="list-style-type: none"> 1. To know where different animals get their nutrition from (<i>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>) 2. To know what food keeps humans healthy (<i>They might research different food groups and how they keep us healthy, and design meals based on what they find out.</i>) 3. To compare and contrast the diets of different animals (<i>including their pets and decide ways of grouping them according to what they eat</i>) 4. To know that humans and some other animals have skeletons 5. To group animals to those that do and do not have skeletons (<i>explore what might happen if humans did not have skeletons</i>) 6. To know that humans and some other animals have muscles for support, protection and movement. 		

Willow Year B Autumn 2	Prior Knowledge	Knowledge to be explicitly taught	How the knowledge will be built on
Substantive Knowledge		<ul style="list-style-type: none"> • Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations • Make systematic and careful observations • Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used 	
Disciplinary Knowledge		Rocks and soils- EXT enquiry questions (see NC) year 3 <ul style="list-style-type: none"> • 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. 	
VOCAB		soils, organic matter, fossil, crystals, sandstone, granite, marble, pumice absorbent, crumble sedimentary, layer, sediment igneous, magma, lava, gas bubbles (tiny holes/spaces) metamorphic , change, squeeze, pressure	
Learning Objective	<ol style="list-style-type: none"> 1. To carefully observe different rocks (Observing rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time; using a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them.) 2. To compare and group different rocks 3. To research and discuss the different kinds of living things in fossils 4. To understand how fossils are formed. 5. To explore and compare different soils 6. To know that soils are made from rocks and organic matter (investigate what happens when rocks are rubbed together or what changes occur when they are in water) 		

Willow Year B Spring 1 and 2	Prior Knowledge	Knowledge to be explicitly taught	How the knowledge will be built on
Substantive Knowledge	Forces and magnets are not taught until year 3. They do compare everyday materials in year 1 and 2.	<ul style="list-style-type: none"> • Set up simple practical enquiries, comparative and fair tests • Recognise when a simple fair test is necessary and help to decide how to set it up • Make systematic and careful observations • Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used 	In Sycamore: <ul style="list-style-type: none"> • 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.
Disciplinary Knowledge		Forces and magnets year 3 <ul style="list-style-type: none"> • 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. 	
VOCAB		force, contact, surface, magnetic, attract, repel, poles	
Learning Objective	<ol style="list-style-type: none"> 1. To compare how objects move on different surfaces (Comparing how different things move and grouping them; raising questions and carrying out tests to find out how far things move on different surfaces, and gathering and recording data to find answers to their questions) 2. To Set up simple practical enquiries, comparative and fair tests with support (investigate how to make a ramp to make the toy roll fastest?) 3. To Set up simple practical enquiries, comparative and fair tests independently (To investigate how to make a ramp to make the toy roll Slowest?) 4. To notice that some forces need contact between two objects 5. To know that a magnetic force can act at a distance 6. To investigate magnetic and non-magnetic materials (sorting materials into those that are magnetic and those that are not) 7. To observe how magnets attract and repel each other 8. To know that magnets have two poles 9. To predict whether two magnets will attract or repel each other (looking for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another) 10. Which magnet is the strongest? (exploring the strengths of different magnets and finding a fair way to compare them) 		

	11. To identify uses of magnets (identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.)
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Willow Year B Summer 1	Prior Knowledge	Knowledge to be explicitly taught	How the knowledge will be built on
Substantive Knowledge	Light is not explicitly taught in the curriculum until year 3. Children who are only with you in this year need to also understand: <ul style="list-style-type: none"> Recognise that they need light in order to see things and that dark is the absence of light 	<ul style="list-style-type: none"> Set up simple practical enquiries, comparative and fair tests Recognise when a simple fair test is necessary and help to decide how to set it up Make systematic and careful observations Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used 	In Oak: Light (Year 6) Learning to lead to making a periscope <ul style="list-style-type: none"> Recognise that light appears to travel in straight lines
Disciplinary Knowledge	and that dark is the absence of light	Light in sc1	<ul style="list-style-type: none"> 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
VOCAB	<ul style="list-style-type: none"> 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 changes. 	oral and written explanations, conclusion, predictions, criteria, classify, changes, data, contrast, evidence, improve, secondary sources,, construct, i – relevant question equipment – thermometer, data – gather, standard units, record, classify, present record – drawings, labelled diagrams, bar charts, tables	<ul style="list-style-type: none"> 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.
Learning Objective	<ol style="list-style-type: none"> To understand what a fair test is To make careful observations to explain what happens when light reflects off of a mirror with support (Pupils should explore what happens when light reflects off a mirror or other reflective surfaces). To make careful observations to explain what happens when light reflects off of a mirror independently (playing mirror games to help them to answer questions about how light behaves.) To make simple decisions about what simple equipment they might use in an experiment (to measure shadows of different heighted people) To Set up simple practical enquiries, comparative and fair tests with support (looking for patterns in what happens to shadows when the light source moves) To Set up simple practical enquiries, comparative and fair tests independently (looking for patterns in what happens to shadows when the distance between the light source and the object changes) 		

Willow Year B Summer 2	Prior Knowledge	Knowledge to be explicitly taught	How the knowledge will be built on
Substantive Knowledge	<p>The children have not done a living things in their habitats topic before but they have covered a plants topic and an animals including humans in Maple Class Animals inc humans Year 1 and 2</p> <p>Use different animals:</p> <ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • Asking simple questions and recognising that they can be answered in different ways • Observing closely, using simple equipment • Identifying and classifying • Ask people questions and use simple secondary sources to find answers • Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations 	<p>In Sycamore: Living things and their habitats Year 4</p> <p>Classify animals- Effects of nature reserves and population + development</p> <ul style="list-style-type: none"> • Construct and interpret a variety of food chains, identifying producers, predators and prey.
Disciplinary Knowledge	<ul style="list-style-type: none"> • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. • 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. 	<p>Living things and their habitats year 2 – use diff animals and micro habitats to woodpeckers.</p> <ul style="list-style-type: none"> • 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 micro-habitats • 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. 	<ul style="list-style-type: none"> • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • Recognise that living things can be grouped in a variety of ways
VOCAB	<p>Plants Yr 1</p> <ul style="list-style-type: none"> • 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. <p>Plants year 2 – what plants need to grow how seeds grow into plants</p> <p>Observe and describe how seeds and bulbs grow into mature plants</p> <ul style="list-style-type: none"> • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<p>living, dead, habitat, microhabitat, woodland, meadow, hedgerow, pond</p>	<ul style="list-style-type: none"> • 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.
Learning Objective			<ol style="list-style-type: none"> 1. To explore things that are living, dead, and things that have never been alive ('is a flame alive? Is a deciduous tree dead in winter?') 2. To compare things that are living, dead and have never been alive 3. To know why habitats are important to animals and plant 4. Identify and name a variety of plants and animals in their habitats: pond and ocean 5. Identify and name a variety of plants and animals in their habitats: rainforests and urban 6. To describe how animals obtain their food from plants and other animals

	1. To show how animals obtain their food from plants and other animals using a food chain
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