

## Science Curriculum Plan

Barford School

### Year 1 and 2

#### **Cycle B**    **Yr 23-4**

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

<b>Term</b>	<b>National Curriculum objectives</b>	<b>Working Scientifically and guidance</b>	<b>Key vocabulary</b>
<b>Autumn 1</b>	<p style="text-align: center; color: green;"><b>Plants and growth</b></p> <ul style="list-style-type: none"> <li>• observe and describe how seeds and bulbs grow into mature plants</li> <li>• find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul> <p style="color: red;"><b>Links to Cycle A Year 3 and 4 Plants</b></p>	<p>Pupils should use the local environment throughout the year to observe how different plants grow. Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as to the processes of reproduction and growth in plants.</p> <p><b>Note: Seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them.</b></p> <p>Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.</p>	<p><b>Seeds, bulbs, water, light, temperature, growth.</b></p>
<b>Autumn 2</b>	<p style="text-align: center; color: blue;"><b>Everyday materials</b></p> <ul style="list-style-type: none"> <li>• distinguish between an object and the material from which it is made</li> <li>• identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>• describe the simple physical properties of a variety of everyday materials</li> </ul>	<p>Pupils should explore and experiment with a wide variety of materials, not only those listed in the programme of study, but including for example: brick, paper, fabrics, elastic, foil.</p> <p>Pupils might work scientifically by: performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'</p>	<p><b>Wood, plastic, glass, paper, water, metal, rock, hard, soft, bendy, rough, smooth.</b></p>

	<ul style="list-style-type: none"> <li>compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul> <p><b>Links to Cycle A Year 3 and 4 Forces and Magnets</b></p>		
<b>Spring 1</b>	<p><b>Seasonal changes</b></p> <ul style="list-style-type: none"> <li>observe changes across the 4 seasons</li> <li>observe and describe weather associated with the seasons and how day length varies.</li> </ul>	<p>Pupils should observe and talk about changes in the weather and the seasons.  <b>Note: Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.</b>  Pupils might work scientifically by: making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change.</p>	<p>Summer, Spring, Autumn, Winter, sun, day, moon, night, light, dark.</p> <p>Difference from Cycle B – Concentrate on Spring/Summer</p>
<b>Spring 2</b>	<p><b>Animals</b></p> <ul style="list-style-type: none"> <li>identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals</li> <li>identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> </ul> <p><b>Links to Cycle A Year 3 and 4 Animals, including humans</b></p>	<p>Pupils should use the local environment throughout the year to explore and answer questions about animals in their habitat. They should understand how to take care of animals taken from their local environment and the need to return them safely after study. Pupils should become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets.  Pupils might work scientifically by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat.</p>	<p>Fish, reptiles, mammals, birds, amphibians (and examples of each type of animal), herbivore, carnivore, omnivore, leg, arm, elbow, head, ear, nose, back, wings, beak.</p> <p>Difference from Cycle B – concentrate on common, local animals that children will be more familiar with.</p>
<b>Summer 1</b>	<p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>explore and compare the differences between things that are living, dead, and</li> </ul>	<p>Pupils should be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. They should raise and answer questions that help them to become familiar</p>	<p>Living, dead, habitat, micro-habitat, energy, food chain, predator, prey, woodland, pond, desert.</p>

	<p>things that have never been alive</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>• 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.</li> </ul> <p><b>Links to Cycle A Year 3 and 4 Animals, including humans</b></p>	<p>with the life processes that are common to all living things. Pupils should be introduced to the terms 'habitat' (a natural environment or home of a variety of plants and animals) and 'micro-habitat' (a very small habitat, for example for woodlice under stones, logs or leaf litter). They should raise and answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat and observe how living things depend on each other, for example, plants serving as a source of food and shelter for animals. Pupils should compare animals in familiar habitats with animals found in less familiar habitats, for example, on the seashore, in woodland, in the ocean, in the rainforest.</p> <p>Pupils might work scientifically by: sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. They should describe how they decided where to place things, exploring questions for example: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food chain that includes humans (e.g. grass, cow, human). They could describe the conditions in different habitats and micro-habitats (under log, on stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there.</p>	
<p><b>Summer 2</b></p>	<p><b>Humans – senses and health</b></p> <ul style="list-style-type: none"> <li>• find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>• describe the importance for humans of exercise, eating</li> </ul>	<p>Pupils should be introduced to the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans. They should also be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth;</p>	<p><b>Human, senses, hearing, sight, smell, taste, touch, survival, water, food, air, exercise, hygiene, ear, eye, mouth, hand.</b></p>

	<p>the right amounts of different types of food, and hygiene.</p> <ul style="list-style-type: none"> <li>identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> </ul> <p><b>Links to Cycle A Year 3 and 4 Animals, including humans</b></p>	they should not be expected to understand how reproduction occurs	<b>Difference from cycle B – focus on the senses and body parts used for senses</b>
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## Year 1 and 2

### **Cycle A Yr 22-3**

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

<b>Term</b>	<b>National Curriculum objectives</b>	<b>Working Scientifically and guidance</b>	<b>Key vocabulary</b>
<b>Autumn 1</b>	<p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals</li> <li>identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> </ul> <p><b>Links to Cycle B Year 3 and 4 Animals, including humans</b></p>	<p>Pupils should use the local environment throughout the year to explore and answer questions about animals in their habitat. They should understand how to take care of animals taken from their local environment and the need to return them safely after study. Pupils should become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets.</p> <p>Pupils might work scientifically by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells.</p>	<p><b>Fish, reptiles, mammals, birds, amphibians (and examples of each), herbivore, carnivore, omnivore, leg, arm, elbow, head, ear, nose, back, wings, beak</b></p> <p><b>Difference from Cycle A – start with common, local animals and then look at exotic animals/animals from different countries and climates</b></p>
<b>Autumn 2</b>	<b>Seasonal changes</b>	Pupils should observe and talk about changes in the weather and the seasons.	<b>Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark</b>

	<ul style="list-style-type: none"> <li>observe changes across the 4 seasons</li> <li>observe and describe weather associated with the seasons and how day length varies.</li> </ul>	<p><b>Note: Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.</b></p> <p>Pupils might work scientifically by: making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change.</p>	<p>Difference from Cycle A – concentrate on Autumn/Winter</p>
<p><b>Spring 1</b></p>	<p><b>Uses of everyday materials</b></p> <ul style="list-style-type: none"> <li>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses</li> <li>compare how things move on different surfaces.</li> <li>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul> <p><b>Links to Cycle A Year 1 and 2 Everyday materials</b></p>	<p>Pupils should identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass). They should think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials. Pupils might find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.</p> <p>Pupils might work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations.</p>	<p>Hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, waterproof, absorbent, opaque, transparent, brick, paper, fabrics, squashing, bending, twisting, stretching, elastic, foil.</p>
<p><b>Spring 2</b></p>	<p><b>Plants</b></p> <ul style="list-style-type: none"> <li>observe and describe how seeds and bulbs grow into mature plants</li> </ul>	<p>Pupils should use the local environment throughout the year to explore and answer questions about plants growing in their habitat. Where possible, they should observe the growth of flowers and vegetables that they have planted. They should become familiar</p>	<p>Deciduous, evergreen trees, leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem.</p>

	<ul style="list-style-type: none"> <li>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul> <p><b>Links to Cycle A Year 3 and 4 Plants</b></p>	<p>with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem).</p> <p>Pupils might work scientifically by: observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees. Pupils might keep records of how plants have changed over time, for example the leaves falling off trees and buds opening; and compare and contrast what they have found out about different plants.</p>	
<p><b>Summer 1</b></p>	<p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>notice that animals, including humans, have offspring which grow into adults</li> <li>find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> </ul> <p><b>Links to Cycle B Year 3 and 4 Animals, including humans</b></p>	<p>Pupils should be introduced to the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans. They should also be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs.</p> <p>The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child, teenager, adult. Pupils might work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.</p>	<p><b>Adult, baby, offspring, human, animal, kitten, calf, puppy, survival, water, air, food.</b></p> <p><b>Difference from Cycle A – focus on basic needs of animals, opportunity for a class pet?</b></p>

<p><b>Summer 2</b></p>	<p><b>Humans – body parts</b></p> <ul style="list-style-type: none"> <li>identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul> <p><b>Links to Cycle B Year 3 and 4 Animals, including humans</b></p>	<p>Pupils should have plenty of opportunities to learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes.</p>	<p><b>Skeleton, arm, leg, head, elbow, knee, ear, eye, nose, mouth, foot, wrist, ankle</b></p> <p><b>Difference from cycle A – look at human body parts and then recap senses and the body parts associated with each sense.</b></p>
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**Cycle B Yr 23-4**Year 3 and 4

<b>Term</b>	<b>National Curriculum objectives</b>	<b>Working Scientifically</b>	<b>Key vocabulary</b>
<b>Autumn 1</b>	<p style="text-align: center;"><b>Electricity</b></p> <ul style="list-style-type: none"> <li>• identify common appliances that run on electricity</li> <li>• construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>• 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</li> <li>• recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>• recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul> <p><b>Links to Cycle A Year 5 and 6 Properties and changes of materials</b></p>	<p>Pupils should construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices. Pupils should draw the circuit as a pictorial representation, <b>not necessarily using conventional circuit symbols at this stage; these will be introduced in year 6. Note: Pupils might use the terms current and voltage, but these should not be introduced or defined formally at this stage.</b> Pupils should be taught about precautions for working safely with electricity. Pupils might work scientifically by: observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.</p>	<p><b>Cells, wires, bulbs, switches, buzzers, battery, circuit, series, conductors, insulators.</b></p>
<b>Autumn 2</b>	<p style="text-align: center;"><b>Forces and Magnets</b></p> <ul style="list-style-type: none"> <li>• compare how things move on different surfaces</li> <li>• notice that some forces need contact between two objects,</li> </ul>	<p>Pupils should observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). They should explore the behaviour and</p>	<p><b>Magnetic, force, contact, attract, repel, friction, poles, push, pull.</b></p>



	<p>but magnetic forces can act at a distance</p> <ul style="list-style-type: none"> <li>• observe how magnets attract or repel each other and attract some materials and not others</li> <li>• 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</li> <li>• describe magnets as having two poles</li> <li>• predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul> <p><b>Links to Cycle A Year 5 and 6 Properties and changes of Materials</b></p>	<p>everyday uses of different magnets (for example, bar, ring, button and horseshoe). Pupils might work scientifically by: 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 their questions; exploring the strengths of different magnets and finding a fair way to compare them; sorting materials into those that are magnetic and those that are not; 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; identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.</p>	
<b>Spring 1</b>	<p><b>Animals, including humans (food chains – predator and prey)</b></p> <ul style="list-style-type: none"> <li>• construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul> <p><b>Links to Cycle A Year 1 and 2 Living Things and their Habitats</b></p>	<p>Pupils look at a range of common plants and animals. They learn about what producers, consumers, prey and predators are. They construct a number of simple food chains.</p>	<p><b>Food chain, producer, consumer, predator, prey, herbivore, carnivore, omnivore.</b></p>
<b>Spring 2</b>	<p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>• describe the simple functions of the basic parts of the digestive system in humans</li> <li>• identify the different types of teeth in humans and their simple functions</li> </ul>	<p>Pupils should be introduced to the main body parts associated with the digestive system, for example, mouth, tongue, teeth, oesophagus, stomach and small and large intestine and explore questions that help them to understand their special functions. Pupils might work scientifically by: comparing the teeth of carnivores and herbivores, and suggesting reasons for differences; finding out what damages teeth and how to look after</p>	<p><b>Mouth, tongue, teeth, oesophagus, stomach, small intestine, large intestine, herbivore, carnivore, canine, incisor, molar.</b></p>

	<b>Links to Cycle B Year 5 and 6 Animals, including humans - circulation</b>	them. They might draw and discuss their ideas about the digestive system and compare them with models or images.	
<b>Summer 1</b>	<p style="text-align: center;"><b>Plants</b></p> <ul style="list-style-type: none"> <li>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>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</li> <li>investigate the way in which water is transported within plants</li> <li>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul> <p><b>Links to Cycle A Year 1 and 2 Plants and Growth</b></p>	<p>Pupils should be introduced to the relationship between structure and function: the idea that every part has a job to do. They should explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction.</p> <p><b>Note: Pupils can be introduced to the idea that plants can make their own food, but at this stage they do not need to understand how this happens.</b></p> <p>Pupils might work scientifically by: comparing the effect of different factors on plant growth, for example, the amount of light, the amount of fertiliser; discovering how seeds are formed by observing the different stages of plant life cycles over a period of time; looking for patterns in the structure of fruits that relate to how the seeds are dispersed. They might observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.</p>	<b>Air, light, water, nutrients, soil, reproduction, transportation, dispersal, pollination, flower.</b>
<b>Summer 2</b>	<p style="text-align: center;"><b>Rocks, soils and fossils</b></p> <ul style="list-style-type: none"> <li>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>recognise that soils are made from rocks and organic matter.</li> </ul>	<p>Linked with work in geography, pupils should explore different kinds of rocks and soils, including those in the local environment.</p> <p>Pupils might work scientifically by: 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. Pupils might research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. Pupils</p>	<b>Fossils, soils, sandstone, granite, marble, pumice, crystals, absorbent.</b>

	<b>Links to Cycle B Year 5 and 6 Evolution and Inheritance - fossils</b>	could explore different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they are in water. They can raise and answer questions about the way soils are formed.	
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**Cycle A Yr 22-3**

Year 3 and 4

<b>Term</b>	<b>National Curriculum objectives</b>	<b>Working Scientifically and guidance</b>	<b>Key vocabulary</b>
<b>Autumn 1</b>	<p style="text-align: center;"><b>Light</b></p> <ul style="list-style-type: none"> <li>• recognise that they need light in order to see things and that dark is the absence of light</li> <li>• notice that light is reflected from surfaces</li> <li>• recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>• recognise that shadows are formed when the light from a light source is blocked by an opaque object</li> <li>• find patterns in the way that the size of shadows change.</li> </ul> <p><b>Links to Cycle B Year 5 and 6 Light</b></p>	<p>Pupils should explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. They should think about why it is important to protect their eyes from bright lights. They should look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change.  <b>Note: Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.</b></p> <p>Pupils might work scientifically by: looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.</p>	<b>Light, shadows, mirror, reflective, dark, reflection.</b>

<p><b>Autumn 2</b></p>	<p><b>Animals, including humans</b>  <b>Recap prior learning from Year 1 and 2 Humans – body parts (Cycle B) and introduce more body parts</b></p> <ul style="list-style-type: none"> <li>identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul> <p><b>Links to Cycle B Year 5 and 6 Animals including humans - circulation</b></p>	<p>Pupils should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions. Pupils might work scientifically by: identifying and grouping animals with and without skeletons and observing and comparing their movement; exploring ideas about what would happen if humans did not have skeletons.</p>	<p><b>Movement, muscles, bones, skull, nutrition, skeletons.</b></p>
<p><b>Spring 1</b></p>	<p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>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</li> </ul> <p><b>Links to Cycle A Year 5 and 6 Animals, including Humans</b></p>	<p>Pupils should continue to learn about the importance of nutrition. Pupils might work scientifically by: They might compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. They might research different food groups and how they keep us healthy and design meals based on what they find out.</p>	<p><b>Animals, humans, nutrition, food, diet, grouping, healthy.</b></p>
<p><b>Spring 2</b></p>	<p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>recognise that living things can be grouped in a variety of ways</li> <li>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul> <p><b>Links to Cycle A Year 5 and 6 Living Things and their habits - classification</b></p>	<p>Pupils should use the local environment throughout the year to raise and answer questions that help them to identify and study plants and animals in their habitat. They should identify how the habitat changes throughout the year. Pupils should explore possible ways of grouping a wide selection of living things that include animals and flowering plants and non-flowering plants. Pupils could begin to put vertebrate animals into groups such as fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects.  <b>Note: Plants can be grouped into categories such as flowering plants (including grasses) and non-flowering plants, such as ferns and mosses.</b></p>	<p><b>Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, snails, slugs, worms, spiders, insects, environment, habitats, change, danger, living things.</b></p>

		<p>Pupils should explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation.</p> <p>Pupils might work scientifically by: using and making simple guides or keys to explore and identify local plants and animals; making a guide to local living things; raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched.</p>	
<b>Summer 1</b>	<p style="text-align: center;"><b>Sound</b></p> <ul style="list-style-type: none"> <li>• identify how sounds are made, associating some of them with something vibrating</li> <li>• recognise that vibrations from sounds travel through a medium to the ear</li> <li>• find patterns between the pitch of a sound and features of the object that produced it</li> <li>• find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>• recognise that sounds get fainter as the distance from the sound source increases.</li> </ul>	<p>Pupils should explore and identify the way sound is made through vibration in a range of different musical instruments from around the world; and find out how the pitch and volume of sounds can be changed in a variety of ways.</p> <p>Pupils might work scientifically by: finding patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. They might make earmuffs from a variety of different materials to investigate which provides the best insulation against sound. They could make and play their own instruments by using what they have found out about pitch and volume.</p>	<b>Volume, vibration, wave, pitch, tone, speaker.</b>
<b>Summer 2</b>	<p style="text-align: center;"><b>States of Matter</b></p> <ul style="list-style-type: none"> <li>• compare and group materials together, according to whether they are solids, liquids or gases</li> <li>• observe that some materials change state when they are</li> </ul>	<p>Pupils should explore a variety of everyday materials and develop simple descriptions of the states of matter (solids hold their shape; liquids form a pool not a pile; gases escape from an unsealed container). Pupils should observe water as a solid, a liquid and a gas</p>	<b>Solid, liquid, gas, evaporation, condensation, particles, temperature, freezing, heating.</b>

	<p>heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</p> <ul style="list-style-type: none"> <li>• identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul> <p><b>Links to Cycle A and B Year 5 and 6 Properties and Changes of Materials</b></p>	<p>and should note the changes to water when it is heated or cooled.</p> <p><b>Note: Teachers should avoid using materials where heating is associated with chemical change, for example, through baking or burning.</b></p> <p>Pupils might work scientifically by: grouping and classifying a variety of different materials; exploring the effect of temperature on substances such as chocolate, butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party). They could research the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. They might observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing drying or snowmen melting.</p>	
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**Cycle B Yr 23-4**

Year 5 and 6

<b>Term</b>	<b>National Curriculum objectives</b>	<b>Working Scientifically and guidance</b>	<b>Key vocabulary</b>
<p><b>Autumn 1</b></p>	<p><b>Properties and changes of materials</b></p> <ul style="list-style-type: none"> <li>• know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>• use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>• demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>• 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.</li> </ul> <p><b>Links to Cycle B Year 3 and 4 States of Matter</b></p>	<p>Pupils should build a more systematic understanding of materials by exploring and comparing the properties of a broad range of materials, including relating these to what they learnt about magnetism in year 3 and about electricity in year 4. They should explore reversible changes, including, evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes. Pupils should explore changes that are difficult to reverse, for example, burning, rusting and other reactions, for example, vinegar with bicarbonate of soda. They should find out about how chemists create new materials, for example, Spencer Silver, who invented the glue for sticky notes or Ruth Benerito, who invented wrinkle-free cotton.</p> <p><b>Note: Pupils are not required to make quantitative measurements about conductivity and insulation at this stage. It is sufficient for them to observe that some conductors will produce a brighter bulb in a circuit than others and that some materials will feel hotter than others when a heat source is placed against them. Safety guidelines should be followed when burning materials.</b></p> <p>Pupils might work scientifically by: They could observe and compare the changes that take place, for example, when burning different materials or baking bread or</p>	<p>Materials, properties, changes, solid, liquid, gas, dissolve, substance, solution, mixture, separated, reversible, irreversible, filter, sieve, evaporate,</p>

		cakes. They might research and discuss how chemical changes have an impact on our lives, for example, cooking, and discuss the creative use of new materials such as polymers, super-sticky and super-thin materials.	
<b>Autumn 2</b>	<p style="text-align: center;"><b>Forces</b></p> <ul style="list-style-type: none"> <li>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul> <p><b>Links to Cycle A Year 3 and 4 Forces and Magnets</b></p>	<p>Pupils should explore falling objects and raise questions about the effects of air resistance. They should explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall. They should experience forces that make things begin to move, get faster or slow down. Pupils should explore the effects of friction on movement and find out how it slows or stops moving objects, for example, by observing the effects of a brake on a bicycle wheel. Pupils should explore the effects of levers, pulleys and simple machines on movement. Pupils might find out how scientists, for example, Galileo Galilei and Isaac Newton helped to develop the theory of gravitation. Pupils might work scientifically by: exploring falling paper cones or cup-cake cases, and designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective. They might explore resistance in water by making and testing boats of different shapes. They might design and make products that use levers, pulleys, gears and/or springs and explore their effects.</p>	<b>Air resistance, water resistance, friction, gravity, newton, gears, pulleys</b>
<b>Spring 1</b>	<p style="text-align: center;"><b>Earth and Space</b></p> <ul style="list-style-type: none"> <li>describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> </ul>	<p>Pupils should be introduced to a model of the Sun and Earth that enables them to explain day and night. Pupils should learn that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter,</p>	<b>Earth, sun, moon, axis, rotation, day, night, phases of the moon, star, constellation</b>



	<ul style="list-style-type: none"> <li>describe the movement of the Moon relative to the Earth</li> <li>describe the Sun, Earth and Moon as approximately spherical bodies</li> <li>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li> </ul>	<p>Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006). They should understand that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).</p> <p><b>Note: Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.</b></p> <p>Pupils should find out about the way that ideas about the solar system have developed, understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as Ptolemy, Alhazen and Copernicus. Pupils might work scientifically by: comparing the time of day at different places on the Earth through internet links and direct communication; creating simple models of the solar system; constructing simple shadow clocks and sundials, calibrated to show midday and the start and end of the school day; finding out why some people think that structures such as Stonehenge might have been used as astronomical clocks.</p>	
Spring 2	<p>Animals, including humans – lifestyle</p> <ul style="list-style-type: none"> <li>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> </ul> <p><b>Links to Cycle A Year 3 and 4 Animals, including humans</b></p>	<p>Pupils should learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body.</p> <p>Pupils might work scientifically by: exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.</p>	Bodies, healthy, damage, drugs, diet, exercise, lifestyle, function, health, substances, harm.
Summer 1	<p>Living things – classification</p> <ul style="list-style-type: none"> <li>describe how living things are classified into broad groups</li> </ul>	Pupils should build on their learning about grouping living things in year 4 by looking at the classification system in more detail.	Classification, vertebrates, invertebrates, micro-organisms,

	<p>according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</p> <ul style="list-style-type: none"> <li>• give reasons for classifying plants and animals based on specific characteristics.</li> </ul> <p><b>Links to Cycle B Year 3 and 4 Living things and their habitats</b></p>	<p>They should be introduced to the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Through direct observations where possible, they should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). They should discuss reasons why living things are placed in one group and not another. Pupils might find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.</p> <p>Pupils might work scientifically by: using classification systems and keys to identify some animals and plants in the immediate environment. They could research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.</p>	<p><b>amphibians, reptiles, mammals, insects.</b></p>
<p><b>Summer 2</b></p>	<p><b>Living things and their habitats – life cycles and reproduction</b></p> <ul style="list-style-type: none"> <li>• describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>• describe the life process of reproduction in some plants and animals.</li> </ul> <p><b>Links to Cycle B Year 3 and 4 Living Things and their habitats</b></p>	<p>Pupils should study and raise questions about their local environment throughout the year. They should observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. Pupils should find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals.</p> <p>Pupils might work scientifically by: observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the</p>	<p><b>Mammal, reproduction, insect, amphibian, bird, offspring.</b></p>

		oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. They might observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow.	
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### **Cycle A Yr 22-3**

#### Year 5 and 6

<b>Term</b>	<b>National Curriculum objectives</b>	<b>Working Scientifically</b>	<b>Key vocabulary</b>
<b>Autumn 1</b>	<p style="text-align: center;"><b>Electricity</b></p> <p><b>Children in Year 4 will draw circuits pictorially, introduce conventional circuit symbols in this unit.</b></p> <ul style="list-style-type: none"> <li>• associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>• 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</li> <li>• use recognised symbols when representing a simple circuit in a diagram.</li> </ul>	<p>Building on their work in year 4, pupils should construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. They should learn how to represent a simple circuit in a diagram using recognised symbols. <b>Note: Pupils are expected to learn only about series circuits, not parallel circuits. Pupils should be taught to take the necessary precautions for working safely with electricity.</b></p> <p>Pupils might work scientifically by: systematically identifying the effect of changing one component at a time in a circuit; designing and making a set of traffic lights, a burglar alarm or some other useful circuit.</p>	<p>Cells, wires, bulbs, switches, buzzers, battery, circuit, series, conductors, insulators, amps, volts.</p>

<p><b>Autumn 2</b></p>	<p><b>Animals, including humans – circulation</b></p> <ul style="list-style-type: none"> <li>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul> <p><b>Links to Cycle B Year 3 and 4 Animals, including humans</b></p>	<p>Pupils should build on their learning from years 3 and 4 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them to understand how the circulatory system enables the body to function.</p>	<p>Circulatory, heart, blood, vessels, veins, arteries, oxygenated, deoxygenated, valve, nutrients, water, transportation, animals, humans.</p>
<p><b>Spring 1</b></p>	<p><b>Properties and changes of materials</b></p> <ul style="list-style-type: none"> <li>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</li> <li>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> </ul> <p><b>Links to Cycle A Year 3 and 4 Forces and Magnets</b></p>	<p>Pupils might work scientifically by: carrying out tests to answer questions, for example, 'Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it melting, or for making blackout curtains?' They might compare materials in order to make a switch in a circuit.</p>	<p>Hardness, solubility, transparency, electrical conductivity, magnet, response, thermal conductivity, materials, wood, plastic.</p>
<p><b>Spring 2</b></p>	<p><b>Animals including humans – changes, growth and development</b></p> <ul style="list-style-type: none"> <li>describe the changes as humans develop to old age.</li> </ul> <p><b>Links to Cycle B Year 3 and 4 Animals, including humans</b></p>	<p>Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes experienced in puberty. Pupils could work scientifically by researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows.</p>	<p>Foetus, embryo, womb, gestation, baby, toddler, teenager, elderly, growth, development, puberty.</p>
<p><b>Summer 1</b></p>	<p><b>Light</b></p> <ul style="list-style-type: none"> <li>recognise that light appears to travel in straight lines</li> <li>use the idea that light travels in straight lines to explain that objects</li> </ul>	<p>Pupils should build on the work on light in year 3, exploring the way that light behaves, including light sources, reflection and shadows. They should talk about what happens and make predictions.</p>	<p>Refraction, reflection, light, spectrum, rainbow, colour.</p>

	<p>are seen because they give out or reflect light into the eye</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul> <p><b>Links to Cycle B Year 3 and 4 Light</b></p>	<p>Pupils might work scientifically by: deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. They might investigate the relationship between light sources, objects and shadows by using shadow puppets. They could extend their experience of light by looking a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters (they do not need to explain why these phenomena occur).</p>	
<p><b>Summer 2</b></p>	<p><b>Evolution and inheritance</b></p> <ul style="list-style-type: none"> <li>• recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>• recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>• identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul> <p><b>Links to Cycle A Year 3 and 4 Rocks, soils and fossils</b></p>	<p><b>Building on what they learned about fossils in the topic on rocks in year 3, pupils should find out more about how living things on earth have changed over time.</b></p> <p>They should be introduced to the idea that characteristics are passed from parents to their offspring, for instance by considering different breeds of dogs, and what happens when, for example, labradors are crossed with poodles. They should also appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer, or the development of insulating fur on the arctic fox. Pupils might find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution. <b>Note: At this stage, pupils are not expected to understand how genes and chromosomes work.</b></p>	<p><b>Fossils, adaptation, evolution, characteristics, reproduction, genetics.</b></p>

We have thought carefully about the sequence in which our science knowledge is taught, as detailed below.

## Key Stage One

### **Cycle B**

<b>Term</b>	<b>Year 1 and 2</b>	<b>Why this? Why then?</b>
<b>Autumn 1</b>	Plants and growth	Pupils will learn about what plants need to grow and stay healthy. Pupils can look at plants in the local environment to explore which plants grow in Autumn. They can grow their own plants and vegetables to embed their learning. Timed for best weather opportunities for outdoors.
<b>Autumn 1</b>	Everyday materials	Pupils should become familiar with the names/properties of materials. Pupils will explore a range of materials in the classroom and the local area.
<b>Spring 1</b>	Seasonal changes	Pupils should observe and talk about changes in the weather/seasons. Pupils can look at the seasonal changes between Winter > Spring. This introduces Summer geography topic of weather and seasons which will then consolidate learning.
<b>Spring 2</b>	Animals	Pupils will learn about animals in their local environment. This will provide them with a good breadth of knowledge about common animals, including looking at animals that are carnivores, herbivores and omnivores. Pupils will learn about common animals that are born in spring to put their learning in a relevant context.
<b>Summer 1</b>	Living things and their habitats	Pupils will be introduced to habitats for the first time. They will look at the differences between living and dead animals and plants. Pupils will expand on their learning from Spring 2 by looking at animals that live in different habitats to their local environment e.g. seashores, rainforests,
<b>Summer 2</b>	Humans – senses and health Seasonal changes	Pupils should observe and talk about changes in the weather/seasons. Pupils can look at the seasonal changes between Spring > Summer. Furthering learning from Spring one and linking to Geography topic. Pupils will focus on the five senses and body parts that are used for senses. In Cycle B, they will look at all human body parts, recapping the body parts linked to different senses.

### **Cycle A**

<b>Term</b>	<b>Year 1 and 2</b>	<b>Why this? Why then?</b>
<b>Autumn 1</b>	Animals, including humans	In Cycle A, pupils learned about common animals in their local environment. Pupils will now focus on exotic animals/animals from different countries and climates.
<b>Autumn 2</b>	Seasonal changes	Pupils should observe and talk about changes in the weather/seasons. Pupils can look at the seasonal changes between Autumn > Winter
<b>Spring 1</b>	Uses of everyday materials	
<b>Spring 2</b>	Plants Seasonal changes	Pupils should observe and talk about changes in the weather/seasons. Pupils can look at the seasonal changes between Autumn > Spring.
<b>Summer 1</b>	Animals, including humans	Pupils can observe explore wildlife in their natural habitats around school e.g. in forest school.
<b>Summer 2</b>	Humans – body parts Seasonal changes	Pupils should observe and talk about changes in the weather/seasons. Pupils can look at the seasonal changes between Spring > Summer.

### **Lower Key Stage Two**

#### **Cycle B**

<b>Term</b>	<b>Year 3 and 4</b>	<b>Why this? Why then?</b>
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<b>Autumn 1</b>	<b>Electricity</b>	Pupils will be introduced to electricity this term, which will then be revisited in Year 5 and 6. They will learn about components in simple circuits and draw circuits. This will provide them with a foundation for learning in Year 6, where conventional circuit symbols will be introduced.
<b>Autumn 2</b>	<b>Forces and Magnets</b>	Children will learn about different metals and explore which metals are magnetic/non-magnetic. This builds on from previous work in Year 1 and 2 where pupils classified materials, including metals. This unit will provide a basis for work in Year 5 and 6 on Forces.
<b>Spring 1</b>	<b>Animals, including humans (food chains – predator and prey)</b>	Revisits work from Year 1 and 2 on herbivores, carnivores and omnivores. Pupils will learn about apex predators, predatory plants and insects. Pupils will start to learn about the physical attributes of predators (skeletal systems) as a basis for their learning in Year 5 and 6 about evolution.
<b>Spring 2</b>	<b>Animals, including humans</b>	Pupils will build on work from Year 1 and 2 where they were looking at human body parts and be able to describe the simple functions of the basic parts of the digestive system in humans. Pupils will identify the different types of teeth in humans and their simple functions. They will look at the teeth of predators.
<b>Summer 1</b>	<b>Plants</b>	Pupils will revisit learning from Year 1 and 2 where they looked at the parts of a plants. Pupils will look at the relationship between the structure and functions of the parts of a plant.
<b>Summer 2</b>	<b>Rocks, soils and fossils</b>	Pupils will learn about natural disasters and different types of rocks and fossils. Links to Art for observation and drawing of fossils.

### **Cycle A**

<b>Term</b>	<b>Year 3 and 4</b>	<b>Why this? Why then?</b>
<b>Autumn 1</b>	<b>Light</b>	This will follow on from work in Year 1 and 2 on seasonal changes. Pupils will learn about sun safety/not looking directly at the sun or other bright lights. Pupils will build on from work in Year 1 where they have looked at opacity and will learn about how



		shadows are formed when a light source is blocked by an opaque object.
<b>Autumn 2</b>	Animals, including humans	Pupils will recap prior learning from Year 1 and 2 on simple body parts. More body parts will be introduced and they will find out about how different parts of the body have special functions. They will focus on skeletal and muscular systems after prior learning in Year 3 and 4 on the digestive system. This will provide the basis for learning in Year 5 and 6 on how the circulatory system enables the body to function.
<b>Spring 1</b>	Animals, including humans	Pupils will build on their learning from Year 1 and 2 about what animals including humans eat and food groups. They will continue to learn about the importance of a healthy diet. This will give them the opportunity to consolidate learning in Year 3/4 Cycle A where they learnt about food chains and how animals, unlike plants, cannot make their own food. Links to topic book 'Stone Age Boy'.
<b>Spring 2</b>	Living things and their habitats	Children look at the water cycle and look at physical geography in the local area. They will be able to study plants and animals in the local area and reinforce their learning on seasonal changes from Year 1 and 2. They will start to look at human impact on environments, starting with positive and negative impacts in the local area. Links to topic book 'Big Blue Whale' and Geography study of local area.
<b>Summer 1</b>	Sound	Pupils will build on their learning from Year 1 and 2 about the uses of materials. They will make their own instruments, exploring how materials of different sizes and thicknesses can affect the pitch and volume of sounds. They will make earmuffs, investigating which materials provide the best insulation against sound.
<b>Summer 2</b>	States of Matter	Pupils will have a good foundation of knowledge and understanding about materials and the uses of everyday materials from Year 1 and 2. They will progress to compare and grouping materials into solids, liquids and gases. They will learn about materials changing state and observing water as a solid, liquid and gas and how it changes when it is heated or cooled. This will lead on to work on the water cycle.

## Upper Key Stage Two

### **Cycle B**

Term	Year 5 and 6	Why this? Why then?
Autumn 1	Properties and changes of materials	Pupils will explore and compare the properties of a broad range of materials, linking to their prior learning about on states of matter in Year 3 and 4. They will embed their learning on states of matter by looking at reversible changes.
Autumn 2	Forces	Pupils will build on their learning in Year 3 and 4 on Forces and Magnets where they explored magnetism and friction.
Spring 1	Earth and Space	Children will revisit prior learning in Year 3 and 4 on Light and sun safety by learning about why we have night and day.
Spring 2	Animals, including humans - lifestyle	Pupils will build on prior learning in Years 1 and 2, and 3 and 4 about how to keep their bodies healthy. They will learn about how their bodies can be damaged by recognising the impact of drugs and other substances. They will look at the impact that a diet that is not balanced might have on the body and the importance of exercise. They will learn about the spread of diseases and the introduction of modern medicine.
Summer 1	Living things - classification	Pupils will build on their learning in Year 4 by looking at the classification system in more detail.' Children will look at crops in the local area and use classification systems and keys to identify both animals and plants in the immediate environment.
Summer 2	Living things and their habitats – life cycles and reproduction	Pupils will learn about different types of reproduction in both plants and animals.

### **Cycle A**

Term	Year 5 and 6	Why this? Why then?
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<b>Autumn 1</b>	<b>Electricity</b>	Pupils will recap learning from Year 4, where they drew circuits pictorially, and be introduced to conventional circuit symbols, using them to draw diagrams.
<b>Autumn 2</b>	<b>Animals, including humans - circulation</b>	Pupils will build on work from Year 3 and 4 on the digestive and skeletal systems. They will look at the human circulatory system and describe the functions of the heart, blood vessels and blood.
<b>Spring 1</b>	<b>Properties and changes of materials</b>	Pupils will compare and group together everyday materials based on their properties including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. This provides the opportunity to embed all their previous learning on materials, uses of materials and states of matter.
<b>Spring 2</b>	<b>Animals, including humans – changes, growth and development</b>	Building on prior work in both Years 1 and 2, and 3 and 4, pupils will describe the changes as humans develop to old age. This will build on their prior work on life cycles in humans and animals.
<b>Summer 1</b>	<b>Light</b>	Pupils will build on work on light from Year 3 and 4. They will explore the way that light behaves, including light sources, reflection and shadows. Completing this work in the summer term allows for experiments regarding light and shadows at different times of day. They should talk about what happens and make predictions.
<b>Summer 2</b>	<b>Evolution and inheritance</b>	Pupils will build on their work from Key Stage 1 about living and non-living things including things that are alive, things that are dead and things that have never been alive. They will also build on learning in Year 3 about fossils and rocks. Pupils will find out more about how living things on earth have changed over time.

