

Carr Hill Community Primary School









Upper Key Stage Two

Science Mapping



Science Cycle One Whole School Mapping NC Objectives Upper KS2

Cycle 1

Year 5 & 6	<u>Prior Learning</u> These should be considered in flash backs / core 4 / revised where topic not covered for long time	<u>Fabulous Food</u> Biology Animals, Including Humans 	<u>Exploring Hinduism</u> Physics Electricity 	<u>Journey to Space</u> Physics Earth and Space 	<u>What was it like to be a soldier in WW1?</u> Chemistry Materials 	<u>Relationships</u> Biology Living thing and their habitats 	<u>Greeks</u> Physics Light 	
Autumn 1	<p>In LKS2, children should:</p> <ul style="list-style-type: none"> Identify that animals, including humans, need the right types and amount of nutrition, and they cannot make their own food; they get their nutrition from what they eat. Know how nutrients, water and oxygen are transported within animals and humans. Know about the importance of a nutritious, balanced diet. Identify that humans and some other animals have skeletons and muscles for support, protection and movement. Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. 	National Curriculum Objectives					Flash Backs	
		<p><u>Fabulous Food Biology</u> Animals, Including Humans</p> <ul style="list-style-type: none"> Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Y6 Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Y6 Describe the ways in which nutrients and water are transported within animals, including humans. Y6 					<ul style="list-style-type: none"> LKS2 Cycle 2 Summer 2 and LKS2 Cycle 1 Autumn 1– Human body – skeleton, digestive system, teeth Healthy living – PSHE? Is this needed? Cycle 1 Aut1 	
		<p><u>Key Learning</u></p> <ul style="list-style-type: none"> The heart pumps blood in the blood vessels around to the lungs. Oxygen goes into the blood and carbon dioxide is removed. The blood goes back to the heart and is then pumped around the body. Nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed. As they are used, they produce carbon dioxide and other waste products. Carbon dioxide is carried by the blood back to the heart and then the cycle starts again as it is transported back to the lungs to be removed from the body. This is the human circulatory system. Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. They can affect how well our heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think, and generally how fit and well we feel. Some conditions are caused by deficiencies in our diet e.g. lack of vitamins. This content is also included in PSHE. 						
		<p><u>Working Scientifically</u> Skills to be taught</p> <p>Use their scientific experiences to explore ideas and raise questions.</p> <ul style="list-style-type: none"> Recognise which secondary sources will be the most useful Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar, line or scatter graphs. Report and present findings from enquiries using detailed scientific language. Decide how to record data from a choice of familiar approaches. Choose the best way to present data. Can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms. Use evidence to justify ideas and conclusions. 						

		<ul style="list-style-type: none"> • Identify scientific evidence that has been used to support and refute ideas. • Use test results to make predictions and set up further tests. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. • Make their own decisions about what observations to make, how long to make them for and whether to repeat them. • Choose equipment and explain how to use it accurately. • Take accurate and precise measurements- N g kg mm cm mins secs. 	
<p>Autumn 2</p>	<p>In LKS2, children should:</p> <ul style="list-style-type: none"> • Identify common appliances that run on electricity. • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • Identify whether a lamp will light in a simple series circuit, based on whether the lamp is part of a complete loop with a battery. • Recognise that a switch opens and closes the circuit and associate this with whether a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors. • Know the difference between a conductor and an insulator, giving examples of each. • Safety when using electricity. 	<p><u>Exploring Hinduism</u> Physics Electricity</p> <ul style="list-style-type: none"> • Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Y6 • 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. Y6 • Use recognised symbols when representing a simple circuit in a diagram. Y6 <p><u>Key Learning</u></p> <ul style="list-style-type: none"> • Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound. If you use a battery with a higher voltage, the same thing happens. Adding more bulbs to a circuit will make each bulb less bright. Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter. Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow. Any bulbs, motors or buzzers will then turn off as well. • You can use recognised circuit symbols to draw simple circuit diagrams. <p><u>Working Scientifically</u> Skills to be taught</p> <ul style="list-style-type: none"> • Use their scientific experiences to explore ideas and raise questions. • Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) • Recognise which secondary sources will be the most useful • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. • Make their own decisions about what observations to make, how long to make them for and whether to repeat them. • Choose equipment and explain how to use it accurately. • Take accurate and precise measurements- N g kg mm cm mins secs. 	<ul style="list-style-type: none"> • LKS2 Cycle 1 Spring 2 • Simple circuits • Conductors and insulators

<p>Spring 1</p>	<p>In Key Stage 1 and in LKS2 children should:</p> <ul style="list-style-type: none"> • Understand changes in weather patterns and seasons. • Compare how things move on different surfaces. • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Describe magnets as having two poles. Predict whether two magnets with attract or repel each other, depending on which poles are facing 	<p><u>Journey to Space</u> Physics Earth and Space</p> <ul style="list-style-type: none"> • Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Y5 • Describe the movement of the Moon relative to the Earth. Y5 • Describe the Sun, Earth and Moon as approximately spherical bodies. Y5 • Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the Sun across the sky. Y5 • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Y5 <p><u>Key Learning</u></p> <ul style="list-style-type: none"> • The Sun is a star. It is at the centre of our solar system. There are 8 planets (can choose to name them, but not essential). These travel around the Sun in fixed orbits. Earth takes 365¼ days to complete its orbit around the Sun. The Earth rotates (spins) on its axis every 24 hours. As Earth rotates half faces the Sun (day) and half is facing away from the Sun (night). As the Earth rotates, the Sun appears to move across the sky. The Moon orbits the Earth. It takes about 28 days to complete its orbit. The Sun, Earth and Moon are approximately spherical. <p><u>Working Scientifically</u> Skills to be taught</p> <ul style="list-style-type: none"> • Use their scientific experiences to explore ideas and raise questions. • Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) • Recognise which secondary sources will be the most useful • Make and explain predictions using scientific language and begin to support with scientific evidence. • Report and present findings from enquiries using detailed scientific language. 	<ul style="list-style-type: none"> • LKS2 Cycle 1 Autumn 2 • Shadows and light • Sunlight can be dangerous • Light can be reflected
<p>Spring 2</p>	<p>In KS1 children should:</p> <ul style="list-style-type: none"> • Distinguish between an object and the material from which it is made. • Identify and name a variety of everyday materials, including wood, metal, plastic, glass, water and rock, • Describe the simple physical properties of a variety of everyday materials. • Compare and group together a variety of everyday materials based on their simple properties. • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Find out how shapes of solid objects made from some materials can be 	<p><u>What was it like to be a soldier in WW1?</u> Chemistry Materials</p> <ul style="list-style-type: none"> • 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. Y5 • Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. Y5 <p><u>Key Learning</u></p> <ul style="list-style-type: none"> • Materials have different uses depending on their properties and state (liquid, solid, gas). Properties include hardness, transparency, electrical and thermal conductivity and attraction to magnets. Some materials will dissolve in a liquid and form a solution while others are insoluble and form sediment. <p><u>Working Scientifically</u> Skills to be taught</p> <ul style="list-style-type: none"> • Use their scientific experiences to explore ideas and raise questions. • Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) • Recognise which secondary sources will be the most useful • Decide which variables to control and why. 	<ul style="list-style-type: none"> • LKS2 Cycle 2 Autumn 1 • States of matter – solid, liquid, gas • LKS2 Cycle 1 Spring 2 • Conductors and insulators - metals • Magnets







	<p>changed by squashing, bending, twisting and stretching.</p>	<ul style="list-style-type: none"> • Make and explain predictions using scientific language and begin to support with scientific evidence. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar, line or scatter graphs. • Report and present findings from enquiries using detailed scientific language. • Decide how to record data from a choice of familiar approaches. • Choose the best way to present data. • Can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms. • Use evidence to justify ideas and conclusions. • Identify scientific evidence that has been used to support and refute ideas. • Use test results to make predictions and set up further tests. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. • Make their own decisions about what observations to make, how long to make them for and whether to repeat them. • Choose equipment and explain how to use it accurately. • Take accurate and precise measurements- N g kg mm cm mins secs. 	
<p>Summer 1</p>	<p>In LKS2 children should:</p> <ul style="list-style-type: none"> • Construct and interpret a variety of food chains, identifying producers, predators and prey • 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. • Recognise that living things can be grouped in a variety of ways. • 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 danger to living things. 	<p><u>Relationships</u> Biology Living things and their habitats.</p> <ul style="list-style-type: none"> • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Y5 <p><u>Key Learning</u></p> <ul style="list-style-type: none"> • As part of their life cycle, plants and animals reproduce. Most animals reproduce sexually. This involves two parents where the sperm from the male fertilises the female egg. Animals, including humans, have offspring which grow into adults. In humans and some animals, these offspring will be born live, such as babies or kittens, and then grow into adults. In other animals, such as chickens or snakes, there may be eggs laid that hatch to young which then grow to adults. Some young undergo a further change before becoming adults e.g. caterpillars to butterflies. This is called a metamorphosis. <p><u>Working Scientifically</u> Skills to be taught</p> <ul style="list-style-type: none"> • Use their scientific experiences to explore ideas and raise questions. • Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) • Use and develop keys and other information records to identify, classify and describe living things and materials. 	<ul style="list-style-type: none"> • Lifecycles – animals (including humans_ have offsprings that turn into adults • KS1 - Cycle 1 Autumn 1 / Cycle 1 Summer 1 • LKS2 - Cycle 1 Summer 2

<p>Summer 2</p>	<p>In LKS2 children should:</p> <ul style="list-style-type: none"> • Recognise that they need light in order to see things and that dark is the absence of light. • 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 sizes of shadows change. 	<p><u>Greeks Physics</u> Light</p> <ul style="list-style-type: none"> • Recognise that light appears to travel in straight lines. Y6 • 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. Y6 • 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. Y6 • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. Y6 	<ul style="list-style-type: none"> • LKS2 – Autumn 2 Cycle 1 – Light • Reflection and shadows
		<p><u>Key Learning</u></p> <ul style="list-style-type: none"> • Light appears to travel in straight lines, and we see objects when light from them goes into our eyes. The light may come directly from light sources, but for other objects some light must be reflected from the object into our eyes for the object to be seen. • Objects that block light (are not fully transparent) will cause shadows. Because light travels in straight lines the shape of the shadow will be the same as the outline shape of the object. 	
		<p><u>Working Scientifically</u> Skills to be taught</p> <ul style="list-style-type: none"> • Use their scientific experiences to explore ideas and raise questions. • Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) • Recognise which secondary sources will be the most useful • Make and explain predictions using scientific language and begin to support with scientific evidence. • Make their own decisions about what observations to make, how long to make them for and whether to repeat them. • Choose equipment and explain how to use it accurately. • Take accurate and precise measurements- N g kg mm cm mins secs. 	



Science Cycle One Whole School Mapping
NC Objectives
Upper KS2

Cycle 2

Year 5 & 6	<p align="center"><u>Prior Learning</u></p> <p>These should be considered in flash backs / core 4 / revised where topic not covered for long time</p>	<p align="center"><u>Famous Biology</u></p> <p align="center">Evolution and Inheritance</p> 	<p align="center"><u>Mayans Chemistry</u></p> <p align="center">Properties and Changes in Materials</p> 	<p align="center"><u>Asia Physics</u></p> <p align="center">Forces</p> 	<p align="center"><u>Vikings Chemistry</u></p> <p align="center">Properties and Changes in Materials</p> 	<p align="center"><u>Plants Biology</u></p> <p align="center">Living Things and Their Habitats</p> 	<p align="center"><u>Sporting Champions Biology</u></p> <p align="center">Animals, including Humans</p> 
Autumn 1	<p>From Key Stage 1 & LKS2, children should:</p> <ul style="list-style-type: none"> • Understand there is a variety of life on Earth • Know that some animal's differences are important to their survival • Know how animals and plants reproduce • Know how fossils form over time 	National Curriculum Objectives					<p align="center">Flash Backs</p> <ul style="list-style-type: none"> • Rocks – fossils (LKS2 Cycle 1 Spring 1) • Living things – changing environments (LKS2 Cycle 1 Summer 1) • Offspring (Cycle 1 Summer 2)
<p><u>Famous Biology</u> Evolution and Inheritance</p> <ul style="list-style-type: none"> • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Y6 • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Y6 • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. Y6 							
<p><u>Key Learning</u></p> <ul style="list-style-type: none"> • All living things have offspring of the same kind, as features in the offspring are inherited from the parents. Due to sexual reproduction, the offspring are not identical to their parents and vary from each other. • Plants and animals have characteristics that make them suited (adapted) to their environment. If the environment changes rapidly, some variations of a species may not suit the new environment and will die. If the environment changes slowly, animals and plants with variations that are best suited survive in greater numbers to reproduce and pass their characteristics on to their young. Over time, these inherited characteristics become more dominant within the population. Over a very long period of time, these characteristics may be so different to how they were originally that a new species is created. This is evolution. • Fossils give us evidence of what lived on the Earth millions of year ago and provide evidence to support the theory of evolution. More recently, scientists such as Darwin and Wallace observed how living things adapt to different environments to become distinct varieties with their own characteristics. 							
<p><u>Working Scientifically</u> Skills to be taught</p> <ul style="list-style-type: none"> • Use their scientific experiences to explore ideas and raise questions. • Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) • Recognise which secondary sources will be the most useful • Make and explain predictions using scientific language and begin to support with scientific evidence. 							

		<ul style="list-style-type: none"> • Make their own decisions about what observations to make, how long to make them for and whether to repeat them. • Choose equipment and explain how to use it accurately. • Take accurate and precise measurements- N g kg mm cm mins secs. • Use and develop keys and other information records to identify, classify and describe living things and materials. 	
Autumn 2	<p>In LKS2 children should:</p> <ul style="list-style-type: none"> • Compare and group materials together, according to whether they are solids, liquids or gases. • Observe that some materials change state when heated or cooled, and measure and research the temperature at which this happens in degrees Celsius. • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<p><u>Mayans Chemistry</u> Properties and Changes in Materials</p> <ul style="list-style-type: none"> • Demonstrate that dissolving, mixing and changes of state are reversible changes. Y5 • 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. Y5 <p><u>Key Learning</u></p> <ul style="list-style-type: none"> • Some changes to materials such as dissolving, mixing and changes of state are reversible, but some changes such as burning wood, rusting and mixing vinegar with bicarbonate of soda result in the formation of new materials and these are not reversible. <p><u>Working Scientifically</u> Skills to be taught</p> <ul style="list-style-type: none"> • Use their scientific experiences to explore ideas and raise questions. • Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) • Decide which variables to control and why. • Make and explain predictions using scientific language and begin to support with scientific evidence. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar, line or scatter graphs. • Report and present findings from enquiries using detailed scientific language. • Decide how to record data from a choice of familiar approaches. • Choose the best way to present data. • Can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms. • Use evidence to justify ideas and conclusions. • Identify scientific evidence that has been used to support and refute ideas. • Use test results to make predictions and set up further tests. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. • Make their own decisions about what observations to make, how long to make them for and whether to repeat them. • Choose equipment and explain how to use it accurately. • Take accurate and precise measurements- N g kg mm cm mins secs. 	<ul style="list-style-type: none"> • States of matter (LKS2 Cycle 2 Autumn 1)

<p>Spring 1</p>	<p>In LKS2 children should:</p> <ul style="list-style-type: none"> • Compare how things move on different surfaces. • Know how a simple pulley works and use making lifting an object simpler • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Observe how magnets attract and repel each other and attract some materials and not others. • Compare and group together a variety of everyday materials based on whether they are attracted to a magnet and identify some magnetic materials. • Describe magnets as having two poles. • Predict whether two magnets with attract or repel each other, depending on which poles are facing 	<p><u>Asia Physics</u> Forces</p> <ul style="list-style-type: none"> • Identify the effects of air resistance, water resistance and friction that act between moving surfaces. Y5 • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. Y5 <p><u>Key Learning</u></p> <ul style="list-style-type: none"> • Air resistance, water resistance and friction are contact forces that act between moving surfaces. The object may be moving through the air or water, or the air and water may be moving over a stationary object. • A mechanism is a device that allows a small force to be increased to a larger force. The pay back is that it requires a greater movement. The small force moves a long distance and the resulting large force moves a small distance, e.g. a crowbar or bottle top remover. Pulleys, levers and gears are all mechanisms, also known as simple machines. <p><u>Working Scientifically</u> Skills to be taught</p> <ul style="list-style-type: none"> • Use their scientific experiences to explore ideas and raise questions. • Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) • Decide which variables to control and why. • Make and explain predictions using scientific language and begin to support with scientific evidence. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar, line or scatter graphs. • Report and present findings from enquiries using detailed scientific language. • Decide how to record data from a choice of familiar approaches. • Choose the best way to present data. • Can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms. • Use evidence to justify ideas and conclusions. • Identify scientific evidence that has been used to support and refute ideas. • Use test results to make predictions and set up further tests. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. • Make their own decisions about what observations to make, how long to make them for and whether to repeat them. • Choose equipment and explain how to use it accurately. • Take accurate and precise measurements- N g kg mm cm mins secs. 	<ul style="list-style-type: none"> • LKS2 Cycle 2 Spring 2 • Forces – different surfaces • Some forces need contact between two objects
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<p>Spring 2</p>	<ul style="list-style-type: none"> • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials) • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials) • 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. (Y3 - Forces and magnets) • Compare and group materials together, according to whether they are solids, liquids or gases. (Y4 - States of matter) • Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). (Y4 - States of matter) • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (Y4 - States of matter) 	<p><u>Vikings Chemistry</u> Properties and Changes in Materials</p> <ul style="list-style-type: none"> • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Y5 • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Y5 <p><u>Key Learning</u></p> <ul style="list-style-type: none"> • Materials have different uses depending on their properties and state (liquid, solid, gas). Properties include hardness, transparency, electrical and thermal conductivity and attraction to magnets. Some materials will dissolve in a liquid and form a solution while others are insoluble and form sediment. • Mixtures can be separated by filtering, sieving and evaporation. <p><u>Working Scientifically</u> Skills to be taught</p> <ul style="list-style-type: none"> • Use their scientific experiences to explore ideas and raise questions. • Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) • Decide which variables to control and why. • Make and explain predictions using scientific language and begin to support with scientific evidence. • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar, line or scatter graphs. • Report and present findings from enquiries using detailed scientific language. • Decide how to record data from a choice of familiar approaches. • Choose the best way to present data. • Can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms. • Use evidence to justify ideas and conclusions. • Identify scientific evidence that has been used to support and refute ideas. • Use test results to make predictions and set up further tests. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate. • Make their own decisions about what observations to make, how long to make them for and whether to repeat them. • Choose equipment and explain how to use it accurately. 	<ul style="list-style-type: none"> • UKS2 Cycle 2 Autumn 2
<p>Summer 1</p>	<p>In LKS2 children should:</p> <ul style="list-style-type: none"> • Construct and interpret a variety of food chains, identifying producers, predators and prey 	<p><u>Plants Biology</u> Living Things and Their Habitats</p> <ul style="list-style-type: none"> • Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Y6 • Give reasons for classifying plants and animals based on specific characteristics. Y6 • Describe the life process of reproduction in some plants and animals. Y5 	<ul style="list-style-type: none"> • LKS1 Summer 1 Cycle 2 – Plant life cycle and needs • Classification – living things can be

	<ul style="list-style-type: none"> 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. Recognise that living things can be grouped in a variety of ways. 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 danger to living things. 	<p>Key Learning</p> <ul style="list-style-type: none"> Living things can be formally grouped according to characteristics. Plants and animals are two main groups but there are other living things that do not fit into these groups e.g. micro-organisms such as bacteria and yeast, and toadstools and mushrooms. Plants can make their own food whereas animals cannot. Animals can be divided into two main groups: those that have backbones (vertebrates); and those that do not (invertebrates). Vertebrates can be divided into five small groups: fish; amphibians; reptiles; birds; and mammals. Each group has common characteristics. Invertebrates can be divided into a number of groups, including insects, spiders, snails and worms. Plants can be divided broadly into two main groups: flowering plants; and non-flowering plants. Plants reproduce both sexually and asexually. Bulbs, tubers, runners and plantlets are examples of asexual plant reproduction which involves only one parent. Gardeners may force plants to reproduce asexually by taking cuttings. Sexual reproduction occurs through pollination, usually involving wind or insects. <p>Working Scientifically Skills to be taught</p> <ul style="list-style-type: none"> Use their scientific experiences to explore ideas and raise questions. Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) Recognise which secondary sources will be the most useful Use and develop keys and other information records to identify, classify and describe living things and materials. 	<p>classified in a variety of ways</p> <ul style="list-style-type: none"> Classification keys – LKS2 Cycle 1 Summer 1
<p>Summer 2</p>	<p>In LKS2, children should:</p> <ul style="list-style-type: none"> Identify that animals, including humans, need the right types and amount of nutrition, and they cannot make their own food; they get their nutrition from what they eat. Know how nutrients, water and oxygen are transported within animals and humans. Know about the importance of a nutritious, balanced diet. Identify that humans and some other animals have skeletons and muscles for support, protection and movement. Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. 	<p>Sporting Champions Biology Animals, including Humans</p> <ul style="list-style-type: none"> Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. (<i>Diet and exercise – flashback</i>) Y6 Describe the changes as humans develop to old age. Y5 <p>Key Learning</p> <ul style="list-style-type: none"> Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. They can affect how well our heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think, and generally how fit and well we feel. Some conditions are caused by deficiencies in our diet e.g. lack of vitamins. This content is also included in PSHE. When babies are young, they grow rapidly. They are very dependent on their parents. As they develop, they learn many skills. At puberty, a child's body changes and develops primary and secondary sexual characteristics. This enables the adult to reproduce. This needs to be taught alongside PSHE. <p>Working Scientifically Skills to be taught</p> <ul style="list-style-type: none"> Use their scientific experiences to explore ideas and raise questions. Select and plan the most appropriate ways to answer science questions using different types of scientific enquiry (including observing changes over different periods of time, noticing patterns, grouping and classifying, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.) Recognise which secondary sources will be the most useful 	<ul style="list-style-type: none"> UKS2 Cycle 2 Autumn 1 LKS2 Cycle 1 Summer 2

