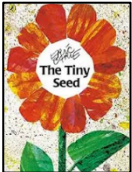
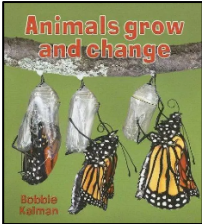
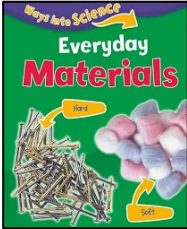
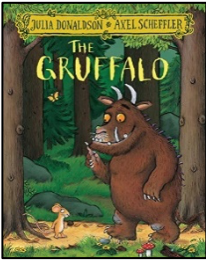


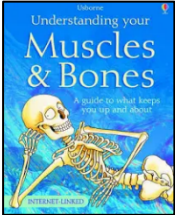
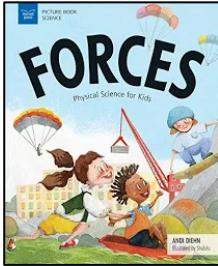

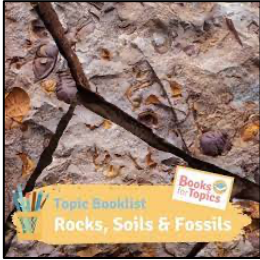
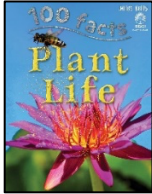
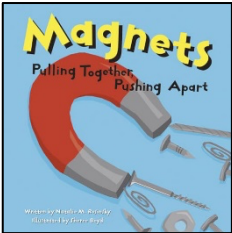
Rishton Methodist Primary School



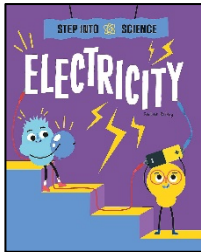
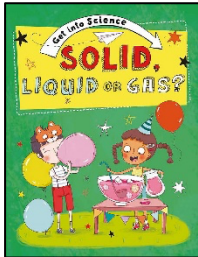
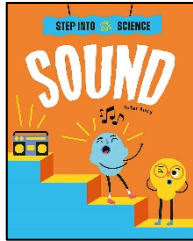
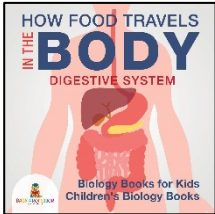
Science Curriculum

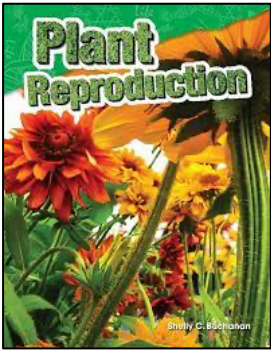
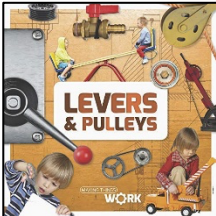
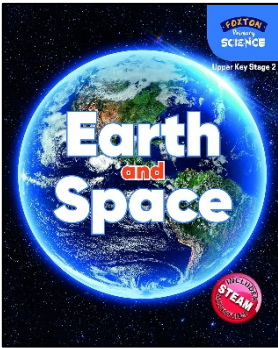
Our Year 1 Science curriculum builds directly on the learning undertaken in the EYFS Understanding the World early learning goal. During their time in early years, children will explore, problem solve, observe, predict think, make decisions and talk about the world around them. These skills, knowledge and experiences underpin the learning that takes place in Year 1 and across the KS1 and KS2 curriculum.

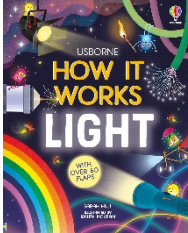
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year One	<p>Focus: Plants</p> <p>Vocabulary – leaf, flower, blossom, petal, fruit, berry, root, seed, trunk and branch.</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Reception and revisit what can be observed in our school playground environments. Explore the grounds and discuss what can be seen e.g. grass, plants and trees. Make close observations of leaves, seeds and flowers. Compare different leaves. Compare different seeds. Classify leaves, seeds and flowers using a range of characteristics. Identify plants by matching them to named images. Inquiry question: What plants can be observed in our local area – possible data collection activity. <p>Ongoing focus: collect information on the weather over the year and how the seasons change.</p> <p>Book Suggestion: The Extraordinary Gardener by Sam Broughton</p>	<p>Focus: Animals Including Humans</p> <p>Vocabulary – head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin and scales.</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Reception, naming key people in their lives and their jobs in relation to the children's lives. Make first-hand, close observations of animals from each of the groups e.g. mammals, fish... Compare two animals from the same or different groups. Identify animals by matching them to named images. Make first hand close observations of parts of the body e.g. hands, eyes... Inquiry question: How does a lion differ to a gold fish? <p>Ongoing focus: collect information on the weather over the year and how the seasons change.</p> <p>Book Suggestion: The Rainbow Bear by Michael Morpurgo</p>	<p>Focus: Animals Including Humans</p> <p>Vocabulary – feathers, fur, beak, paws, touch, see, smell, taste, hear, fingers, skin, nose, ear and tongue.</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to last half term and recap the different animal groups and the main body parts. Compare two people and their similarities and differences. Take measurements of parts of the body e.g. hand span, foot size. Look for patterns between people e.g. do people with big hands have big feet? Explore the five senses. Inquiry question: What are the human senses and which parts of our bodies are used to sense? <p>Ongoing focus: collect information on the weather over the year and how the seasons change.</p> <p>Book Suggestion: Animal Tales from India by Nikita Gill</p>	<p>Focus: Everyday Materials</p> <p>Vocabulary – Object, material, wood, plastic, glass, metal, water, rock, brick and paper.</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to reception to explore different materials with their fingers. Discusses difference between them. Classify objects made of one material in different ways e.g. a group of objects made of metal. Classify in different ways one type of objects made from a range of materials e.g. spoons made from different materials. Classify materials based on their properties. Inquiry question: test the properties of objects e.g. the strength of party hats made from different materials. <p>Ongoing focus: collect information on the weather over the year and how the seasons change.</p> <p>Book Suggestion: A Super Sticky Mistake by Alison Donald</p>	<p>Ongoing focus: collect information on the weather over the year and how the seasons change.</p>	<p>Focus: Seasonal Changes</p> <p>Vocabulary – weather, rainy, sunny, winter, summer, autumn, spring.</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Reception and describe what they see, hear and feel whilst outside. Collate information across the year focused on weather. Discuss how it changes over the months. Collate information across the seasons, focusing on key changes. Present information in different ways to compare the seasons. Inquiry question: How does the length of daylight change across the year? <p>Ongoing focus: collect information on the weather over the year and how the seasons change.</p> <p>Book Suggestion: Tree: Seasons come, Seasons go by Partricia Hegarty</p>

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year Two	<p>Focus: Plants</p> <p>Vocabulary – light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling.</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year One and revisit the structure of a common flowering plant. Make close observations of seeds. Classify seeds. Make close observations of bulbs. Research and plan when and how to plant a range of seeds and bulbs. Which plants are best planted in winter and summer? Make comparisons between the growth of the cress and hyacinth. Inquiry question: How does the rate of growth of a cress seed differ from that of a hyacinth bulb? <p>Ongoing focus: plant cress and a hyacinth bulb and observe their growth over the weeks.</p> <p>Book suggestion:</p> 	<p>Focus: Living things and their habitat</p> <p>Vocabulary – amphibian, mammal, bird, reptile, carnivore, herbivore, omnivore, living, dead, never been alive.</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year One and revisit types of animals, e.g. amphibians, reptiles, birds and mammals, name animals that are carnivores, herbivores and omnivores and the structure of different animals. Explore the outside environment to identify objects that are living. How do we know they are living? Explore the outside environment to identify objects that are dead, such as objects made from wood, dead insects and plants and parts of plants and animals that are no longer attached e.g. leaves and twigs, shells, fur, hair and feathers Explore the outside environment to identify objects that have never been alive, such as objects made of rock, metal and plastic. Classify objects into living, dead and never been alive based on previous lessons giving a reason for each Inquiry question: How can we tell if something is living, dead or never been alive? <p>Ongoing focus: identify things that are living, dead or never been alive during nature walks/outdoor learning days over the year.</p> <p>Book Suggestion: Ratty's Big Adventure by Lara Hawthorne</p>	<p>Focus: Animals, including humans</p> <p>Vocabulary – offspring, reproduction, growth, baby, toddler, child, teenager, adult, old person, names of animals and their babies (e.g. chick/hen, kitten/cat, caterpillar/butterfly), survive, survival, water, food, air, exercise, heartbeat, breathing, hygiene, germs, disease, food types (e.g. meat, fish, vegetables, bread, rice, pasta, dairy)</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year One and revisit naming the basic parts of the human body and say which part of the body is associated with each sense. Find out which animals begin as young and grow into adults, which begin as an egg and which don't look like their parents, e.g. tadpoles. Explore the life cycle of an animal, e.g. a caterpillar to how a baby grows into an adult. How do we look after a baby compared to how we look after a pet? How does this meet their basic needs for survival? Explain the importance for humans to get the right amount of exercise and eat the right foods. Explain why good hygiene is important for preventing infections and illnesses, e.g. hand washing. Inquiry question: How do animals and humans grow and change in different ways? <p>Book suggestion:</p> 	<p>Focus: Uses of everyday materials</p> <p>Vocabulary – Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard Properties of materials – as for Year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year One and revisit the names of a variety of everyday materials and their properties. Look at everyday objects and explain why their properties make them suitable for a particular purpose, e.g. a clear water bottle. Conduct and experiment into which material would be suitable to build a bridge strong enough for a toy car to travel across. Learn that objects made of some materials can be changed in shape by bending, stretching, squashing and twisting, for example, clay. Is it possible to make the same changes to other materials? Inquiry question: How do the properties of materials make them suitable for some purposes and not others? <p>Book suggestion:</p> 	<p>Focus: Plants</p> <p>Vocabulary – light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling.</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year Two Autumn One and revisit seeds and bulbs. Make close observations of seeds found within fruits. Explore their similarities and differences. Revisit work completed in Autumn One Year Two on what plants are best planted in summer. Plant a chosen plant discussing why instructions are important to follow. Children are to summarise the differences between seeds and bulbs, preparing an information video for others. Perform their prepared information videos. Inquiry question: How are seeds similar and different to bulbs? <p>Book suggestion: Bloom by Anne Booth</p>	<p>Focus: Living things and their habitat</p> <p>Vocabulary – suited, suitable, basic needs, food, food chain, shelter, move, feed, water, air, survive, survival, names of local habitats (e.g. pond, woodland etc.), names of micro-habitats (e.g. under logs, in bushes etc.), conditions, light, dark, shady, sunny, wet, damp, dry, hot, cold, names of living things in the habitats and microhabitats studied</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Learn about which habitats are suited to different animals and why. Learn about which habitats would be unsuited to certain animals and why. Research the difference between habitats and micro-habitats and their different conditions. Visit forest school to discuss a simple food chain, starting with a plant. Construct a simple food chain based on previous lesson. Inquiry question: How does an animal's habitat help it to survive? <p>Ongoing focus: look out for habitats for plants and animals on nature walks/outdoor learning days over the year.</p> <p>Book suggestion:</p> 

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year Three	<p>Focus: Animals, including humans</p> <p>Vocabulary – nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year One and revisit types of animals and their structure and the basic needs of humans and animals. Explore how plants are able to make their own food. Which nutrients can be found in food? Look at food labels to find common nutrients found in different foods. Plan a daily diet to contain a good balance of nutrients. Name some of the bones in the human skeleton and compare this to that of some animals. Describe how muscles and joints help us to move. Explore how our skeletons provide protection and support. Inquiry question: How do our skeletons and muscles help us to move, provide protection and support? <p>Book suggestion:</p> 	<p>Focus: Forces</p> <p>Vocabulary – force, push, pull, twist, contact force, non-contact force</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year Two and revisit how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Understand that forces are a push or a pull. Give examples of forces in everyday life. Carry out investigations to explore how objects move on different surfaces. Use results from the investigation to describe how objects move on different surfaces. Use results to make predictions about further tests then test them out. Inquiry question: How do objects move on different surfaces? <p>Book suggestion:</p> 	<p>Focus: Light</p> <p>Vocabulary – light, light source, sun, sunlight, dangerous, reflect, dark, shadow</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year Two and revisit identifying, naming, drawing and labelling the basic parts of the human body and say which part of the body is associated with each sense. Explore how different objects are more or less visible in different levels of lighting and making predictions about how visibility will change depending on lighting. Explore how objects with different surfaces (e.g. shiny vs matt) are more or less visible. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Explore how shadows vary as the distance between a light source and an object or surface is changed. Explore shadows which are connected to and disconnected from the object e.g. shadows of clouds and children in the playground. Choose suitable materials to make shadow puppets. Inquiry question: How do changes in light sources affect our visibility? <p>Book suggestion:</p> 	<p>Focus: Rocks</p> <p>Vocabulary – rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, fossil, bone, flesh, minerals, marble, chalk, granite, sandstone, slate, soil, types of soil (e.g. peaty, sandy, chalk, clay)</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year Two and comparing the suitability of everyday materials for particular uses. Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Devise a test to investigate the hardness of a range of rocks. Devise a test to investigate how much water different rocks absorb. Explain how fossils are formed. Explain that soils are made from rocks and also contain living/dead matter Inquiry question: Explain how rocks are not all the same. <p>Book suggestion:</p> 	<p>Focus: Plants</p> <p>Vocabulary – photosynthesis, pollen, insect/wind pollination, male, female, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal), air, nutrients, minerals, soil, absorb, transport</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year two and revisit how seeds and bulbs grow into mature and describe what plants need to grow and stay healthy. Explain the function of the parts of a flowering plant. Observe the effect of putting cut white carnations or celery in coloured water. Describe the life cycle of flowering plants, including pollination, seed formation, seed dispersal, and germination. Observe flowers carefully to identify the pollen. Classify seeds in a range of ways, including by how they are dispersed. Inquiry question: How do flowers play a part in the life cycle of flowering plants? <p>Ongoing focus:</p> <p>Spot flowers, seeds, berries and fruits outside throughout the year. Observe flowers being visited by pollinators e.g. bees and butterflies in the summer.</p> <p>Book suggestion:</p> 	<p>Focus: Magnets</p> <p>Vocabulary – magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Autumn 2 and the work the children did on forces. Explore what materials are attracted to a magnet. Classify materials according to whether they are magnetic. Use classification evidence to identify that some metals, but not all, are magnetic. Through their exploration, they can show how like poles repel and unlike poles attract, and name unmarked poles. Explore how magnets work at a distance e.g. through the table, in water, jumping paper clips up off the table. Devise an investigation to test the strength of magnets. Inquiry question: Explain the forces displayed by a magnet. <p>Book suggestion:</p> 

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year Four	<p>Focus: Living things and their habitat</p> <p>Vocabulary – classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year Two and identifying and naming a range of animals and their habitats including microhabitats. Group animals into vertebrates and invertebrates. Use classification keys to name unknown living things. Use fieldwork to explore human impact on the local environment e.g. litter, tree planting. Use secondary sources to find out about how environments may naturally change. Use secondary sources to find out about human impact, both positive and negative, on environments. Inquiry question: How are the habitats of animals affected by external factors? <p>Book suggestion:</p> 	<p>Focus: Animals, including humans (teeth)</p> <p>Vocabulary – teeth, incisor, canine, molar, premolars, dental hygiene, toothbrush, toothpaste, decay, cavities, plaque, gums, enamel</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Identify the types of teeth in animals and humans. Describe the simple function of each type of tooth. Compare animals and human teeth and explain how teeth types are linked to types of eaters. Understand the effect of our food on our teeth by conducting an egg experiment. Analyse results of egg experiment. Learn how to take care of our teeth. Children debate the importance of cleaning your teeth. Inquiry question: Why do we have different types of teeth? <p>Book suggestion:</p> 	<p>Focus: Electricity</p> <p>Vocabulary – electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol</p> <p>Knowledge Development:</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 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. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors. Inquiry question: How are complete circuits constructed and repaired? <p>Book suggestion:</p> 	<p>Focus: States of Matter</p> <p>Vocabulary – solid, liquid, gas, heating, cooling, state change, melting, freezing, melting point, boiling, boiling point, evaporation, condensation, temperature, water cycle</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year One and Year Two and revisit everyday materials and their uses and how they can be twisted stretched and bent etc. Compare and group materials together, according to whether they are solids, liquids or gases. 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). Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (link to geography), link how this shows a reversible change. Set up investigations to explore changing the rate of evaporation e.g. washing, puddles, handprints on paper towels, liquids in containers. Non-Newtonian fluid experiment with cornflour. Make links to irreversible changes. Inquiry question: How do some substances show reversible and irreversible changes? <p>Book suggestion:</p> 	<p>Focus: Sound</p> <p>Vocabulary – sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation, quiet, soundwaves, eardrum</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year One and revisit the five senses. Identify how sounds are made, associating some of them with something vibrating. Demo with musical instruments. Recognise that vibrations from sounds travel through a medium, e.g. air, water, metal to the ear. Explore how to create high and low pitched sounds. Explore how to create quiet and loud volumes using musical instruments. Recognise that sounds get fainter as the distance from the sound source increases. Investigate how different materials can insulate sounds. Inquiry question: How are sounds made and altered? <p>Book suggestion:</p> 	<p>Focus: Animals, including humans (digestive system)</p> <p>Vocabulary – digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus herbivore, carnivore, omnivore, producer, predator, prey, food chain</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year One and revisit the types of eaters in the animal kingdom and Year Two to recap that humans need nutrition and can't make their own food. Additionally recap work on teeth and their job of breaking food down. Sequence the main parts of the digestive system. Describe what happens in each part of the digestive system. Use food chains to identify producers, predators and prey within a habitat. Create food chains based on research. Inquiry question: How does food makes its way through our bodies? <p>Book suggestion:</p> 

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year Five	<p>Focus: Living things in their habitats</p> <p>Vocabulary – life cycle, reproduce, sexual, fertilises, asexual, plantlets, runners, tubers, bulbs, cuttings, metamorphosis, live young</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to the learning in Y2 that animals have offspring that grow into adults and the learning in Y3 about the life cycles of flowering plants. Describe the life cycle of animals where live young are born. Describe the life cycle of animals that lay eggs. Describe the process of metamorphosis. Give examples of which plants use asexual reproduction. Explore which plants use sexual reproduction. Inquiry question: How would you compare the life cycles of different animals? <p>Ongoing focus: Grow and observe plants that reproduce asexually e.g. strawberries, spider plants, potatoes. Take cuttings from a range of plants e.g. African violet, mint. Plant bulbs and then harvest to see how they multiply.</p> <p>Book suggestion:</p> 	<p>Focus: Forces</p> <p>Vocabulary – force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to learning about forces and magnets in Y3. Investigate the effect of gravity acting on an unsupported object. Investigate the effects of water resistance in a range of contexts. Investigate the effects of air resistance in a range of contexts. Explore how levers, pulleys and gears work. Make a product that involves a lever, pulley or gear. Inquiry question: How do small forces compare to large forces and the movement they cause? <p>Book suggestion:</p> 	<p>Focus: Earth and Space</p> <p>Vocabulary – Sun, Moon, Earth, planets (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, Solar System, rotate, star, orbit</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to Year One and recap the seasons and how the length of days change throughout the year. Research the 8 planets that make up the solar system. Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. Show using diagrams the rotation of the Earth and how this causes day and night Inquiry question: How do the movements of the Earth and Moon differ? <p>Book suggestion:</p> 	<p>Focus: Properties and changes of materials</p> <p>Vocabulary – Thermal/electrical insulator/conductor, mixture, solution, soluble, insoluble, filter, sieve, dissolve, solids</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to prior learning about the properties of materials across other year groups. Investigate the properties of different materials in order to recommend materials for particular functions depending on these properties e.g. test waterproofness and thermal insulation to identify a suitable fabric for a coat. Explore adding a range of solids to water and other liquids e.g. cooking oil, as appropriate. Group solids based on their observations when mixing them with water. Investigate rates of dissolving by carrying out comparative and fair test. Inquiry question: Do all materials dissolve in water? 	<p>Focus: Animals, including humans</p> <p>Vocabulary – Puberty – the vocabulary to describe sexual characteristics</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to prior learning that animals give birth to offspring that grow into adults. Explain how a baby changes physically as it grows. Explain what babies are able to do as they grow. Explain the changes that takes place in girls during puberty. Explain the changes that take place in boys during puberty. This unit is to be taught alongside PSHE. Inquiry question: What is the same and different about the changes boys and girls experience during puberty? <p>Book suggestion: The Bright and Bold Human Body: The Reproductive System</p>	<p>Focus: Properties and changes of materials</p> <p>Vocabulary – change of state, mixture, dissolve, solution, reversible/non-reversible change, burning, rusting, new material</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to prior learning in the spring term about the properties of materials. Use knowledge of solids, liquids and gases to decide how mixtures might be separated. Separate mixtures by sieving. Separate mixtures by filtering. Separate mixtures by evaporation. Choose the most suitable method and equipment to separate different mixtures. Show that dissolving, mixing and changes of state are reversible changes. Explore the fact that some changes result in the formation of new materials, and that this kind of change is not usually reversible, e.g. rusting, adding fizzy tablets to water, burning. Inquiry question: What evidence is there that some changes we make to materials are irreversible?

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year Six	<p>Focus: Light</p> <p>Vocabulary – light, plus straight lines, light rays, light source, Sun, sunlight, dangerous, shadow, translucent, opaque, reflection,</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to the learning in Y3 on light and shadow. Explore different ways to demonstrate that light travels in straight lines e.g. shining a torch down a bent and straight hose pipe, shining a torch through different shaped holes in card. Describe, with diagrams or models as appropriate, how light travels in straight lines past translucent or opaque objects to form a shadow of the same shape. Explore the uses of the behaviour of light, reflection and shadows, such as in periscope design, rear view mirrors and shadow puppets. Predict and explain, with diagrams or models as appropriate, how the shape of shadows can be varied. Inquiry question: Explain how light is essential for seeing objects. <p>Book suggestion:</p> 	<p>Focus: Electricity</p> <p>Vocabulary – circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to learning about constructing simple circuits and insulators and conductors in Y4. Demonstrate how using more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound. Make electric circuits and demonstrate how variation in the working of particular components, such as the brightness of bulbs, can be changed by using cells of different voltages. Investigate what happens when you add more bulbs to a circuit. Investigate what happens to the speed of motors and the volume of buzzers when you add more. Draw circuit diagrams of a range of simple series circuits using recognised symbols. Inquiry question: How does changing cells and components in a circuit result in a desired effect? 	<p>Focus: Living things and their habitats</p> <p>Vocabulary – vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, warm-blooded, cold-blooded, insects, spiders, snails, worms, flowering, non-flowering, mosses, ferns, conifers</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to prior learning about classification, life cycles and reproduction of plants and animals. Learn about the formal classification system devised by Carl Linnaeus and why it is important. Give examples of animals in the five vertebrate groups and some of the invertebrate groups. Can give the key characteristics of the five vertebrate groups and some invertebrate groups. Classify plants and animals, presenting this in a range of ways e.g. Venn diagrams, Carroll diagrams and keys. Give examples of flowering and non-flowering plants. Inquiry question: Why is it important to characterise plants and animals based on specific characteristics? <p>Book suggestion: The Last Bear by Hannah Gold</p>	<p>Focus: Animals, including humans</p> <p>Vocabulary – heart, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, circulatory system</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to prior learning about nutrition and the digestive system. Identify and name the main parts of the human circulatory system. Create a role play model for the circulatory system. Use the role play model to explain the main parts of the circulatory system and their role. Draw a diagram of the circulatory system and label the parts and annotate it to show what the parts do. Produce a piece of writing that demonstrates the key knowledge e.g. explanation text, job description of the heart. Inquiry question: How does the human circulatory system work? <p>Book suggestion: Illumanatomy by Kate Davies</p>	<p>Focus: Animals, including humans</p> <p>Vocabulary – heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, diet, exercise, drugs, lifestyle</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Bridge back to prior learning last half-term about the human circulatory system. Carry out a range of pulse rate investigations. Fair test – effect of different activities on my pulse rate. Pattern seeking – exploring which groups of people may have higher or lower resting pulse rates. Observation over time - how long does it take my pulse rate to return to my resting pulse rate (recovery rate). Explain both the positive and negative effects of diet, exercise, drugs and lifestyle on the body. Inquiry question: What impact do drugs and lifestyle have on our bodies? <p>Book suggestion: The Bubble Boy by Stewart Foster</p>	<p>Focus: Evolution and inheritance</p> <p>Vocabulary – offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils, evolve, evolution</p> <p>Knowledge Development:</p> <ul style="list-style-type: none"> Identify features in animals and plants that are passed on to offspring and explore this process by considering the artificial breeding of animals or plants e.g. dogs. Give examples of how plants and animals are suited to an environment. Use secondary sources to find out about how the population of peppered moths changed during the industrial revolution. Give examples of living things that lived millions of years ago and the fossil evidence we have to support this. Give examples of fossil evidence that can be used to support the theory of evolution. Inquiry question: What evidence is there to support the theory of evolution? <p>Ongoing focus: Research the work of Mary Anning and how this provided evidence of evolution.</p>