

Science	Progression	Intent National Curriculum Objectives						Implementation	Impact		
Year group	Skills knowledge the children should already have	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	How will this be taught? <i>Working scientifically</i>	What skills/knowledge will children have acquired?	Key vocabulary	Key Questions
1	EYFS - To observe the effects of physical activity on their bodies. To comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world. To talk about some of the things they have observed, such as plants, animals, natural and found objects. To develop an understanding	<b>Animals in. humans</b> <i>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</i>	<b>Animals in. humans</b> <i>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name</i>	<b>Everyday materials</b> <i>Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties.</i>	<b>Plants</b> <i>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.</i>	<b>Seasonal changes</b> <i>Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.</i>	<b>Asking simple questions</b>  <b>Observing closely, using some simple equipment</b>  <b>Performing simple tests identifying and classifying</b>  <b>Using observations and ideas to suggest answers to questions</b>  <b>Begin to make records of findings in appropriate forms</b>	Become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including pets. Know the names of the main body parts (head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth). <b>Know about the changes in weather and the seasons.</b> Become familiar with the names of materials and properties such as hard/soft; stretchy/stiff; shiny/dull;	Common animals: Fish, amphibians, reptiles, birds, mammals, pets, omnivores, carnivores, Herbivores, senses: tongue-taste; nose-smell; eyes-vision; skin-touch; ears-hearing. <b>Season: summer, winter, autumn, spring, day, daytime.</b> <b>Weather: wind, rain, snow, hail,</b>	<b>AIH</b> Which body part is responsible for taste? Smell? Touch? Sight? Hearing? Label the body parts (head, arm, leg, foot, tummy and head) on a body outline. Give an example of each of the following types of animals – bird, reptile, amphibian, mammal. If an animal eats both plants and meat, what would it be called? What is a herbivore? What is a carnivore? <b>SEASONAL CHNGS</b> What is the name of the season that happens in March, April and May? June July August? September October, November? December, January February? What season am I? <i>Baby animals are often</i>	

<p>of growth, decay and changes over time.                  EYFS - To comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world.                  They talk about the features of their own immediate environment and how environments might vary from one another.                  EYFS - To talk about why things happen and how things work.                  To begin to be interested in and describe</p>			<p>a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and</p>						<p>rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/translucent.                  Become familiar with common names of flowers and plant structures.</p>	<p>sleet, fog, sun, hot, warm, cold.                  Material: wood, plastic, glass, metal, water, rock, brick, paper, fabrics, elastic, foil.                  Properties: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/translucent.                  Common: wild plants; garden plants;</p>	<p>born during this season. Plants begin to grow. Can you think of another event or something else that happens during this season?                  What season am I? The longest day is in this season. It is usually the warmest season.                  Can you think of another event or something else that happens during this season?                  In what season would you wear gloves, jumpers and hats?  <b>EDAY MATERIALS</b>                  What object is made from plastic? What object is made from fabric? What object is made from metal? What object is made from wood? What material would be best to make a door? What material would be best to make a jumper? What material would be best to make a window?                  Is ceramic waterproof, flexible, both or neither? Is glass waterproof, flexible, both or neither? What</p>
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	<p>the texture of things. To look closely at similarities, differences, patterns and change. EYFS - To know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another.</p>		<p><i>mam mals, includ ing pets).</i></p>						<p>deciduous; evergreen. Tree: deciduous, evergreen, trunk, branches, leaf, root, Fruit, vegetables, bulb, seed. Plant: leaf, root, leaves, bud, flowers, blossom, petals, stem.</p>	<p>would the best material to make a winter hat? What material is opaque? What material is flexible? What material is hard? What material is soft? Explain the meaning of the following properties: transparent, smooth, absorbent. <b>PLANTS</b> Label the parts of the plant on a diagram (flower, leaf, roots, stem). What part of a plant collects sunlight? What part of a plant takes in water from the soil and keeps the plant in the ground? What part of the plant helps to support the plant and carry water to different parts of the plant? What does evergreen mean? Which part of the plant is a bee attracted to – stem, flower, roots, leaves? What would a tree look like in winter? Draw it. What does a plant need to survive?</p>
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2	<p>Y1 - Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties .EYFS – know the importance for good health</p>	<p><b>Use of everyday materials</b> <i>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 the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</i></p>	<p><b>Living things and their habitats</b> <i>Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their</i></p>	<p><b>Animals in. humans</b> <i>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Animals in. humans Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of</i></p>	<p><b>Plants</b> <i>Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</i></p>	<p><b>Animals in. humans</b> <i>Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of</i></p>	<p><b>Asking simple questions</b> <b>Observing closely, using some simple equipment</b> <b>Performing simple tests</b> <b>Identifying and classifying</b> <b>Using observations and ideas to suggest answers to questions</b> <b>Gathering and recording data to help in answering questions and consider presenting findings</b></p>	<p>Become familiar with how some materials are used for more than one thing or different materials are used for the same thing. Know that properties of materials make them suitable or unsuitable for particular purposes. Know who John Dunlop, Charles Macintosh and John McAdam are and what they developed. Pupils should know the basic needs of animals for survival, as well as the importance of</p>	<p>Wood, metal, plastic, glass, brick, rock, paper, cardboard, squashing, bending, twisting, stretching, matches, Woods: floors, telegraph poles. Metal: coins, cans, cars, table leg. Spoons: plastic. John Dunlop – rubber Charles Macintosh –</p>	<p><b>EM</b> What material would be suitable for a towel? Which three materials would be most suitable for making a spoon? What is an example of a man-made material? What is an example of a natural material? Which recycling bins would the following objects go in: newspaper, glass, jam jar, book, tin of beans, can of fizzy drink, milk bottle and a plastic bottle? Which three materials would be most suitable for making a drinking bottle? What three items can be stretched? Why is leather a</p>

<p>of physical exercise, and a healthy diet and talk about ways to keep healthy and safe. Y1 - Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Identify, name, draw and label the basic parts of the human body and say which part of</p>		<p><i>habitats, including micro-habitats. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</i></p>	<p><i>including humans, for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</i></p>			<p><i>exercise, eating the right amounts of different types of food, and hygiene.</i></p>	<p><b>Start to consider the idea of fair testing</b></p>	<p>exercise and nutrition for humans. Begin to know the process of growth in animals and humans (egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; baby, toddler, child, teenager, adult. How the local environment changes throughout the year and how different plants grow. Begin to understand the process of reproduction and growth in plants. Know the certain characteristics that are essential for keeping living things alive and healthy. Understand the</p>	<p><b>waterproof fabric.</b> Offspring, grow, adults, egg, caterpillar, pupa, butterfly, spawn, tadpole, frog, lamb, sheep, baby, toddler, child, teenager, adult, egg, chick, chicken, nutrition, reproduce, survival, water, food, air, exercise, hygiene. Suitable, temperature, germination, reproduction, grow, healthy Living, dead,</p>	<p>good material for making shoes? <b>AIH</b> What are the three stages of a frog's lifecycle? Draw the lifecycle of a chicken. What three things must an animal have to grow and survive? What are two things that human babies cannot do for themselves? What foods should you avoid eating lots of in order to stay healthy? How else can a person stay healthy? When should you wash your hands? Give three examples. <b>PLANTS</b> Order the lifecycle of a bean. What makes a plant grow? What is the function of the following parts of a plant: roots, leaves, flower, stem?</p>
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	<p>the body is associated with each sense.</p> <p>Y1 - Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>							<p>word habitat and micro-habitat and have observed their local environment and see how living things depend on each other – plants as a food source of food and shelter for animals.</p> <p>Made comparisons about animals in familiar and less familiar habitats (seashore, woodland, ocean, rainforest).</p>	<p>never alive, habitats, micro-habitats, food, food chain, leaf litter, stony path, under bushes, shelter, seashore, woodland, ocean, rainforest, conditions, hot/warm/cold, dry/damp/wet, bright/shade/dark</p>	<p>What two reasons could explain why a plant hasn't grown?</p> <p>Why do plants produce seeds?</p> <p>Jack put some soil in a small pot. He planted the seeds and put the pot somewhere warm. The seeds did not grow. Why not?</p> <p>Why do seeds have a hard outer layer?</p> <p><b>LIVING THINGS</b></p> <p>Give two examples of things that have been alive, used to be alive or never lived.</p> <p>If something does not need food to live, is it alive or not alive?</p> <p>If something can have babies (reproduce), is it alive or not alive?</p> <p>If something can grow and move, is it alive or not alive?</p> <p>What animals would be found in the following habitats: forest, underground,</p>
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										<p>river, ocean, rainforest? What is it called when an animal is the same colour as its habitat? Why would an animal want to blend in with its surroundings? What is a microhabitat? What order would a food chain including a fox, grass and a rabbit go in?</p>
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3	<p>EFYS – know the importance for good health of physical exercise, and a healthy diet and talk about ways to keep healthy and safe.</p> <p>Y1 - Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>Y2 - Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including</p>	<p><b>Rocks</b> <i>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and</i></p>	<p><b>Animals in.</b> <i>Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they</i></p>	<p><b>Forces and magnets</b> <i>Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some</i></p>	<p><b>Light</b> <i>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</i></p>	<p><b>Plants</b> <i>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. 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. Investigate the way in which water is transported within plants. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</i></p>	<p><b>Asking relevant questions</b></p> <p><b>Setting up simple practical enquiries, comparative and fair tests</b></p> <p><b>Making accurate measurements using standard units, using some equipment</b></p> <p><b>Gathering, recording, classifying and presenting data in a variety of ways to help with answering questions</b></p> <p><b>Recording findings using simple scientific</b></p>	<p>Tell the different between different kinds of rocks and soils including from the local environment. Developed their knowledge of the importance of nutrition. Know the main body parts associated with the skeleton and muscles. Know that different parts of the body have special functions. Know that magnetic forces can act without direct contact, unlike most forces, where</p>	<p>Appearance, physical, properties, hard/soft, shiny/dull, rough/smooth, absorbent/not absorbent, fossils, sedimentary, rock, soils, organic matter, buildings, gravestones, grains, crystals. Nutrition, nutrients, carbohydrates, protein, fats, fibre, water, vitamins, minerals, skeleton, bones, joints, endoskeleton,</p>	<p><b>ROCKS</b> What are the three different rock types? Give an example of natural rock for each. What is the only type of rock where you can find fossils? What are the three different types of fossil? Give an example of a fossil for each type. Name the three different layers of soil. What are the four items that make soil?</p> <p><b>AIH</b> Name one reason animals and humans need food. What are the 5 main food groups? What nutrient does what job? What are the two types of skeleton? Give an example animal for each type. What is a function of the skeleton?</p>



<p>humans, for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.  <b>Y1 – Observe and describe weather associated with the seasons and how day length varies.</b>                  EYFS – talk about some of the things they have observed, plants, animals, natural and found objects. To develop an understanding of growth, decay and changes over time.                  To show care for living things and the environment.                  Y1- Identify and name a variety of common</p>	<p><i>organic matter.</i></p>	<p><i>get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</i></p>	<p><i>magnetic materials Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.</i></p>	<p><i>source is blocked by a solid object. Find patterns in the way that the size of shadows change.</i></p>			<p><b>language, drawings, labelled diagrams, bar charts and tables</b></p> <p><b>Reporting on findings from enquiries including oral and written explanations, displays or presentations of results and conclusions</b></p> <p><b>Using results to draw simple conclusions and suggest improvements</b></p> <p><b>Identifying differences, similarities or changes related to simple scientific ideas and processes</b></p> <p><b>Using straightforward scientific evidence to answer</b></p>	<p>direct contact is necessary.                  Explored the behaviour and everyday uses of different magnets (bar, ring, button, horseshoe).  <b>Know what happens when light reflects off mirror or other reflective surfaces.</b>  <b>Be able to answer questions about how light behaves. Know why it is important to protect their eyes from bright lights.</b>  <b>Know how shadows are formed and why they change.</b>                  Understand the role of the roots, stem, leaves and flowers in plants.                  Know that plants can make their own food.</p>	<p><i>exoskeleton, hydrostatic, vertebrate, invertebrate, contract, relax, muscles, ball joint, socket joint, hinge joint, gliding joint.</i>                  Force, push, pull, open, surface, magnet, magnetic, attract, repel, magnetic poles, North, South.  <b>Light, see, dark, reflect, surface, natural, star, sun, moon, shadow, blocked, solid, artificial, torch, candle, lamp, sunlight, dangerous, protection.</b>                  Flowering plants,</p>	<p>What is the difference between voluntary and involuntary movements?                  What sort of joint is the elbow joint?                  Label the Rib cage, Pelvis and Cranium on a diagram.  <b>FORCES</b>                  What is a force?                  What metals can be picked up by a magnet?                  Which way does a compass always point?                  What is the name of the force that stops things sliding down a ramp and makes it grip?                  Use the words attract and repel in a sentence about magnets.  <b>LIGHT</b>                  What is a light source?                  What is dark?                  What happens if you shine a torch on a shiny surface?                  Name two dangers of UV light.                  Why should you never look directly at the sun?                  Define the words transparent, translucent and opaque.</p>
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	<p>wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. Y2 - Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>						<p>questions or to support their findings</p>		<p>roots, stem, trunk, leaves, flowers, function, nutrition, support, reproduction, air, light, water, fertiliser, flowers pollination, seed formation, seed dispersal.</p>	<p>How is a shadow made?          How do you make a shadow bigger?  <b>PLANTS</b>          What job do these parts of a plant do: petals, stem, roots?          Where are food and nutrients made in a plant?          Name two things that all living things do.          Name two ways seeds can be dispersed.          Name two things a plant needs to grow.</p>
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4	<p>Y1 - identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Y2 - Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Y1 - Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>	<p><b>Electricity</b> <i>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</i></p>	<p><b>Sound</b> <i>Identify how sound is made, associating some of them with some things vibrating. Recognise that vibrations from sounds travel through a medium to</i></p>	<p><b>States of matter</b> <i>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. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</i></p>	<p><b>Animals in humans</b> <i>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. Construct and interpret a variety of food chains, identifying producers, predators and prey.</i></p>	<p><b>Living things and their habitats</b> <i>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 dangers to living things.</i></p>	<p><b>Asking relevant questions</b> <b>Setting up simple practical enquiries, comparative and fair tests</b></p> <p><b>Making accurate measurements using standard units, using a range of equipment</b></p> <p><b>Gathering, recording, classifying and presenting data in a variety of ways to help with answering questions</b></p> <p><b>Recording findings using scientific language,</b></p>	<p>Be able to construct simple series circuits using different components (bulbs, buzzers, motors, switches). Use circuits to create simple devices. Be able to draw a circuit as a pictorial representation. Know that sound is made through vibration in a range of musical instruments from around the world. Know that pitch and volume of sounds can be changed in a variety of ways. Know the difference</p>	<p>Appliances, electricity, electrical circuit, cell, wire, bulb, buzzer, danger, electrical safety, sign, insulators, conductors, switch (open and closed) <b>Vibrate, vibration, vibrating, air, medium, ear, hear, sound, volume, pitch, faint, fainter, loud, louder, string, percussion, woodwind,</b></p>	<p><b>ELECTRICITY</b> What does electricity flow in? What does the flow of electricity create? What three appliances run of electricity? Name four pieces of equipment needed to make a simple circuit. Why would you want to put a switch in a circuit? What does conduct electricity mean? What is the name for a material that does not conduct electricity? <b>SOUND</b> How is sound made using a guitar string? Which travels faster, light or sound? Sound travels faster in water than in air. True or false? Why can't sound travel in space? Name two ways in which a string can make a higher sound. How can I make a</p>

<p>Y1 - Compare and group together a variety of everyday materials on the basis of their simple physical properties. Y2 - Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Y3 - Identify that humans and some other animals have skeletons and muscles for support, protection and movement. Y1 - Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>	<p><i>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 .</i></p>	<p><i>the ear. Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it.</i></p>				<p><b>drawings, labelled diagrams, bar charts and tables</b></p> <p><b>Reporting on findings from enquiries including oral and written explanations, displays or presentations of results and conclusions</b></p> <p><b>Using results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests</b></p> <p><b>Identifying differences, similarities or changes related to simple scientific ideas and processes and consider patterns</b></p>	<p>between a solid, liquid and gas. Observed water as a solid, liquid and a gas and be able to explain the change to water when it is heated or cooled. Know the main body parts associated with the digestive system – mouth, tongue, teeth, oesophagus, stomach, small and large intestine and understand their functions. Group vertebrate animals into groups such as fish, amphibians, reptiles, birds, and mammals, and invertebrates into snails and slugs, worms, spiders, and insects. Know how habitats change throughout the year. Group plants into flowering plants</p>	<p><b>brass, insulate.</b> Solid, solidify, iron, ice, melt, freeze, liquid, evaporate, condense, gas, container, changing state, heated, heat, cooled, cool, degree Celsius, thermometer, water cycle, evaporation, condensation, temperature, melting, warm/cool, water, water vapour. Digestion, mouth, tongue – mixes, moistens, saliva, oesophagus, transports, stomach, acid, enzymes,</p>	<p>fainter sound when I pluck a string by moving where I am? <b>STATES OF MATTER</b> If you put something in a container, how would you tell if it was a liquid? True or false: Gases can be squashed. Solids can change shape on their own. Gravity keeps liquid at the bottom of a container. Gases don't weigh anything. How do the particles behave in a solid? Liquid? Gas? Would you heat or cool to change a liquid to a solid? What happens to particles as you heat them up? Draw the water cycle and label. What is the name of the process that happens as the water leaves the sea and goes up into the sky? What is the scientific name for rain, snow and other forms of water that fall from the clouds? <b>AIH</b></p>
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<p>Y2 - Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including micro-habitats. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p> <p>Y1 - Identify and name a variety of common animals</p>		<p><i>Recognise that sounds get fainter as the distance from the sound source increases.</i></p>					<p><b>Using straightforward scientific evidence to answer questions or to support their findings</b></p>	<p>and non-flowering plants. Understand how some human impact can be positive and negative on environments – nature reserves, ecologically planned parks, garden ponds/ population and development, litter or deforestation.</p>	<p>small intestine, vitamins, large intestines, teeth – incisors, canines, molars, grinding, floss, brush, food chain, sun, producers, prey, predators, carnivore, herbivore, omnivore.</p> <p>Environment , flowering, non-flowering, plants, animals, vertebrate, invertebrate , fish, amphibians, reptiles, birds, mammals, human impact positive – nature reserves, ecologically</p>	<p>What is the job of saliva in the digestive system?          What is the job of the Duodenum in the digestive system?          What is the job of the Oesophagus in the digestive system?          What do glands do?          What do enzymes do?          What do the arrows in a food chain show/mean?          What is the first item in any food chain called?          What is the definition of a herbivore, omnivore, detritivore?          How many incisors does a human have?          What is the function of the canine teeth?          What is the function of the molars?          What is the name of the white, outside part of the tooth?  <b>LIVING THINGS</b>          What is a vertebrate?          What are the life processes (MRS GREEN)?          Name a characteristic of an amphibian. Name a characteristic of a mammal. What is an invertebrate? What are the three parts of an insect's body?</p>
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	<p>including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p>								<p>planned parks, garden ponds. Negatives – population, development, litter, deforestation.</p>	<p>When developers build a new housing estate where some fields used to be, what are the problems or dangers caused to wildlife? What are most of the changes to habitats caused by? What does endangered mean? What does extinct mean? Give an example of an endangered species and why it is endangered.</p>
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Science	Progression	Intent National Curriculum Objectives					Implementation	Impact		
Year group	Skills knowledge the children should already have	Autumn 1 Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	How will this be taught? <i>Working scientifically</i>	What skills/knowledge will children have acquired?	Key vocabulary	Key Questions
5	<p>Y3 - compare how things move on different surfaces.</p> <p>Y2 - notice that animals, including humans, have offspring which grow into adults.</p> <p>Y4 - 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.</p> <p>Y3 - Notice that some forces need contact between two objects, but magnetic forces</p>	<p><b>Forces</b> <i>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object; identify the effects of air resistance, water resistance and friction that act between moving surfaces; recognise that some mechanisms</i></p>	<p><b>Earth and Space</b> <i>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</i></p>	<p><b>Animals in humans</b> <i>Describe the changes as humans develop to old age.</i></p>	<p><b>Living things and their habitats</b> <i>Describe the differences in the cycle of a mammal, an amphibian, an insect and a bird; Describe the life process of reproduction in some plants and animals.</i></p>	<p><b>Properties and changes of materials</b> <i>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; know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution; use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating; give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including</i></p>	<p><b>Planning enquiries, including recognising and controlling variables where necessary</b></p> <p><b>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision</b></p> <p><b>Recording data and results using scientific diagrams and labels, classification keys, tables, bar and line graphs and models</b></p> <p><b>Reporting findings from</b></p>	<p>Understand falling objects and question the effects of air resistance. Observed air resistance effects from parachutes and sycamore seeds.</p> <p>Experienced forces that make things begin, speed up and slow down. Understand friction and how it slows or stops moving objects. Understand the effect of leavers, pulleys and simple machines on movement. Know how Galileo Galilei and Isaac Newton helped to develop the theory of gravitation. <b>Explain how day and night occurs.</b></p>	<p>Gravity, air resistance, water resistance, friction, surface, force, effect, move, accelerate, decelerate, stop, vchange direction, brake, mechanism, pulley, gear, spring, theory of gravitation, Galileo Galilei, Isaac Newton. <b>Earth, Sun, Moon, moons, planets, stars, solar system, Mercury, Venus, Mars, Jupiter, Saturn</b></p>	<p><b>FORCES</b></p> <p>In what units do we measure force? What is the name of the force that pulls things towards the centre of the Earth? Who discovered this force? What piece of equipment do we used to measure force? True or false: Mass is a force Weight is a force Length is a force A force is push or pull. Explain why astronauts move in a bouncy way on the moon. Why do astronauts float around in space? How does the shape of a shark help it to move quickly through the water?</p> <p><b>EARTH AND SPACE</b></p> <p>Order the plants from closest to the sun. Roughly what shape are the Earth Sun and Moon?</p>

<p>can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Compare how things move on different surfaces. Y4 - Recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p><i>ms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</i></p>	<p><i>Earth; describe the Sun, Earth and Moon as approximately spherical bodies; use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</i></p>			<p><i>metals, wood and plastic; demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not.</i></p>	<p><b>enquiries, including oral and written explanations of results and conclusions Presenting finding in written form, displays and other presentations</b></p> <p><b>Using test results to make predictions to set up further comparative and fair tests</b></p> <p><b>Using simple models to describe scientific ideas</b></p> <p><b>Identifying scientific evidence that has been used to support or refute ideas or arguments</b></p>	<p>Know that the sun is a star at the centre of our solar system and it has eight planets. Understand that a moon is a celestial body that orbits a planet. Know about the work of scientists such as Ptolemy, Alhazen and Copernicus. Know the stages in the growth and development of humans. Learn about the changes experienced in puberty. The life cycle changes in a variety of living things (plants and animals). Know the work of David Attenborough and Jane Goodall. Know the difference between sexual and asexual reproduction in plants and sexual</p>	<p>Uranus, Neptune, Pluto, rotate, day, night, Aristotle, Ptolemy, Galileo, Copernicus, Brahe, Alhazen, orbit, axis, spherical, heliocentric, geocentric, hemisphere, season, tilt. Puberty, life cycle, gestation, growth, reproduce, foetus, baby, fertilisation, toddler, child, teenager, adult, old age, life expectancy, adolescence, adulthood, early adulthood, middle adulthood, late adulthood, childhood.</p>	<p>Why does the sun look like it is moving across the sky during the day? Explain in your own words, what a satellite is. Explain in your own words what the idea of the heliocentric model is. How long does it take for the Earth to spin once on its axis? The Moon to go around the Earth once? The Earth to go round the Sun once? Describe where your country is in relation to the Sun when it is night time. <b>AIH</b> What is the first stage of the human lifecycle? What are the rest of the stages of a human timeline? Why does your body need to make changes during puberty? Two parts of the brain make more hormones to make puberty happen, name one of these parts. How does your voice change during puberty? Sweat glands? Skin? Body hair?</p>
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								<p>reproduction in animals.                  Built a systematic understanding of materials from exploring and comparing a broad range of materials.                  Explored reversible, changings including evaporating, filtering, sieving, melting and dissolving, as well as irreversible changes – burning, vinegar with bicarbonate of soda.                  Understanding of how chemists make new materials – Spencer Silver or Ruth Benerito.</p>	<p>Life cycles, mammal, amphibian, insect, bird.                  Reproductio n – sexual and asexual, prehistoric, similarities, differences,                  David Attenboroug h Jane Goodall                  Hardness, solubility, transparenc y, electrical conductor, thermal conductor, response to magnets, dissolve, solution, separate, solids, liquids, gases, evaporating, reversible changes, dissolving, mixing, evaporation, filtering, sieving, melting, irreversible,</p>	<p>Do all people in old age always have memory loss? Do they still need to exercise? Can they learn new things? Do they all need help to walk?  <b>LIVING THINGS</b>                  Name a way that an asexual plant reproduces.                  Name a characteristic of mammals.                  What are the three types of mammals?                  What is a baby kangaroo called?                  What makes this type of mammal different from other types of mammal?                  What is metamorphosis? How do amphibians metamorphose?                  Explain how insects metamorphose.                  What grows inside a fertilised bird’s egg?                  What happens if an egg is not fertilised?                  Name a similarity and difference of a bird and amphibian. A mammal and insect.  <b>MATERIALS</b>                  Name two natural materials.</p>
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									<p>new material, burning, rusting, magnetism, electricity, chemists, Spencer Silver, Ruth Benerito, quantitative, measurements, conductivity, insulation, chemical</p>	<p>What is the meaning of these properties of materials: permeable, flexible, absorbent? Name two properties of each of these materials which make them good for these jobs: nylon fabric used for an umbrella; glass used for a greenhouse; plastic used for making electrical plugs. Give two examples of materials that will dissolve in water. What is the correct scientific words for describing something that does not dissolve in water? Water or another liquid with something dissolved into it? Name two things that would make a solid dissolve in water quicker. Give two examples of irreversible changes.</p>
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Science	Progression	Intent National Curriculum Objectives					Implementation	Impact		
Year group	Skills knowledge the children should already have	Autumn 1 Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	How will this be taught? <i>Working scientifically</i>	What skills/knowledge will children have acquired?	Key vocabulary	Key Questions
6	<p>Y3 - 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 size of shadows change.</p> <p>Y4 - Identify common</p>	<p><b>Living things and their habitats</b></p> <p>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.</p>	<p><b>Inheritance and evolution</b></p> <p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth</p>	<p><b>Animals in. humans</b></p> <p>Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the way in which nutrients and water are transported within animals, including humans.</p>	<p><b>Light</b></p> <p>Recognise that light appears to travel in straight lines.</p> <p>Explain that objects give out or reflect light into our eyes.</p> <p>Explain how we see things (light to eyes or from reflectors to eyes).</p> <p>Explain why shadows have the same shape as the</p>	<p><b>Electricity</b></p> <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers</p>	<p><b>Planning enquiries, including recognising and controlling variables where necessary</b></p> <p><b>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision</b></p> <p><b>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs and models</b></p> <p><b>Reporting findings from enquiries,</b></p>	<p>Solid understanding of how light behaves including light sources, reflection and shadows.</p> <p>Know and use the recognised symbols for different components in a series circuit.</p> <p>Answered questions about what happens when trying different components (switches, bulbs, buzzers, motors).</p> <p>Have an understanding of how the circulatory system enables the body to function.</p> <p>Know how to keep their bodies healthy and how their bodies</p>	<p>Light, travels, straight, object, shadows, reflect, reflection, light source, mirrors, periscope, rainbow, filters, reflectors, white light, Isaac Newton, spectrum</p> <p>Components, switches, buzzers, motors, series, voltage, brightness, volume, dangers, sign, circuit diagram, switch, bulb, recognised, symbols.</p>	<p><b>LIGHT</b></p> <p>Name three light sources. How can we see the moon at night? How does light travel? Draw a diagram to show how an eye would see an apple. What is the angle of reflection? What is the angle of incidence? How does a periscope work?</p> <p>Name two precautions that people take to protect themselves from the harmful rays of the sun.</p> <p>True or false: light travels faster than sound; light can travel through space; the moon is a light source; stars shine because they reflect the sun's light.</p> <p>What happens and what is created when you put an opaque object in front of a light source. How does a shadow change as an</p>

<p>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</p>		<p><i>millions of years ago.</i></p> <p><i>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</i></p> <p><i>Identify how animals and</i></p>		<p><i>objects that cast them.</i></p>	<p><i>and the on/off position of switches.</i></p> <p><i>Use recognised symbols when representing a simple circuit in a diagram.</i></p>	<p><b>including oral and written explanations of results, explanations involving causal relationships, and conclusions and consider patterns</b></p> <p><b>Presenting finding in written form, displays and other presentations</b></p> <p><b>Using test results to make predictions to set up further comparative and fair tests</b></p> <p><b>Using simple models to describe scientific ideas</b></p> <p><b>Identifying scientific evidence that has been used to support or refute ideas or arguments</b></p>	<p>might be damaged (drugs, alcohol). Know the work of Carl Linnaeus. Understand classification systems and how they work. Know that plants and animals can be subdivided. Be able to classify animals into vertebrates and invertebrates. Understand how living things on earth have changed over time. Have some understanding of characteristics being passed from parents to their offspring (cross breeding). Variation in offspring over time impacts survival in particular environments. Know the work of Mary Anning and Charles Darwin and Alfred Wallace.</p>	<p>Internal organs, heart, lungs, liver, kidney, brain, skeletal, skeleton, muscle, muscular, digest, digestion, digestive, circulatory system, heart, blood vessels, blood, impact, diet, exercise, drugs, lifestyle, nutrients, alcohol, substances. Classify, compare, Linnaean, Carl Linnaeus, classification, domain, kingdom, phylum, class, order, family, genus, species, characteristics,</p>	<p>opaque object is moved further away from the light source? How does the size of a shadow change as an opaque object is moved closer to the light source? What is the meaning of opaque? What is the meaning of translucent? What is the meaning of transparent? <b>ELECTRICITY</b> Draw the symbols for the following labels: bulb, cell, open switch, closed switch, buzzer, battery, voltmeter, and ammeter. Draw a diagram of a circuit with a battery, a switch and an unlit bulb. Name two ways that electricity can be generated. Describe the appearance of the bulb in the following circuits: a circuit with a battery, a bulb and an open switch; a circuit with two batteries, a closed switch and a bulb; a circuit with a closed switch, a buzzer, a battery and a bulb; a circuit with a motor, a bulb and a closed</p>
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<p>metals with being good conductors.</p> <p>Y4 - Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Y5 - Describe the changes as humans develop to old age.</p> <p>Y4 - 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 dangers to living things.</p>		<p><i>plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</i></p>														<p>vertebrates, invertebrates, microorganisms, organism, flowering, non-flowering.</p> <p>Evolution, adaptation, inherited traits, natural selection, inheritance, Charles Darwin, Alfred Wallace, DNA, Genes, variation, parent, offspring, fossil, environment, habitat, fossilisation, plants, animals, living things, Mary Anning.</p>	<p>switch; a circuit with a closed switch, a battery, a motor, a buzzer and a bulb.</p> <p><b>AIH</b></p> <p>What are the three main parts of the body involved in the circulatory system? What do valves do? When the blood leaves the heart a second time and is pumped around the whole of the body, what is the blood carrying? What gases do the arteries carry? The veins? The capillaries? What gas do we use from the many gases in the air we breathe in? What gas do we get rid of from our body when we exhale? Put the parts of the digestive system in the order food passes through the body: small intestine, mouth, stomach, oesophagus, large intestine.</p> <p>Name two reasons why people might take drugs.</p> <p>What impact does alcohol have on these parts of the body: heart, brain, liver?</p>
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	<p>Y3 - Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties; describe in simple terms how fossils are formed when things that have lived are trapped within rock; recognise that soils are made from rocks and organic matter.</p>										<p><b>LIVING THINGS</b>                  What is the name given to scientists who sort and classify living things into groups?                  What did Carl Linnaeus create and why?                  What class of animal is a fox? Name three types of microorganisms. Name a way that food is preserved to stop it going mouldy quickly.                  Name one of the conditions that help mould grow well.</p> <p><b>INHERITANCE/EVOL</b>                  Explain what evolution means. Explain what a fossil is. On average, how long does it take to make a fossil – 100 years, 10,000 years, 1000 years or 1,000,000 years? How can we use fossils as evidence of evolution?                  What does inheritance mean? True or false – inherited characteristics are always physical.                  True or false – a child gets half of its characteristics from its mother and the other half from its father.</p>
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										<p>Explain why siblings who inherit the same characteristics from their parents are not identical to each other. What is adaptation? Give one example of how an animal or plant has adapted to suit its environment. Give two ways a penguin is suited to swimming under the water. Explain how adaptation may lead to evolution.</p>
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