Dovecote Primary School
Science Subject Progression 2025 - 2026

YEAR 1		
Autumn 1 **National Curriculum:** Animals including humans **The human body and the senses** **Substantive Concepts:** Parts of the body do different jobs	Autumn 2 **National Curriculum:** Seasonal changes **Autumn and Winter** **Substantive Concepts:** Seasons, weather and environment changes	Spring 1 **National Curriculum:** Everyday materials **Substantive Concepts: Properties and material uses**
National Curriculum: identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Working Scientifically: asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment, performing simple tests, identifying and classifying, using their observations and ideas to suggest answers to questions, gathering and recording data to help in answering questions.	National Curriculum: observe changes across the four seasons, observe and describe weather associated with the seasons and how day length varies. Working Scientifically: Observing closely, using simple equipment, Identifying and classifying, using their observations and ideas to suggest answers to questions	National Curriculum: 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. Working Scientifically: Observing closely. Identifying and classifying. Performing simple tests. Using observations and ideas to suggest answers to questions. Gathering and recording data.
The Big Question What are bodies and what can they do? Small Steps 1. To recognise and name the body parts 2. To know our 5 senses 3. To investigate and understand our sense of sight 4. To investigate and understand our sense of hearing	The Big Question What changes happen from Autumn to Winter? Small Steps 1. To observe and describe the signs of Autumn 2. To describe the weather in Autumn 3. To describe the signs of Winter 4. To describe the weather in Winter 5. To understand how clothing and activities change in different seasons 6. To compare the seasons of Autumn and Winter	The Big Question Which material would you make an umbrella from and why? Small Steps 1. To identify and name common materials 2. To explore and describe the properties of materials 3. To compare and group materials based on their properties

5. To investigate and understand how we use our sense of smell 6. To investigate and understand how we use our sense of touch		4. To explore which materials are waterproof and which are not 5. To explore and test strength of party hats made of different papers.
Vocabulary Head, neck, arm, elbow, leg, knee, face, ear, eye, hair, mouth, teeth, hand, skin, sight, hearing, touch, smell, taste, body, body parts, senses	**Vocabulary** Autumn, Winter, leaves, trees, plants, cold, wind, weather, rain, warm, season, change, temperature, snow, daylight, signs	**Vocabulary** Hard, soft, stretchy, dull, transparent, opaque, waterproof, absorbent, materials, properties, object, group, compare, purpose, wood, paper, metal, plastic, paper, glass
Post-assessment and Big Question What are bodies and what can they do? Children can label parts of the body. Children can name the senses. – Labelling a diagram and widgits. Children can say what some body parts are used for. – matching to correct picture.	**Post-Assessment and Big Question** What changes happen from Autumn to Winter? Children can describe Autumn and Winter weathers (label a picture). Children can name some signs of Autumn and Winter (label a picture). Children can match clothes/activities to the seasons.	**Post-Assessment and Big Question** Which material would you make an umbrella from and why? Children to label different materials. Children to describe each material with one of the properties. – Table with materials, space to name and write a property.

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YEAR 1		
Spring 2 **National Curriculum:** Plants **Substantive Concepts:** Plants are living things and have many different types	Summer 1 **National Curriculum:** Season changes **Spring and Summer** **Substantive Concepts:** Seasons, weather and environment changes	Summer 2 **National Curriculum:** Animals including Humans **Animals** **Substantive Concepts:**
National Curriculum: 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. **Working Scientifically:** identifying and classifying, using observations and ideas to suggest answers to questions, observing closely using simple equipment	**National Curriculum:** observe changes across the four seasons, observe and describe weather associated with the seasons and how day length varies. **Working Scientifically:** Observing closely, using simple equipment, Identifying and classifying, using their observations and ideas to suggest answers to questions	**National Curriculum:** identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals, identify and name a variety of common animals that are carnivores, herbivores and omnivores, describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) **Working Scientifically:**
The Big Question Are all plants the same? **Small Steps** 1. To know that a plant is a living thing and that living things need water, air, food (nutrition), light and the right temperature to survive. 2. To recognise and name the main parts of a plant (and that they can look different in different plants) 3. To recognise and name different trees and plants that they see regularly. To identify plants by matching them to named images. 4. To understand the difference between and compare deciduous and evergreen trees	**The Big Question** What changes happen from Spring to Summer? **Small Steps** 1. To observe and describe the signs of Spring 2. To describe the weather in Spring and Summer 3. To understand how clothing and activities change in different seasons 4. To observe and describe changes in the environment 5. To compare the seasons of Spring and Summer To collect information of features that change (e.g. plants, animals, humans) through the year and present this information in different ways.	**The Big Question** Are all animals the same? **Small Steps** 1. To identify a variety of common animals 2. To name and group mammals 3. To name and group birds and reptiles 4. To name and group fish and amphibians 5. To group animals based on their diet and know what animals need to survive To explain how animals are suited for their environments

Vocabulary Tree, plant, flower, trunk, stem, leaf, bark, living, water, air, sunlight, deciduous, evergreen, stem, seed, root, growth	**Vocabulary** Season, Spring, Summer, hot, warm, rain, weather, clothes, grow, environment, plants, birth, animals, temperature	**Vocabulary** Mammals, reptiles, bird, amphibians, fish, diet, herbivore, carnivore, omnivore, fur, warm blooded, cold blooded, habitat, eggs, gills, diet, survive, water, food, shelter, air, environments
Post-assessment and Big Question Are all plants the same? Children to label parts of a plant and a tree. Children to list types of plant and tree they remember. – Label a diagram. Make a list.	**Post-Assessment and Big Question** What changes happen from Spring to Summer? Children can describe Spring and Summer weathers (label a picture). Children can match clothes/activities to season. Children can name some environment features in Spring and Summer (label a picture).	**Post-Assessment and Big Question** Are all animals the same? Children to group animals into the groupings – Cut and stick. Children to label the animals (pictures). Children to explain what herbivores, carnivores and omnivores eat – complete sentences.

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YEAR 2	
Autumn 1/2	Spring 1
National Curriculum: Living Things and their habitats Pupils should be taught to: • explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • identify and name a variety of plants and animals in their habitats, including micro-habitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. **Working Scientifically:** Pupils might work scientifically by: sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. They should describe how they decided where to place things, exploring questions for example: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food chain that includes humans (e.g. grass, cow, human). They could describe the conditions in different habitats and micro-habitats (under log, on stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there.	**National Curriculum:** Uses of everyday materials Pupils should be taught to: • 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 **Working Scientifically:** Pupils might work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations
The Big Question How do living things survive? **Small Steps** Autumn 1 1. To understand what "living," "dead," and "never been alive" mean. 2. To explore and compare objects to decide if they are living, dead, or never alive. 3. To identify different habitats (e.g., woodland, pond, garden). 4. To understand that most living things live in habitats that suit them. 5. To describe how habitats provide for the basic needs of plants and animals. 6. To identify and name a variety of plants and animals in different habitats.	**The Biq Question** Which materials are best for different jobs, and why? **Small Steps** 1. To identify a variety of everyday materials (wood, metal, plastic, glass, brick, rock, paper, cardboard) and describe what materials are used for in daily life. 2. To compare different materials and decide which materials are best suited for particular uses.

7. To explore micro-habitats (e.g., under logs, in soil, in ponds). 8. To compare habitats to see how they meet the needs of living things. 9. To understand that animals get their food from plants and other animals. 10. To identify simple food chains (e.g., grass → rabbit → fox) 11. To name different sources of food for animals and humans. 12. To explore how plants and animals depend on each other to survive. 13. To identify examples of animals and plants that rely on one another. 14. To observe animals and plants in the local environment. 15. To record observations using pictures, charts, or simple tables. 16. To describe patterns noticed in different habitats.	3. To explore how materials can be hard or soft, flexible or rigid, and other simple properties. To record observations using drawings or simple charts. 4. To find out how some materials can change shape (explore bending, squashing, twisting, and stretching materials). 5. To test different materials to see how their shape changes under different forces. To explain which materials are easy or hard to change and why. 6. To compare and decide which materials are suitable for given purposes based on their properties. To explain findings using scientific vocabulary (material, bend, squash, twist, stretch).
Vocabulary Living, dead, alive, never been alive, habitat, woodland, pond, garden, hedgerow, garden, basic needs, micro-habitats (under logs, in soil, in ponds), food, plants, animals, food chain, food source, depend, survive, rely.	**Vocabulary** Everyday materials, wood, metal, plastic, brick, glass, rock, paper, cardboard etc, hard, soft, flexible, rigid etc, change shape, bend, twist, squash, stretch.
Post-assessment and Big Question How do living things survive? Design a habitat for a chosen animal and present and explain.	**Post-Assessment and Big Question**

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Spring 2	Summer 1/ Summer 2
National Curriculum: Plants Pupils should be taught to: • 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. • **Working Scientifically:** Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.	**National Curriculum:** Animals including Humans Pupils should be taught to: • 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 exercise, eating the right amounts of different types of food, and hygiene. **Working Scientifically:** Pupils might work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions
The Big Question: What do plants need to grow and stay healthy? **Small Steps** 1. To name different parts of a plant (root, stem, leaf, flower) and say what plants need to grow (water, light, suitable temperature). 2. To describe what each part of a plant does and explain why water, light, and a suitable temperature are important for plants. 3. To describe the changes that occur as seeds and bulbs grow into mature plants. 4. To plan and carry out a simple test to see how water, light, or temperature affects plant growth and record what happens in the test using drawings, labels, or simple charts. 5. To compare how plants grow under different conditions and notice patterns or differences in plant growth from observations. 6. To explain how to help plants grow and stay healthy based on observations.	**The Big Question** **Small Steps** 1. To notice that animals, including humans, have offspring which grow into adults. 2. To describe the stages of growth from offspring to adult. 3. To compare the appearance and needs of offspring and adults. 4. To find out about the basic needs of animals for survival (water, food, air). 5. To find out about the basic needs of humans for survival (water, food, air). 6. To describe why water, food, and air are important for survival. 7. To explore the effects of not having enough food, water, or air. 8. To describe the importance of exercise for humans. 9. To describe the importance of eating the right amounts of different types of food. 10. To identify different types of food and group them into categories (e.g., protein, carbohydrates, fruits/vegetables). 11. To describe the importance of hygiene for humans. 12. To explore ways to keep healthy through diet, exercise, and hygiene. 13. To observe and compare the needs of different animals and humans.

	14. To record observations and describe patterns in how animals and humans grow and stay healthy.
Vocabulary Root, leaf, stem, flower, water, light, temperature, seeds, bulbs, mature plants, seedlings, conditions, healthy.	**Vocabulary** Offspring, adults, growth, appearance, needs, water, food, air, exercise, food groups, nutrients, hygiene, healthy.

YEAR 3		
Autumn 1	Autumn 2	Spring 1
National Curriculum: Rocks Pupils should be taught to: • 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. Working Scientifically: Pupils might work scientifically by: observing rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time; using a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. Pupils might research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed.	National Curriculum: Forces and Magnets Pupils should be taught to: • compare how things move on different surfaces • notice that some forces need contact between two objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others • compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • describe magnets as having two poles • predict whether two magnets will attract or repel each other, depending on which poles are facing. Working Scientifically: Pupils might work scientifically by: comparing how different things move and grouping them; raising questions and carrying out tests to find out how far things move on different surfaces and gathering and recording data to find answers their questions; exploring the strengths of different magnets and finding a fair way to compare them; sorting materials into those that are magnetic and those that are not; looking for patterns in the way that magnets behave in	National Curriculum: Forces and Magnets Pupils should be taught to: • compare how things move on different surfaces • notice that some forces need contact between two objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others • compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • describe magnets as having two poles • predict whether two magnets will attract or repel each other, depending on which poles are facing. Working Scientifically: Pupils might work scientifically by: comparing how different things move and grouping them; raising questions and carrying out tests to find out how far things move on different surfaces and gathering and recording data to find answers their questions; exploring the strengths of different magnets and finding a fair way to compare them; sorting materials into those that are magnetic and those that are not; looking for patterns in the way that magnets behave in

Pupils could explore different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they are in water. They can raise and answer questions about the way soils are formed.	relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another; identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.	relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another; identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.
The Big Question Are all the Rocks the same? Small Steps 1. To observe how rocks can change over time and to sort them by their appearance. 2. To test how hard different types of rocks are and compare them. 3. To test how much water different rocks can absorb. 4. To observe and compare different rocks based on appearance. 5. To understand how fossils are formed in rocks, using books and other sources to find out. 6. To observe and sort different types of soil and know that soil is made from rocks and living things. 7. To test how well different soils hold water.	The Big Question: What are forces? Small Steps <u>Substantive</u> 1. To explore how some forces need contact between two objects (like pushing and pulling). 2. To plan and carry out a fair test to compare the strength of different forces. To use a force meter (Newton meter) to measure force. 3. To record and present results using drawings, labels, tables and simple scientific language. 4. To test how different surfaces affect how an object moves. To measure the force needed using a force meter. 5. To record and explain what I found out, using simple scientific words, diagrams and tables.	The Biq Question: How do magnets work? Small Steps 1. To find out which materials are magnetic and which are not. 2. To predict and test whether two magnets will attract or repel each other. 3. To explore how magnets can work through different materials like water or tables. 4. To understand that magnets can pull or push without touching. 5. To test how strong different magnets are. 6. To explore how magnets behave and know that they have two poles.
Vocabulary Fossilisation, process, sediment, erosion, weathering, cast Sedimentary, metamorphic, igneous rock, crystals, organic matter, permeable, impermeable	Vocabulary Force, push, pull, contact, surface, grip, friction, resistance, strong, weak, big, small, newton meter, newtons, gravity.	Vocabulary Magnetic pole, attract, repel, opposites, push, pull, strength, poles, north, south
Post-assessment and Big Question	Post-Assessment and Big Question	Post-Assessment and Big Question

Are all rocks the same? Name 3 types of rock (Igneous, sedimentary and metamorphic) and how formed, sort rocks based on properties, explain how a fossil is formed, explain what makes up soils.	What are forces? Forces are pushes/ pulls, grip and friction can change the amount of force needed for a push or pull, force is measured in newtons, reading a newton meter accurately.	How do magnets work? Magnets can attract or repel, magnets have 2 poles (north and south), testing magnetism – questions to test recall from practical (e.g. strength of magnet by number of paperclips it picks up), opposites attract, likes repel.

YEAR 3		
Spring 2	Summer 1	Summer 2
National Curriculum: Plants Pupils should be taught to: • 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. **Working Scientifically:** Pupils might work scientifically by: comparing the effect of different factors on plant growth, for example, the amount of light, the amount of fertiliser; discovering how seeds are formed by observing the different stages of plant life cycles over a period of time; looking for patterns in the structure of fruits that relate to how the seeds are dispersed. They might observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.	**National Curriculum:** Light Pupils should be taught to: • 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 byan opaque object • find patterns in the way that the size of shadows change. **Working Scientifically:** Pupils might work scientifically by: looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes. **Note:** Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.	**National Curriculum:** Animals, including humans Pupils should be taught to: • identify that animal, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • identify that humans and some other animals have skeletons and muscles for support, protection and movement. **Working Scientifically:** Pupils might work scientifically by: identifying and grouping animals with and without skeletons and observing and comparing their movement; exploring ideas about what would happen if humans did not have skeletons. They might compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. They might research different food groups and how they keep us healthy and design meals based on what they find out.
The Big Question: What is the importance of each part of a plant?	**The Big Question:** How does light work?	**The Biq Question**: How can living things stay healthy?

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Small Steps 1. To identify and describe the parts of a flowering plant and what they do. 2. To observe what happens to a plant when its leaves are taken off. 3. To find out how water moves through a plant using coloured water. 4. To investigate what happens to plants in different conditions (light, air, temperature, space, soil). 5. To understand how plants make new plants through pollination and to observe pollen and pollinators. 6. To learn how seeds are spread in different ways and to group seeds by how they are dispersed.	**Small Steps** 1. To know we need light to see and that dark means no light. To find out how light helps us see and how to protect our eyes from the sun. 2. To know that light travels in straight lines and to explore how shadows change when the light source or object moves. 3. To understand and sort materials into opaque, transparent and translucent. 4. To test how well different surfaces reflect light and to spot patterns. 5. To know that shadows form when light is blocked and to choose good materials for making shadow puppets. 6. To explore how the size and shape of shadows change and to record what we find using diagrams with arrows for the direction of light.	**Small Steps** 1. To know that animals, including humans, need to eat food to get nutrients and cannot make their own food. 2. To explore the nutrients in different foods by looking at food labels and doing research. 3. To plan a healthy daily diet with a good balance of nutrients. 4. To know that humans and some animals have skeletons and muscles to help them move, stay upright, and protect their bodies. 5. To compare and group animals by their skeletons and name some of the bones in the human body. 6. To understand how muscles and joints help humans and animals to move. 7. To investigate questions like "Do people with longer legs run faster?" using pattern-seeking.
Vocabulary Roots, stem, leaves, flower, petals, anther, stamen, stigma, pollen, pollination, seed formation, seed dispersal, nutrients, water, air, light, uptake, photosynthesis.	**Vocabulary** Mirror, Reflection, shadows, light source, man-made, natural, opaque, transparent, translucent, blocking light, dark.	**Vocabulary** Nutrition, nutrients, carbohydrates, proteins, fats (saturated/unsaturated), skeleton, muscles, diet, joint, pelvis, cartilage, rib cage, tendon, spine.
Post-assessment and Big Question *What is the importance of each part of a plant?* Label parts of plant and explain function, different ways for seed dispersal (wind, animals etc), what does a plant need to survive? stages of life cycle of flowering plant.	**Post-Assessment and Big Question** *How does light work?* Natural/ man-made light sources, definitions/ examples of opaque, transparent, translucent, mirror, reflection, dark, light, eyes, diagram to show how light travels – eg in straight lines to the eye/ bouncing off surfaces when reflected.	**Post-Assessment and Big Question** ***How can living things stay healthy?*** *Ba*lanced plate, nutrient groups, bones in the skeleton, function of bones (support/ protecting internal organs), muscles, impact of exercise on heart rate and breathing.

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YEAR 4		
Autumn 1	Autumn 2	Spring 1
National Curriculum: States of Matter Pupils should be taught to: • 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. **Working Scientifically:** Pupils might work scientifically by: grouping and classifying a variety of different materials; exploring the effect of temperature on substances such as chocolate, butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party). They could research the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. They might observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing drying or snowmen melting.	**National Curriculum:** Water Cycle Pupils should be taught to: • 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. **Working Scientifically**: Pupils might work scientifically by: grouping and classifying a variety of different materials; exploring the effect of temperature on substances such as chocolate, butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party). They could research the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. They might observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing drying or snowmen melting.	**National Curriculum:** Electricity Pupils should be taught to: • 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. **Working Scientifically:** Pupils might work scientifically by: observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.

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The Big Question: Is it a solid, liquid or a gas?	The Biq Question: Is water always wet?	The Big Question: How does electricity work?
Small Steps: 1. To know the differences between solids, liquids and gases. 2. To compare and group materials based on whether they are solids, liquids or gases. 3. To describe what happens to particles when materials change state (melting, freezing, boiling) 4. To describe what happens to particles when materials change state evaporation and condensation). 5. To know that some materials change state when they are heated or cooled. 6. To use a thermometer to measure temperature and record changes in °C. 7. To know that not all liquids behave the same and can have different properties.	Small Steps: 1. To measure or research the temperature at which different materials change state. To know that water boils at 100°C and freezes at 0°C. 2. To know the four stages of the water cycle: evaporation, condensation, precipitation and collection. 3. To understand what happens to particles when materials change state (melting, freezing, boiling, condensation and evaporation) in relation to the water cycle. 4. To know that the rate of evaporation can change depending on the temperature. And explain how changes in temperature affect water in the water cycle. 5. To understand how the water cycle affects the environment (e.g. causing flooding or drought).	Small Steps: 1. To know a variety of common appliances that use electricity. To work safely when using electrical equipment. 2. To know how to build a simple series circuit and name its basic parts (cells, wires, bulbs, buzzers, switches). 3. To know that a circuit needs to be a complete loop for it to work. To draw a simple circuit diagram using correct symbols. 4. To know that a switch can open or close a circuit and affects whether components like bulbs light up. 5. To test whether a lamp will light in a circuit, based on whether it's part of a complete loop. 6. To identify materials that are conductors or insulators, and to know that metals are good conductors.
Vocabulary Change, collection, condensation, evaporation, freeze, gas, heat, liquid, precipitation, property, solid, temperature, fair test	Vocabulary Evaporation, condensation, precipitation, run-off, transpiration, aquifer water vapor, infiltration, atmosphere, cloud	Vocabulary Circuit, buzzers, bulb, motor, battery, cells. Switch, socket, appliance, series circuit, insulator, conductor, amps, volts
Post-assessment and Big Question *Is it a solid, liquid or a gas?* Quiz – changing states - solids/ liquids/ gases, particles diagrams link to state of matter, differences in liquids, boiling and freezing points of water.	Post-Assessment and Big Question *Is water always wet?* Quiz – water cycle – 4 stages of water cycle (evaporation, condensation, precipitation, collection) – label diagram and definitions, extremes – drought and flooding, interpreting data.	Post-Assessment and Big Question *How does electricity work?* Quiz – electricity – name components, simple series circuit diagram to draw/ complete, impact of number of cells, switches, conductors/ insulators of electricity.

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YEAR 4		
Spring 2	Summer 1	Summer 2
National Curriculum: Living things and their Habitats Pupils should be taught to: • 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. **Working Scientifically:** Pupils might work scientifically by: using and making simple guides or keys to explore and identify local plants and animals; making a guide to local living things; raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched.	**National Curriculum:** Animals, including Humans Pupils should be taught to: • 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. **Working Scientifically:** Pupils might work scientifically by: comparing the teeth of carnivores and herbivores, and suggesting reasons for differences; finding out what damages teeth and how to look after them. They might draw and discuss their ideas about the digestive system and compare them with models or images.	**National Curriculum:** Sound Pupils should be taught to: • identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases. **Working Scientifically:** Pupils might work scientifically by: finding patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. They might make earmuffs from a variety of different materials to investigate which provides the best insulation against sound. They could make and play their own instruments by using what they have found out about pitch and volume.
The Big Question: What questions could you ask to sort a group of living animals/ plants? **Small Steps**	**The Big Question: What do our bodies do with the food we eat?** **Small Steps:**	**The Biq Question: How do we hear sounds?** **Small Steps:** 1. To explore how sounds are made through vibrations using different musical instruments.

1. To know the difference between animals with backbones (vertebrates) and animals without backbones (invertebrates). 2. To use simple keys and questions to help sort and name different living things around us. 3. To observe and talk about plants and animals in different habitats during the year. 4. To group plants in different ways, including flowering and non-flowering plants, and know how they are different. 5. To explore how people can help or harm the environment (e.g. picking up litter or dropping it, creating nature reserves). Use local fieldwork to see this in action. 6. To use books, websites, and other sources to find out how people affect the environment in good and bad ways. To understand that environments can change, like when the seasons change, and that this can sometimes make it hard for animals and plants to survive (e.g. floods, droughts, fires).	1. To name the main parts of the digestive system and describe what each part does. To make a model to show how the digestive system works. 2. To identify the different types of human teeth and explain their simple functions. To create a model showing the different types of teeth. 3. To explore eating different types of food and explain how different teeth help us chew, bite and tear. 4. To classify animals as carnivores, herbivores or omnivores by looking at their teeth and understanding what they eat. 5. To create and explain food chains using the terms producer, predator and prey. 6. To use food chains to show what animals eat in different habitats. To research animals and their diets using books, websites and other sources.	2. To know that sound is made by vibrations and that these vibrations travel through air or other materials to reach our ears. 3. To know that the pitch of a sound can be changed. 4. To plan and carry out a fair test to find out how the pitch of a sound depends on the size, length or tightness of the object making it. 5. To plan and carry out a fair test to find out how to amplify the volume of a sound. 6. To plan and carry out a fair test to test whether sounds get quieter as you move further away from the sound source. 7. To test different materials to find out which ones are best at blocking or reducing sound (sound insulators).
Vocabulary Habitat, environment, fish, amphibians, reptiles, birds, mammals, invertebrates, flowering plants, non-flowering plants, ecology, deforestation, classification	Vocabulary Digestion, organ, mouth, salivary glands, oesophagus, small intestine, large intestine, liver, pancreas, rectum, anus, excrete, teeth, incisors, canines, molars, food chain, predators, prey, producer, carnivore, herbivore	Vocabulary Sound energy, vibration, pitch, volume, amplify, insulation, auditory, outer, middle and inner ear, cochlea, hammer frequency, decibels
Post-assessment and Big Question *What questions could you ask to sort a group of living animals/ plants?* Quiz – invertebrates/ vertebrates – definitions and sorting, label flowering/ non flowering plant, classification key – complete, difference between flowering/ non flowering plant.	Post-Assessment and Big Question *What do our bodies do with the food we eat?* Quiz – Digestion/ Food chains – label organs in digestive system, function of digestive organs, label teeth types and match to correct names, food chains, producer, predator prey, herbivore, carnivore, omnivore.	Post-Assessment and Big Question *How do we hear sounds?* Quiz – Sound – Parts of ear, vibration, change to vibration with change to volume/ pitch, insulation/ amplification of sound, impact of distance on sound and hearing.

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YEAR 5		
Autumn1	Autumn 2	Spring1
National Curriculum: Properties & changes of materials **Pupils should be taught to:** • 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 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 usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	**National Curriculum: Properties & changes of materials** **Pupils should be taught to:** • 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 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 usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. **Working Scientifically:** Pupils might work scientifically by: carrying out tests to answer questions, for example, 'Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it	**National Curriculum: Living things and their habitats** **Pupils should be taught to:** • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plants and animals. **Working Scientifically:** Pupils might work scientifically by: observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. They might observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow.

Working Scientifically: Pupils might work scientifically by: carrying out tests to answer questions, for example, 'Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it melting, or for making blackout curtains?' They might compare materials in order to make a switch in a circuit. They could observe and compare the changes that take place, for example, when burning different materials or baking bread or cakes. They might research and discuss how chemical changes have an impact on our lives, for example, cooking, and discuss the creative use of new materials such as polymers, super-sticky and super-thin materials.	melting, or for making blackout curtains?' They might compare materials in order to make a switch in a circuit. They could observe and compare the changes that take place, for example, when burning different materials or baking bread or cakes. They might research and discuss how chemical changes have an impact on our lives, for example, cooking, and discuss the creative use of new materials such as polymers, super-sticky and super-thin materials.	
The Big Question What's the best material for an Arctic explorer's gloves? **Small Steps** 1. To classify materials based on their physical properties (hardness, transparency, conductivity, magnetism). 2. To compare materials and suggest why they are used for different purposes. 3. To test how well materials conduct heat (thermal conductivity). 4. To investigate the solubility of different materials in water. 5. To investigate how mixtures can be separated by filtering, sieving and evaporation. 6. To plan and carry out a comparative test for material uses.	**The Big Question** What's the best material for an Arctic explorer's gloves? **Small Steps** 1. To explain how to recover a substance from a solution. 2. To demonstrate that dissolving, mixing and changes of state are reversible. 3. To explain that some changes form new materials and are not reversible. 4. To test how well materials conduct electricity. 5. To give reasons for the use of materials based on test evidence. To consolidate knowledge of material properties and changes through investigation. - linked to post assessment focus	**The Biq Question** Where do animals live? **Small Steps** 1. To describe the stages in the life cycle of a mammal. 2. To compare the life cycles of an amphibian, an insect, and a bird. 3. To describe how the life cycles of mammals, amphibians, insects, and birds are different and similar. 4. To describe how some plants reproduce. 5. To describe how some animals reproduce. 6. To describe how some animals reproduce.

Vocabulary Materials, properties, waterproof, absorbent, insulator, conductor, flexible, rigid, durable, transparent, opaque, magnetic, permeable, synthetic, natural	**Vocabulary** Mixture, solution, dissolve, soluble, insoluble, evaporation, condensation, filtering, sieving, reversible, irreversible, reaction, new material	**Vocabulary**
Post-assessment and Big Question Knowledge organiser for materials – variety of activities with picture prompts and quiz.	**Post-assessment and Big Question** Design a pair of arctic explorer gloves, with explanation for choices	**Post-Assessment and Big Question** Design a new habitat – including plants, shelters, food sources and animals – explain why it is suitable for the animals living there

YEAR 5		
Spring 2 – 5 weeks	Summer 1 – 5 weeks	Summer 2
National Curriculum: Earth & Space **Pupils should be taught to:** • 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 • 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. **Working Scientifically:** Pupils might work scientifically by: comparing the time of day at different places on the Earth through internet links and direct communication; creating simple models of the solar system; constructing simple shadow clocks and sundials, calibrated to show midday and the start and end of the school day; finding out why some people	**National Curriculum: Forces** **Pupils should be taught to:** • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • identify the effects of air resistance, water resistance and friction, that act between moving surfaces • recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. **Working Scientifically:** Pupils might work scientifically by: exploring falling paper cones or cup-cake cases, and designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective. They might explore resistance in water by making and testing boats of different shapes. They might design and make products that use levers, pulleys, gears and/or springs and explore their effects.	**National Curriculum: Animals, including humans** **Pupils should be taught to:** • describe the changes as humans develop to old age. **Working Scientifically:** Pupils could work scientifically by researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows.

think that structures such as Stonehenge might have been used as astronomical clocks.		
The Big Question What's out there? The Big Space Adventure **Small Steps** 1. To describe the movement of the Earth and other planets relative to the Sun in the solar system. 2. To describe the movement of the Moon relative to the Earth. 3. To describe the Sun, Earth, and Moon as approximately spherical bodies. 4. To use the idea of the Earth's rotation to explain day and night. 5. To explain the apparent movement of the Sun across the sky.	**The Big Question** What force is in action? **Small Steps** 1. To explain that unsupported objects fall towards the Earth because of the force of gravity. 2. To investigate how gravity acts between the Earth and a falling object. 3. To identify the effects of air resistance on moving objects. 4. To investigate how the shape of an object affects air resistance. 5. To identify the effects of water resistance on moving objects. 6. To recognise the effects of friction between moving surfaces. 7. To recognise that some mechanisms, including levers, pulleys, and gears, allow a smaller force to have a greater effect.	**The Biq Question** How do humans change as the age? **Small Steps** 1. To describe the stages of human growth from birth to childhood. 2. To explain how babies and young children change as they grow. 3. To describe the main physical and emotional changes during puberty. 4. To explain how adolescence leads to adulthood and independence. 5. To describe the changes that happen in adulthood, including health and lifestyle. 6. To describe the changes that happen in old age and how bodies change over time. 7. To explain the whole human life cycle and the key changes from birth to old age.
Vocabulary Solar System, Sun, Star, Planet, Moon, Orbit, Rotate / Rotation, Revolve / Revolution, Satellite (natural and artificial), Astronaut, Telescope, Spacecraft / Rocket, Gravity, Atmosphere	**Vocabulary**	**Vocabulary**
Post-assessment and Big Question Post assessment – build a model solar system	**Post-Assessment and Big Question**	**Post-Assessment and Big Question**

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YEAR 6		
Autumn 1	Autumn 2	Spring 1
National Curriculum: Light **Pupils should be taught to:** • recognise that light appears to travel in straight lines • 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 • explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them **Working Scientifically:** Pupils might work scientifically by: deciding where to place rear-view mirrors on cars; designing and making a periscope and using the idea that light appears to travel in straight lines to explain how it works. They might investigate the relationship between light sources, objects and shadows by using shadow puppets. They could extend their experience of light by looking a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water, and coloured filters (they do not need to explain why these phenomena occur).	**National Curriculum: Animals including humans** **Pupils should be taught to:** • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • recognise the impact of diet, exercise, drugs and lifestyle on the way their body's function • describe the ways in which nutrients and water are transported within animals, including humans **Working Scientifically:** Pupils might work scientifically by: exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.	**National Curriculum: Evolution and inheritance** **Pupils should be taught to:** • recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution **Working Scientifically:** Pupils might work scientifically by: observing and raising questions about local animals and how they are adapted to their environment; comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels. They might analyse the advantages and disadvantages of specific adaptations, such as being on 2 feet rather than 4, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.

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The Big Question. How do we see things? Small Steps 1. To know that light travels in straight lines 2. To know how light reflects off objects and that is how we see things 3. To know how shadows are formed 4. To know, understand and apply the law of reflection To know what refraction is 5. To know that light can be split into a spectrum and what a prism is. 6. Post Assessment – How does light travel and how do we see.	The Big Question. How does the circulatory system keep us alive and healthy, and how do our lifestyles affect our bodies? Small Steps 1. To know the main parts of the circulatory system 2. To know how blood travels around the body and its functions 3. To know the function of the circulatory system 4. To know the impact of diet, exercise and lifestyle 5. To know the impact of drugs and alcohol To recognise the importance of a healthy lifestyle.	The Big Question. How do living things change over time? Small Steps 1. To know that living things have changed over time: 2. To know that fossils are evidence of past life and that fossils are made when living things die trapped within rock. 3. To know that offspring vary and are not identical to their parents: 4. To know inherited and environmental characteristics: 5. To know how animals and plants are adapted to suit their environment and that adaptation may lead to evolution: To know about the theory of evolution by natural selection:
Vocabulary – light, source, reflection, opaque, transparent, translucent, shadow, prism, spectrum, incident ray, reflected ray.	Vocabulary circulatory system (heart, blood, blood vessels, arteries, veins, oxygen, carbon dioxide diet, exercise, drugs, lifestyle, nutrients, water	Vocabulary adaptation, natural selection, inheritance, evolution, variation, species, fossil, and offspring.
Post-assessment and Big Question. How do we see things? Children use diagrams and explanations to recall their key learning (based on small steps learning above and working scientifically).	Post-Assessment and Big Question How does the circulatory system keep us alive and healthy, and how do our lifestyles affect our bodies? Children draw parts of the circulatory system. Assessment based on learning content of small steps above	Post-Assessment and Big Question How do living things change over time? Quiz based on small steps learning content - using diagrams

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YEAR 6		
Spring 2	Summer 1	Summer 2
National Curriculum: Living things and their Habitats Pupils should be taught to: • 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 • give reasons for classifying plants and animals based on specific characteristics Working Scientifically: Pupils might work scientifically by: using classification systems and keys to identify some animals and plants in the immediate environment. They could research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.	National Curriculum: Electricity Pupils should be taught to: • associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • 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 • use recognised symbols when representing a simple circuit in a diagram Working Scientifically: Pupils might work scientifically by: systematically identifying the effect of changing one component at a time in a circuit; designing and making a set of traffic lights, a burglar alarm or some other useful circuit.	National Curriculum: Healthy Lifestyles Working Scientifically:
The Big Question – How are animals and plants classified into groups? Small Steps 1. To know that animals are classified through observable characteristics 2. To know how to sort and group animals using a classification key 3. To know how to sort and group plants using a classification key. 4. To know what microorganisms are and how they are organised.	The Big Question How can we use and control electricity in our lives? Small Steps 1. To know how to draw a scientific diagram of a circuit 2. To know what a conductor and an insulator is. 3. To know how voltage in a circuit affects the brightness in a bulb. 4. To know how to plan a fair test To know how to carry out a fair test to investigate variations in how components function	The Biq Question Small Steps

5. To know that yeast is a living organism		
Vocabulary – microorganism, species, characteristics, classification, organism, vertebrate, invertebrate.	• Vocabulary Voltage, brightness, switches, series, circuit, components, bulb, buzzer, symbols	Vocabulary
Post-assessment and Big Question How are animals and plants classified into groups? Classify and sort animals – quiz based on small steps and working scientifically learning	Post-Assessment and Big Question how can we use and control electricity in our lives? Label an electricity circuit and explain how the circuit works.	Post-Assessment and Big Question