



Chantlers
Primary School

A World of Possibilities



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Science Curriculum

Chantlers Primary School

Science Curriculum Sequencing & Knowledge

Overview of units per year group		
Year Group	Term	Topic Title(s)
Year 1	Autumn	- Human Body & Senses- Seasonal Change- Materials
	Spring	- Animals- Planting A & B- Caring for the Planet
	Summer	- Planting B & C- Cooking & Growing- Seasonal Change (Summer)
Year 2	Autumn	- Animal Needs for Survival- Humans (Health & Hygiene)- Materials- Sustainability
	Spring	- Plants (Light & Dark)- Living Things and Their Habitats
	Summer	- Bulbs and Seeds- Growing Up- Wildlife
Year 3	Autumn	- Skeletons- Nutrition & Diet- Rocks
	Spring	- Fossils- Soils- Light
	Summer	- Plants- Forces- Magnets
Year 4	Autumn	- Group & Classify Living Things- States of Matter
	Spring	- Sound- Electricity
	Summer	- Habitats- Digestive System- Food Chains
Year 5	Autumn	- Forces- Space
	Spring	- Properties of Materials- Animals Including Humans- Life Cycles
	Summer	- Reproduction A & B- Reversible & Irreversible Changes
Year 6	Autumn	- Living Things and Their Habitats- Electricity
	Spring	- Light- Circulatory System
	Summer	- Diet, Drugs & Lifestyle- Variation & Adaptation- Fossils

	Autumn (5 weeks)	Autumn (1 week)	Autumn (4 weeks)	Autumn (1 week)
Year 1	Factual Knowledge for Year 1	Factual Knowledge for Year 1	Factual Knowledge for Year 1	Factual Knowledge for Year 1
Factual knowledge gained per unit of study	The Human Body - The human body has many parts, each with a specific name. - Common body parts include: head, neck, arms, elbows, hands, legs, knees, feet, face, ears, eyes, nose, hair, mouth, and teeth. - Humans use eyes to see. - Sight depends on the presence of light. - It is difficult or impossible to see in the dark. - Some people are blind and cannot see. - Humans use ears to hear. - Sounds can be loud or quiet. - You can hear multiple sounds at once. - Some people have hearing impairments. - The tongue, located in the mouth, is used to taste. - There are five basic tastes: sweet, salty, sour, bitter, and savoury. - Taste buds are located throughout the mouth, not in specific zones. - Skin helps humans sense touch. - Skin covers the whole body. - Different textures can be identified using various parts of the body.	Seasonal Change - There are four seasons in a year: spring, summer, autumn, and winter. - Autumn comes after summer and before winter. - During autumn: - The hours of daylight become shorter. - Nights become longer. - The weather becomes cooler. - Some trees lose their leaves. - Trees shedding leaves is a natural and recurring process, not a sign the tree is dead. - Autumn weather can be varied and changes over time. - Weather conditions can be observed and recorded daily. - A rain gauge can measure how much rain falls. - The amount of daylight decreases gradually in autumn. - Weather changes influence what clothes are appropriate to wear.	Materials - Objects are made from different materials. - Materials have different textures (e.g. soft, hard, shiny, dull). - Materials can be sorted by their properties. - There are different types of rock. - Rocks come in various shapes, sizes, and textures. - Rocks can be used in everyday life, like building walls. - An object is something you can see and touch. - A material is what the object is made from. - The same object can be made from different materials. - Different objects can be made from the same material. - When water freezes, it becomes ice. - When ice melts, it turns back into water. - Melting and freezing are reversible changes. - Some materials float in water (stay on top). - Some materials sink in water (fall to the bottom). - Objects can float or sink regardless of their size or material.	Seasonal Change - There are four seasons in a year: spring, summer, autumn, and winter. - Winter comes after autumn and before spring. - In winter: - The weather is often colder. - There are fewer hours of daylight, and the nights are longer. - Some trees lose their leaves, while others keep them. - There may be snow or frost (not always). - Common objects associated with winter: pinecones, holly leaves, gloves, hats, scarves.

	• The nose is used to smell. • Smells can be strong or faint, pleasant or unpleasant. • Some objects have a more noticeable scent than others.		• Some materials absorb water (take in liquid). • Some materials do not absorb water (repel liquid). • Absorbency can be tested through simple experiments. • Transparent materials let light through. • Opaque materials do not let light through. • The best curtain materials are those that block light and hold shape.	
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Lesson Sequence Learning challenges in a sequenced order.	Step 1 Can I identify and name the basic parts of the human body? Step 2 Can I draw and label the parts of the human body accurately? Step 3 Can I explain which body part I use to see and what affects my sight? Step 4 Can I identify the body part used for hearing and describe different sounds? Step 5 Can I name the part of the body used for taste and identify different types of taste? Step 6 Can I identify the part of the body used for touch and describe textures? Step 7 Can I name the part of the body used for smell and describe different scents?	Step 1 Can I describe the main changes that happen in autumn? Step 2 Can I collect and record information about the weather in autumn?	Step 1 Can I explore and describe different materials like wood, plastic, glass, and metal? Step 2 Can I describe and sort rocks by their properties? Step 3 Can I tell the difference between an object and the material it is made from? Step 4 Can I describe what happens when water freezes and when ice melts? Step 5 Can I test and find out which objects float and which sink? Step 6 Can I find out which materials absorb water and which do not? Step 7 Can I investigate which material is best for making curtains?	Step 1 Can I describe what makes winter different from the other seasons? Step 2 Can I collect and record information about the winter weather and changes in daylight?
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NC Links	• Identify, name, draw and label the basic parts of the human body. • Say which part of the body is associated with each sense. • Working scientifically: • Asking simple questions and recognising they can be answered in different ways. • Using observations and ideas to suggest answers to questions. • Performing simple tests.	• Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies. • Working scientifically: • Asking simple questions and recognising they can be answered in different ways. • Gathering and recording data to help in answering questions.	• 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. • Distinguish between an object and the material from which it is made. • Working scientifically: • Identifying and classifying • Observing closely using simple equipment • Performing simple tests • Using their observations and ideas to suggest answers to questions • Gathering and recording data to help in answering questions	• Observe changes across the four seasons. • Observe and describe weather associated with the seasons, including how day length varies. • Working scientifically: • Asking simple questions and recognising that they can be answered in different ways. • Gathering and recording data (e.g. through pictorial weather charts) to help answer questions about seasonal changes.
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	Spring (1 week)	Spring (6 weeks)	Spring (2 weeks)	Spring (1 week)	Spring (1 week)
Year 1 Factual knowledge gained per unit of study	Factual Knowledge for Year 1 Planting A - A plant is a living thing that usually grows in soil. - Some plants have roots, a stem, leaves and flowers. - A seed can be planted to grow into a new plant. - Some seeds can be planted in winter but must be kept warm to grow.	Factual Knowledge for Year 1 Animals - Mammals have fur or hair on their bodies. - Some mammals can be kept as pets. - Some mammals live in the wild. - Birds have beaks, wings and feathers. - Some birds can fly. - Some birds cannot fly. - Some birds can swim. - Some birds cannot swim. - ish live in water. - Some fish have scales on their bodies. - Fish have fins to help them swim. - Most fish have gills that help them breathe underwater. - Amphibians live on land and in water. - Amphibians have webbed feet. - Frogs, toads and newts are amphibians. - Reptiles have dry skin. - Reptiles have scales on their bodies. - Lizards, snakes, crocodiles and turtles are reptiles. - There are different types of animals. - Animals have different features. - Some animals are carnivores. - Carnivores eat other animals. - Many carnivores have sharp teeth and claws. - Some animals are herbivores. - Herbivores eat plants including grass, fruits and vegetables. - Some herbivores eat seeds and nuts. - Herbivores have flat teeth for chewing plants. - Omnivores eat other animals and plants. - Some animals are carnivores. - Some animals are herbivores. - Some animals are omnivores.	Factual Knowledge for Year 1 Caring for the Planet - Everyone should look after the planet. - Some actions help the Earth. - Some actions harm the Earth. - Looking after the planet helps to care for humans, other animals and plants. - Everyone should look after the planet. - Some actions are helpful for the Earth. - Some actions are harmful for the Earth. - Looking after the planet helps to care for humans, other animals and plants.	Factual Knowledge for Year 1 Seasonal Change - There are four seasons in one year. - The season names are spring, summer, autumn and winter. - In spring, plants start to grow. - In spring, some trees regrow their leaves. - In spring, there are more hours of daylight and the nights start to become shorter. - In spring, plants start to grow. - In spring, some trees regrow their leaves. - There are more daylight hours and the nights are shorter in spring. - The weather often changes quickly in spring.	Factual Knowledge for Year 1 Planting B - A plant is a living thing that usually grows in soil. - Some plants have roots, a stem, leaves and flowers. - A seed can be planted to grow into a new plant. - The stem will grow in length. - The plant will grow new leaves. - The roots will become longer. - A plant is a living thing that usually grows in soil. - Some plants have roots, a stem, leaves and flowers. - Seeds can be planted to grow into new plants. - In spring, the weather is usually warmer and plants can grow outside.

Lesson Sequence Learning challenges in a sequenced order.	Step 1 Can I plant seeds and describe how my plant changes over time?	Step 1 Can I identify mammals and describe what makes them mammals? Step 2 Can I identify birds and name their features? Step 3 – Can I identify fish and describe how they live and move? Step 4 Can I name amphibians and describe where they live and their features? Step 5 Can I name reptiles and describe their features? Step 6 Can I sort animals into groups and explain how they are similar or different? Step 7 Can I identify carnivores and explain what they eat? Step 8 Can I identify herbivores and explain what they eat? Step 9 Can I identify omnivores and explain what they eat?	Step 1 Can I explain why it is important to care for our planet? Step 2 Can I describe ways we can help care for our planet?	Step 1 Can I describe the changes that happen in spring? Step 2 Can I collect and record data about spring weather and describe how it changes?	Step 1 Can I describe how my plants have changed over time? Step 2 Can I plant seeds and explain how they might grow and change in spring?
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NC links	- Identify and describe the basic structure of a variety of common flowering plants, including trees. - Working scientifically – Asking simple questions and recognising that they can be answered in different ways.	- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. - Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). - Identify and name a variety of common animals that are carnivores, herbivores and omnivores. - Working scientifically – Asking simple questions and recognising that they can be answered in different ways. - Working scientifically – Gathering and recording data to help in answering questions. - Working scientifically – Identifying and classifying. - Working scientifically – Using their observations and ideas to suggest answers to questions.	- Working scientifically – Explore the world around them and raise their own questions (non-statutory). - Working scientifically – Using their observations and ideas to suggest answers to questions.	- Observe changes across the four seasons. - Observe and describe weather associated with the seasons and how day length varies. - Working scientifically – Asking simple questions and recognising that they can be answered in different ways. - Working scientifically – Gathering and recording data to help in answering questions.	- Identify and describe the basic structure of a variety of common flowering plants, including trees. - Working scientifically – Observing closely, using simple equipment. - Working scientifically – Gathering and recording data to help in answering questions.
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	Summer (5 weeks)	Summer (1 week)	Summer (3 weeks)	Summer (1 week)
Year 1 Factual knowledge gained per unit of study	Factual Knowledge for Year 1 Planting B - Plants have many parts. - Each plant part has a name. - Flowering plants have flowers, stems, roots and leaves. - Trees are a type of plant. - Trees can be different shapes and sizes. - Trees have roots, a trunk, branches and leaves. - Some trees have fruit. - Wildflowers have not been chosen by humans to grow in their garden. - Most wildflowers have not been planted by humans. - Garden plants have been chosen by humans to grow in their gardens. - Wildflowers have not been chosen by humans to grow in their garden. - Most wildflowers have not been planted by humans. - Garden plants have been chosen by humans to grow in their gardens. - There are different plants in our local area. - Deciduous trees lose their leaves in autumn. - Horse chestnut, sycamore and oak trees are all deciduous. - Evergreen trees keep their leaves all year round. - Some trees are evergreen. - Holly and pine trees are evergreen. - Evergreen trees keep their green leaves all year round. - Common evergreen trees include holly and pine trees. - Deciduous trees lose their leaves in autumn. - Common deciduous trees include horse chestnut and oak trees. - Leaves that grow on deciduous trees change colour in autumn.	Factual Knowledge for Year 1 Planting C - The stem will grow in length as the plant grows. - The plant will grow new leaves. - The roots will become longer. - A plant is a living thing that usually grows in soil. - Some plants have roots, a stem, leaves and flowers. - A seed can be planted to grow into a new plant. - In summer, the weather is warmer so seeds and plants can grow outside.	Factual Knowledge for Year 1 Cooking and Growing - Some fruit and vegetables can be grown for food. - Farmers are people who grow crops to be used as food. - Fruit is the part of a flowering plant that contains seeds. - Vegetables are parts of plants that you can eat — usually the stems, leaves, and roots. - Many plants have parts that humans can eat. - Crops are plants that farmers grow to be eaten. - Much of the food we eat comes from crops.	Factual Knowledge for Year 1 Seasonal Change - There are four seasons in one year. - The seasons are spring, summer, autumn and winter. - Summer is usually the warmest season. - There are the most daylight hours in summer and the nights are shorter. - Many plants grow in summer. - There are more animals active in summer. - Summer is usually warmer than spring. - Summer is normally the warmest season. - There are more hours of daylight in summer and the nights are shortest. - There are four seasons in one year. - Winter is usually the coldest season. - Summer is usually the warmest season. - Some trees start to lose their leaves in autumn. - Some trees lose all their leaves in winter. - Plants begin to flower in spring.

Lesson Sequence Learning challenges in a sequenced order.	Step 1 Can I name the parts of a flowering plant? Step 2 Can I name the parts of a tree and compare them to parts of plants? Step 3 Can I name some wild and garden plants? Step 4 Can I find and name plants in my local area? Step 5 Can I explain what deciduous trees are and name some examples? Step 6 Can I explain what evergreen trees are and name some examples? Step 7 Can I identify and sort trees in my local area as deciduous or evergreen?	Step 1 Can I describe how my plant has changed over time? Step 2 Can I plant seeds and explain how they might grow in summer?	Step 1 Can I explain where some of my food comes from? Step 2 Can I describe what I have planted and how it has changed?	Step 1 Can I describe what happens in summer? Step 2 Can I collect and record weather data for summer and compare it with other seasons? Step 3 Can I explain the main changes that happen in each season?
NC Links	- Identify and describe the basic structure of a variety of common flowering plants, including trees. - Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. - Working scientifically – Identifying and classifying. - Working scientifically – Observing closely, using simple equipment. - Working scientifically – Gathering and recording data to help in answering questions. - Working scientifically – Using their observations and ideas to suggest answers to questions.	- Identify and describe the basic structure of a variety of common flowering plants, including trees. - Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. - Working scientifically – Observing closely, using simple equipment. - Working scientifically – Gathering and recording data to help in answering questions.	- Working scientifically – Asking simple questions and recognising that they can be answered in different ways. - Working scientifically – Using their observations and ideas to suggest answers to questions.	- Observe changes across the four seasons. - Observe and describe weather associated with the seasons and how day length varies. - Working scientifically – Asking simple questions and recognising that they can be answered in different ways. - Working scientifically – Gathering and recording data to help in answering questions. - Working scientifically – Using their observations and ideas to suggest answers to questions.

Term	Unit Title	Key Learning Areas	Project/Focus Activity
Autumn	Human Body & Senses	- Body parts and functions- Exploring senses (sight, hearing, taste, touch, smell)	Labelling diagrams, exploring sensory materials
Autumn	Seasonal Change (Autumn/Winter)	- Observing daylight, weather, leaf changes- Understanding seasonal cycles	Daily weather charts and observations
Autumn	Materials	- Texture and material properties- Floating, sinking, absorbency, transparency	Practical sorting and testing activities
Spring	Animals	- Grouping animals (mammals, reptiles, amphibians, birds, fish)- Dietary groups (herbivore, carnivore, omnivore)	Animal feature sorting and classification tasks
Spring	Planting A & B	- Plant structure and growth- Seed planting and seasonal changes	Observing and caring for seedlings
Spring	Caring for the Planet	- Human impact on nature- Positive and negative actions	Eco-themed discussions and action pledges
Summer	Planting B & C	- Identifying garden vs. wild plants- Evergreen and deciduous tree features	Local area plant hunt and tree comparisons
Summer	Cooking & Growing	- Understanding crops and plant-based foods- Farm to fork learning	Sorting fruits and vegetables from plant parts
Summer	Seasonal Change (Summer)	- Weather comparisons- Longer daylight and wildlife activity	Seasonal photo journals and discussion prompts

	Autumn (4 weeks)	Autumn (2 weeks)	Autumn (5 weeks)	Autumn (1 week)
Year 2	Factual Knowledge for Year 2	Factual Knowledge for Year 2	Factual Knowledge for Year 2	Factual Knowledge for Year 2
Factual knowledge gained per unit of study	Animals' needs for survival - Mammals have fur or hair on their body. - All mammals need air, water, food, and shelter to survive. - Mammals can be carnivores, herbivores, or omnivores. - Not all mammals live on land (e.g. whales, dolphins). - Birds have feathers, wings, and a beak. - Some birds can fly; some birds cannot fly. - Birds need air, water, food, and shelter to survive. - Some birds are insectivores - Fish are animals that live in water. - Fish have fins, scales, and gills. - Fish need air, water, food, and shelter to survive. - Fish breathe through gills. - Amphibians live on land and in water. - Amphibians do not have scales on their bodies. - Some amphibians have webbed feet. - Amphibians need air, water, food, and shelter to survive. - Reptiles have dry scales on their bodies. - Reptiles need air, water, food, and shelter to survive. - Reptiles need external heat to survive because they cannot	Humans - Exercise improves physical health. - Exercise improves mental health. - Exercising daily makes your heart stronger. - A healthy diet includes fruit, vegetables, and other healthy food. - An unhealthy diet is high in fat, sugar, or salt. - It's important to eat the right amounts of different types of food. - Germs can make you unwell. - Germs are spread easily by unwashed hands. - You should wash your hands, sneeze into a tissue, and have regular baths or showers. - You should brush your teeth twice a day with a toothbrush, toothpaste, and water. - Plaque can build up on teeth and damage teeth and gums.	Materials - Objects can be made from different materials. - Some materials are natural, like sand, wood, and wool. - Some materials are human-made, like plastic and cardboard. - Some materials are recyclable and can be used again. - Paper and cardboard are made from wood. - Wood, paper and cardboard come from trees. - These materials have different strengths. - Wood, paper and cardboard can be recycled. - Rock is a natural material. - Bricks are a human-made material. - Both rock and brick can be used to build houses, buildings, and walls. - Glass is hard and brittle. - Plastic can be flexible or hard. - Some plastic can be recycled. - All glass is recyclable. - Metal comes in many forms and colours. - Some metals are flexible and can easily change shape. - Some metals cannot change shape easily. - Metal can be used to make many different objects. - Fabrics can be natural.	Sustainability - Plastic is a human-made material. - Some plastics are recyclable; others are not. - Plastic can be both helpful and harmful. - Overuse of single-use plastic has negative impacts on humans and animals. - Common single-use plastics: straws, plastic cutlery, plates. - Reusable plastic examples: lunch boxes, water bottles, toys. - Not all plastic can be recycled. - Recyclable and non-recyclable plastics should be sorted. - Throwing recyclable plastic in the refuse bin affects the planet. - Images about plastic harm should be age-appropriate. - Plastic waste can negatively impact the planet. - Some plastic items can be reused or repurposed in school settings. - Examples of reusable projects: vertical garden using bottles, plastic collection competitions. - Reducing plastic waste has positive impacts on humans

	generate their own body heat. • Humans are mammals. • Mammals have fur or hair on their body. • Humans need air, water, food, and shelter to survive. • All animals need air, water, food, and shelter to survive.		• Fabrics can be human-made. • Fabrics have different uses. • Materials have particular uses. • Some objects can be made from different materials. • Some materials are suitable for certain objects. • Some materials are unsuitable for certain objects. • Some materials can change shape and some cannot. • Some materials can be bent. • Some materials can be twisted. • Some materials can be squashed. • Some materials can be stretched. • An umbrella needs to be waterproof, lightweight, and strong. • We can plan an investigation to test which material is best for an umbrella. • Some materials are waterproof and some are not. • Testing helps find the most suitable material for a purpose. • Materials can be ranked from least to most suitable based on their properties.	and animals. • Clean plastic items can be collected: milk bottles, yoghurt pots, bottle tops, bags. • School initiatives can help reduce plastic waste locally.
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Lesson Sequence Learning challenges in a sequenced order.	Step 1 Can I explain what mammals are and what they need to survive? Step 2 Can I describe the features of birds and what they need to survive? Step 3 Can I identify the features of fish and explain how they survive in water? Step 4 Can I explain where amphibians live and what they need to survive? Step 5 Can I describe reptiles and explain what they need to survive? Step 6 Can I explain why humans are mammals and what humans need to survive?	Step 1 Can I explain why exercise is important for my body and mind? Step 2 Can I describe what makes a diet healthy or unhealthy? Step 3 Can I explain why it is important to keep clean and how germs spread? Step 4 Can I explain how to look after my teeth and why it is important?	Step 1 Can I name and sort different materials and explain whether they are natural or human-made? Step 2 Can I describe the properties of wood, paper and cardboard and explain what they are used for? Step 3 Can I explain the difference between brick and rock and describe what they are used for Step 4 Can I compare glass and plastic and explain when each material is suitable to use? Step 5 Can I describe the properties of metals and explain when metal is suitable or unsuitable for an object? Step 6 Can I identify natural and human-made fabrics and explain how they are used? Step 7 Can I explain why the same object might be made from different materials? Step 8 Can I test materials to find out if they can bend, squash, twist, or stretch? Step 9 Can I plan how to test which material would be best for an umbrella? Step 10 Can I carry out an investigation to find the best material for an umbrella?	Step 1 Can I explain how plastic can be both helpful and harmful? Step 2 Can I suggest ways to reduce plastic waste in school?
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NC Links	• Find out about and describe the basic needs of animals, including humans, for survival (water, food, air). • Working scientifically: • Asking simple questions and recognising they can be answered in different ways. • Observing closely, using simple equipment. • Performing simple tests. • Identifying and classifying. • Using observations and ideas to suggest answers to questions. • Gathering and recording data to help in answering questions.	• Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. • Working scientifically: • Gathering and recording data to help in answering questions. • Identifying and classifying. • Observing closely, using simple equipment.	• 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: • Identifying and classifying. • Performing simple tests. • Asking simple questions and recognising that they can be answered in different ways. • Using their observations and ideas to suggest answers to questions.	• Working scientifically: • Explore the world around them and raise their own questions (non-statutory). • Use observations and ideas to suggest answers to questions. • Identify and compare the uses of a variety of everyday materials. • Understand properties of human-made materials like plastic. • Sustainability and Environment (enrichment theme): • Consider the impact of materials on humans, animals, and the planet.
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	Spring (3 weeks)	Spring (7 weeks)	Spring (1 week)
Year 2	Factual Knowledge for Year 2	Factual Knowledge for Year 2	Factual Knowledge for Year 2
Factual knowledge gained per unit of study	Plants (light and dark) - Plants include flowering plants, trees, fruits, vegetables, and herbs. - A plant is a living thing that grows in soil. - Some parts of plants (like roots, stems, leaves, fruit) can be eaten. - Plants can be grouped based on features such as size, shape, colour, or smell. - Trees are a type of plant. - Flowering plants have roots, stems, leaves, and petals. - Trees have roots, trunks, branches, leaves, and often blossoms or fruit. - Trees can be deciduous (lose leaves in winter) or evergreen (keep leaves all year). - There are similarities and differences between parts of trees and other plants. - Plants need water and light to stay healthy and grow. - Seeds grow into plants under the right conditions. - Lack of water or light can cause plants to become weak. - Some plants grow better with more light than others. - A comparative test can show whether plants grow better in light or darkness. - Variables in the experiment: - Independent: light exposure - Dependent: plant growth - Controlled: water, soil, seeds - Children plan what to change and what to keep the same in their experiment. - Children carry out the light vs. dark experiment using two plant pots. - Equal conditions except for light exposure allow fair comparison. - Observations over time help determine growth outcomes.	Living Things and their Habitats - A habitat is a place where a plant or animal lives. - A habitat provides everything needed for survival. - Both plants and animals have habitats. - Local habitats include woodlands, parks, ponds, and gardens. - Polar habitats include the Arctic and Antarctica. - Polar animals have adaptations like blubber or thick fur. - These habitats are extremely cold and only certain species can survive there. - Some polar animals are carnivores; some are herbivores. - Desert habitats have little rainfall and extreme temperatures. - Desert animals and plants (like cacti) survive with minimal water. - Deserts can be hot during the day and cold at night. - A habitat supports life even in harsh conditions. - Oceans contain plants like seagrass and various animals including fish and mammals. - Ocean plants provide food and shelter for animals. - Ocean habitats support marine life through food chains and protection. - Woodlands have trees, shrubs, and undergrowth that support animals and plants. - Animals use trees and plants for food, shelter, and protection. - Woodland habitats can support multiple types of living things. - A microhabitat is a very small habitat (e.g. under logs, stones). - Small creatures like insects, snails, and spiders live here. - Each microhabitat supports life based on its conditions. - Animals are grouped by diet: carnivores, herbivores, omnivores.	Plants (light and dark) - Plants need water to grow and stay healthy. - Plants need light to grow and stay healthy. - Without water and light, plants may become weak and will not grow properly. - A comparative test can show how light affects plant growth. - Measurements can be taken using rulers or tape measures. - The appearance and height of plants can differ based on their exposure to light. - Plants grown in the dark might grow tall but lack overall health. - Cubes can be used to visualize growth differences.

		• The habitat affects what food is available. • Animals rely on their habitat to find their specific food. • A food chain shows how energy is passed from plants to animals. • Most food chains start with a plant (producer). • Animals depend on plants and other animals for food. • Removing one part of the food chain impacts the whole system. • Living things need food, air, water, and shelter. • Dead things were once alive. • Some things (e.g. rocks, toys) have never been alive.	
Lesson Sequence Learning challenges in a sequenced order.	Step 1 Can I observe and sort plants by their features? Step 2 Can I name and describe parts of flowering plants and trees? Step 3 Can I explain what plants need to grow and stay healthy? Step 4 Can I plan a test to find out if plants grow better in light or dark? Step 5 Can I carry out a fair test and record what happens to plants in light and dark?	Step 1 Can I describe and identify habitats in my local area? Step 2 Can I explain how animals survive in polar habitats? Step 3 Can I identify animals and plants that live in the desert? Step 4 Can I name and describe animals and plants that live in the ocean? Step 5 Can I explain why animals and plants are suited to woodland habitats? Step 6 Can I explore microhabitats and name some animals that live there? Step 7 Can I group animals by their diet and explain how their habitat affects what they eat? Step 8 Can I create simple food chains and explain how energy moves between living things? Step 9 Can I sort objects into living, dead, or never alive and explain the differences?	Step 1 Can I describe what plants need to grow and stay healthy? Step 2 Can I compare a plant grown in the light with one grown in the dark? Step 3 Can I explain how the lack of light affects a plant's growth and health? Step 4 Can I use tools to measure and compare the height of two plants? Step 5 Can I describe the differences in appearance between two plants grown in different conditions? Step 6 Can I record and present my findings about plant growth over time?

NC Links	• Working Scientifically: • Observing closely using simple equipment • Asking simple questions and recognising they can be answered in different ways • Performing simple tests • Plants: • Find out and describe how plants need water, light, and a suitable temperature to grow and stay healthy	• Identify that most living things live in habitats to which they are suited. • Describe how habitats provide for the basic needs of different kinds of animals and plants. • Describe how animals and plants depend on each other. • Identify and name a variety of plants and animals in their habitats, including microhabitats. • Working Scientifically: • Ask simple questions and recognise they can be answered in different ways. • Observe closely using simple equipment. • Identify and classify. • Use their observations and ideas to suggest answers to questions. • Gather and record data to help answer questions. • Describe how animals obtain their food from plants and other animals using simple food chains.	• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. • Working Scientifically: • Asking simple questions and recognising that they can be answered in different ways. • Observing closely, using simple equipment. • Gathering and recording data to help in answering questions.
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	Summer (2 weeks)	Summer (4 weeks)	Summer (1 week)	Summer (1 week)	Summer (2 weeks)
Year 2	Factual Knowledge for Year 2	Factual Knowledge for Year 2	Factual Knowledge for Year 2	Factual Knowledge for Year 2	Factual Knowledge for Year 2
Factual knowledge gained per unit of study	Plants (Bulbs and Seeds) - Many plants grow from either bulbs or seeds. - Bulbs store food and are found underground. - Seeds can be located inside or outside fruits. - Bulbs and seeds vary in shape, size, and colour. - Shoots grow above ground; roots anchor the plant. - Common bulbs: daffodils, onions, garlic. - Common seeds: strawberries, sunflower, sweet pepper. - Plants need water, light, and suitable temperature to grow. - Health and growth depend on these conditions. - Some plants grow in winter, though growth may be slower. - Summer conditions allow outdoor planting due to warmth. - Plants can be observed growing under different temperature conditions. - Bulbs and seeds change over time after planting. - Predictions can be made about growth. - Observations should be scheduled and recorded. - Growth can vary based on location and temperature. - Bulbs/seeds planted outside	Growing Up - Most mammals give birth to live young (offspring). - Reptiles, amphibians, birds, and most insects lay eggs. - Offspring names can differ (e.g., calf, chick, kitten). - Some offspring look different from their parents. - A single name (e.g., "calf") can apply to various species. - Humans are mammals and give birth to live young. - Human life stages: baby → child → teenager → adult. - Physical and developmental changes occur throughout stages. - Longer dependence on caregivers compared to most animals. - Mammals have species-specific life cycle stages (e.g., puppy, adolescent). - Baby mammals drink milk and gradually develop independence. - Most mammals reach adulthood faster than humans. - Frogs are amphibians that live on land and in water. - Life cycle stages: frogspawn → tadpole → froglet → adult frog. - Tadpoles hatch from eggs and gradually develop legs and lungs.	Bulbs and Seeds - Plants need water, light, and a suitable temperature to grow and stay healthy. - Some plants grow from bulbs, which store food and are found underground. - Some plants grow from seeds, which may be inside or outside fruit. - Growth can be measured, typically from the base of the plant. - Temperature affects growth rate and plant health. - Changes in plants over time can be observed and recorded. - Bulbs and seeds may show similarities and differences in their development. - Adverse weather conditions can influence plant growth, especially outdoors. - Visual comparisons (e.g. using counting cubes) can help	Growing Up - A butterfly's life cycle includes egg → caterpillar → pupa → adult butterfly. - Eggs are usually laid on leaves. - After hatching, the caterpillar eats and grows. - The caterpillar forms a pupa (chrysalis), where metamorphosis takes place. - Inside the pupa, the caterpillar transforms into a butterfly. - Once fully formed, the adult butterfly hatches and can fly. - The butterfly's life cycle repeats once the adult lays eggs. - Butterflies look very different at each stage, which can cause confusion about their identity. - Observing this life cycle takes around four weeks using a hatching kit. - A butterfly diary helps record each stage through drawings and	Wildlife - Wildlife includes animals and plants not cared for by humans. - Humans, animals, and plants depend on each other for survival. - Wildlife contributes to soil enrichment (e.g. via worms). - Certain plants are edible and used as food crops. - Wildlife supports ecosystems through food chains. - Local areas, even microhabitats, can support diverse wildlife. - Crop growth is essential for food supply and is linked to soil health. - People can care for wildlife through practical actions (e.g. seed bombs, bug hotels). - Wildlife projects help maintain biodiversity in local areas. - Supportive actions (e.g. bird feeders) should avoid

	may require more water. - Local wildlife may affect planted bulbs/seeds outdoors. - Regular observation and measurement are essential. - Same amount of soil should be used for consistency in experiments.	- Butterflies are insects that start life in eggs. - Stages: egg → caterpillar → pupa → adult butterfly. - Metamorphosis occurs inside the pupa casing. - Animal life cycles share some common stages and characteristics. - Some animals lay eggs; others give birth to live offspring. - Time to adulthood varies across species. - Offspring may or may not resemble adult forms.	identify height differences. Key vocabulary includes bulb, seed, plant, temperature, and growth.	descriptive observations.	disrupting wildlife. - Creating wildlife-friendly habitats fosters growth and safety for animals. - Observing wildlife encourages responsibility for nature and sustainability.
Lesson Sequence Learning challenges in a sequenced order.	Step 1 Can I identify and describe the differences and similarities between bulbs and seeds? Step 2 Can I explain what conditions plants need to grow and stay healthy? Step 3 Can I make predictions and plan an investigation to explore how bulbs and seeds grow over time? Step 4 Can I carry out a simple test and record what happens to plants in different growing conditions?	Step 1 Can I identify and match animals with their offspring and describe how they are born? Step 2 Can I describe the different stages in the human life cycle and how humans change? Step 3 Can I compare the life cycles of mammals and explain how they grow and change? Step 4 Can I describe the life cycle of a frog and explain how it grows from an egg to an adult? Step 5 Can I explain the life cycle of a butterfly and describe how it changes during metamorphosis? Step 6 Can I identify patterns and differences in the life cycles of different animals?	Step 1 Can I observe and explain how bulbs and seeds have changed over time and what this shows about plant growth conditions?	Step 1 Can I observe and describe each stage of a butterfly's life cycle and explain how it changes over time?	Step 1 Can I explain why wildlife is important and describe the ways it helps humans and the environment? Step 2 Can I describe how we can care for wildlife and suggest actions to protect it in the local area?

NC Links	• 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 • Observing closely using simple equipment. • Asking simple questions and recognising they can be answered in different ways. • Performing simple tests. • Recording and communicating findings in a range of ways. • Beginning to use simple scientific language to explain findings.	• Notice that animals, including humans, have offspring which grow into adults. • Working Scientifically • Identifying and classifying. • Observing closely using simple equipment. • Asking simple questions and recognising that they can be answered in different ways. • Using observations and ideas to suggest answers to questions. • Recording and communicating findings in a range of ways. • Beginning to use simple scientific language.	• Observe and describe how seeds and bulbs grow into mature plants. • Working Scientifically • Observing closely using simple equipment. • Recording findings using tables or visual tools. • Using observations to draw conclusions about growth and change.	• Notice that animals, including humans, have offspring which grow into adults. • Working Scientifically • Observing closely, using simple equipment. • Recording observations in drawings and descriptive writing. • Using scientific vocabulary to describe changes and patterns.	• Working Scientifically • Asking simple questions and recognising that they can be answered in different ways. • Using observations and ideas to suggest answers to questions. • 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.
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Term	Unit Title	Key Learning Areas	Project/Focus Activity
Autumn	Animal Needs for Survival	- Survival essentials (air, water, food, shelter)- Comparison across animal groups	Survival feature sort and mini animal studies
Autumn	Humans (Health & Hygiene)	- Effects of exercise, healthy diet, and hygiene- Tooth care and germ awareness	Hygiene routine posters and tooth brushing demos
Autumn	Materials	- Natural vs. human-made- Properties and suitability tests- Changing shapes	Material testing challenges (e.g., umbrella design)
Autumn	Sustainability	- Plastic pollution and sorting- Positive environmental actions	School plastic collection and upcycling ideas
Spring	Plants (Light & Dark)	- What plants need to grow- Fair tests comparing growth with/without light	Light/dark planting experiments and growth diaries
Spring	Living Things & Their Habitats	- Classifying habitats- Survival adaptations- Food chains and microhabitats	Habitat models and classification keys
Summer	Bulbs and Seeds	- Observing seed and bulb growth- Effects of location, temperature, and water	Growth tracking and visual comparison activities
Summer	Growing Up	- Mammal and human life stages- Comparing animal lifecycles	Lifecycle wheel comparisons and sequencing cards
Summer	Wildlife	- Importance of biodiversity- Ways to care for local wildlife	Bug hotels, seed bombs, and wildlife pledges

	Autumn (3 weeks)	Autumn (1 week)	Autumn (3 week)
Year 3 Factual knowledge gained per unit of study	Factual Knowledge for Year 3 Skeletons • The human skeleton is made up of 206 bones. • Key bones include the skull, spine, ribcage, pelvis and femur. • The skeleton provides support, protection, and enables movement. • The skull protects the brain, the ribcage protects the heart and lungs, and the femur supports movement. • The spine helps humans to twist and stay upright. • Different animals have different skeletons—some have internal skeletons (endoskeletons), some have exoskeletons, and some have no skeleton at all. • Mammals, birds, fish, amphibians and reptiles all have skeletons with varying structures. • Some animals (like insects) have an exoskeleton; others (like slugs) have no skeleton.	Biology Project – Movement	Factual Knowledge for Year 3 Nutrition and Diet • Humans need the right types and amount of food to stay healthy. • Nutrition comes from what we eat—humans cannot make their own food. • Food can be grouped into five categories: fruit and vegetables, carbohydrates, proteins, dairy products, and fats and sugars. • Each food group supports the body differently: ○ <i>Fruit and vegetables</i> provide vitamins and minerals. ○ <i>Carbohydrates</i> provide energy. ○ <i>Proteins</i> build and repair muscles. ○ <i>Dairy</i> supports bones and teeth. ○ <i>Fats</i> provide energy, but too much saturated fat can be unhealthy. • A balanced diet includes a wide variety of food groups in suitable proportions. • Different diets (vegan, vegetarian, pescatarian, omnivorous) can all be balanced if planned carefully. • Animals can be sorted into herbivores (plant eaters), carnivores (meat eaters), and omnivores (both). • Animal teeth often reflect their diet: carnivores have sharp teeth, herbivores have flat teeth.

Lesson Sequence Learning challenges in a sequenced order.	1. Bones of the Human Body Can I identify and name the key bones in the human skeleton? 2. Functions of the Skeleton Can I describe how the skeleton supports, protects and helps the body move? 3. Animal Skeletons Can I name and identify bones in a range of animals and compare them to the human skeleton? 4. Animals with and without a Spine Can I identify animals that have a spine and those that don't, and explain the difference? 5. Skeleton Comparison Can I sort and group animals based on the similarities and differences in their skeletons?		1. Food Groups Can I sort food into the five food groups and say what each provides the body with? 2. The Five Food Groups Can I explain what each food group does for the body and why each one is important? 3. Balanced Diet Can I describe what a balanced diet is and why it helps us stay healthy? 4. Compare Diets Can I explain the similarities and differences between vegan, vegetarian, pescatarian and omnivorous diets? 5. Animal Diets Can I describe what herbivores, carnivores and omnivores eat and explain how their teeth match their diet?
NC Links	<i>Animals Including Humans:</i> • Identify that humans and some other animals have skeletons and muscles for support, protection and movement. <i>Working Scientifically:</i> • Ask relevant questions and use different types of scientific enquiries to answer them. • Use observations, comparisons and simple classification to support conclusions. • Record findings using scientific language, drawings, labelled diagrams, and oral/written explanations.		<i>Animals Including Humans:</i> • Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. <i>Working Scientifically:</i> • Group, sort and classify items based on criteria. • Use scientific evidence to support findings. • Report on findings through explanations, presentations and written accounts. • Identify similarities and differences between scientific ideas.

	Autumn (1 weeks)	Autumn (3 week)
Year 3 Factual knowledge gained per unit of study	Sustainability Project – Food waste	Factual Knowledge for Year 3 Rocks • Rocks are natural materials with different appearances and physical properties. • Common rock types include granite, pumice, sandstone, chalk, marble, and gneiss. • Rocks can have grains, crystals, or layers, and vary in hardness, weight, and texture. • Some rocks are hard or brittle; others may float or react with acid (e.g. vinegar). • Classification can be based on properties like texture, presence of grains/crystals, hardness, and weight. • Rocks are used in buildings, gravestones, pavements and other everyday structures. • Weathering changes rocks over time, especially in outdoor environments. • Observations and simple testing can be used to identify rock properties.
Lesson Sequence Learning challenges in a sequenced order.		1. Identify Rocks Can I observe and describe a variety of rocks using their appearance and features? 2. Group Rocks Can I group rocks in different ways using features like crystals, grains, or texture? 3. Test Rocks Can I test and compare rocks for properties like hardness, whether they float or sink, and how they react with acid? 4. Local Rock Survey Can I explore how rocks are used in buildings and structures around the local area and explain how rocks change over time?
NC Links		Rocks: • Compare and group together different kinds of rocks based on their appearance and simple physical properties. Working Scientifically: • Make systematic and careful observations using equipment such as hand lenses. • Record observations and use them to group, classify and compare. • Gather, record and present data to help answer questions. • Use results to draw conclusions and support answers with evidence.

	Spring (2 weeks)	Spring (3 week)	Spring (6 week)
Year 3	Factual Knowledge for Year 3	Factual Knowledge for Year 3	Factual Knowledge for Year 3
Factual knowledge gained per unit of study	Fossils • A fossil is the remains or trace of a living thing that lived a long time ago. • Both animals and plants can become fossils. • Fossils can be formed from bones, shells, or even footprints and tracks. • Older fossils are found deeper underground. • Fossilisation is the process by which a fossil forms. • Fossilisation is rare and requires specific conditions (e.g. watery environments, quick burial in sediment). • Over time, layers of sediment build up, compressing remains and turning them to rock.	Soils • Soil is made up of small pieces of rock, organic matter (dead plants and animals), and water. • Different types of soil include sandy, clay, chalky, and peat — each with unique properties. • Soils vary in absorbency and structure (e.g. particle size, ability to retain water). • Soil provides essential nutrients and water that help plants grow. • Many animals rely on soil for shelter or as a habitat. • Soil helps prevent flooding by absorbing water. • Human activities like deforestation and construction can cause soil loss, impacting plants, animals, and humans. • Soil absorbency can be tested using scientific equipment like filter paper, funnels, measuring cylinders, and scales. • Scientific experiments require careful planning: identifying what to change, measure, and keep the same. • Evaluating investigations involves spotting patterns, drawing conclusions, and suggesting improvements or further questions.	Light • Light is a form of energy that enables us to see. • Light sources can be natural (e.g. the Sun) or artificial (e.g. torches, lamps). • The Sun is the most important natural light source, but its light can be harmful to our eyes. • We see objects because light reflects off them and enters our eyes. • Smooth, shiny surfaces reflect light better than dull ones. • Shadows form when light is blocked by an opaque object. • The shape of the shadow matches the outline of the object blocking the light. • Materials can be described as: ○ <i>Opaque</i> – no light passes through ○ <i>Translucent</i> – some light passes through ○ <i>Transparent</i> – all light passes through • The closer an object is to a light source, the larger the shadow it casts. • Light travels in straight lines and cannot bend around corners.

Lesson Sequence Learning challenges in a sequenced order.	1. Explore Fossils Can I describe what fossils are, what they can be made from, and what they tell us about the past? 2. Fossil Formation Can I explain how fossils are formed and describe the stages of fossilisation clearly?	1. Explore Soil Can I observe and describe different types of soil and explain what they are made from? 2. The Importance of Soil Can I explain why soil is important for plants, animals and humans? 3. Plan a Soil Investigation Can I plan a fair test to compare how much water different soils absorb? 4. Carry Out a Soil Investigation Can I carry out a fair test to find out which type of soil absorbs the most water? 5. Evaluate the Investigation Can I use my results to draw conclusions and suggest improvements to my experiment?	1. Light Sources Can I identify natural and artificial light sources and explain how we use them? 2. The Sun Can I describe the Sun as a light source and explain how to stay safe in sunlight? 3. How We See Can I explain how light reflects off objects and into our eyes to help us see? 4. Shadows Can I describe how shadows are formed and predict the shape and size of a shadow? 5. Opaque, Translucent, or Transparent? Can I test and group materials based on how much light they let through? 6. Plan – Shadow Experiment Can I plan a fair test to investigate how the distance from a light source affects shadow size? 7. Investigate – Shadow Experiment Can I carry out an investigation and take accurate measurements of shadow size? 8. Evaluate – Shadow Experiment Can I analyse the results of my shadow investigation and explain what I found out?
NC Links	<i>Rocks:</i> - Describe in simple terms how fossils are formed when things that have lived are trapped within rock. <i>Working Scientifically:</i> - Ask relevant questions and use different types of scientific enquiries to answer them. - Report on findings from enquiries using oral and written explanations, displays or presentations. - Use scientific language and appropriate vocabulary to explain processes.	<i>Rocks:</i> - Recognise that soils are made from rocks and organic matter. <i>Working Scientifically:</i> - Set up simple comparative and fair tests. - Make systematic and careful observations and accurate measurements using standard equipment. - Use results to draw simple conclusions and suggest improvements or further questions. - Record findings using scientific language, drawings, diagrams, charts and tables. - Use straightforward scientific evidence to support ideas and answer questions.	<i>Light:</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 source is blocked by an opaque object. - Find patterns in the way that the size of shadows change. <i>Working Scientifically:</i> - Ask relevant questions and use different types of scientific enquiries. - Set up simple practical enquiries and fair tests. - Make systematic and careful observations and take accurate measurements. - Record findings using drawings, diagrams, bar charts, and tables. - Use results to draw conclusions, make predictions, and suggest improvements.

	Summer (6 weeks)	Summer (2 week)	Summer (2 week)
Year 3	Factual Knowledge for Year 3	Factual Knowledge for Year 3	Factual Knowledge for Year 3
Factual knowledge gained per unit of study	Plants - Plants are made up of key parts: roots, stem, leaves, and flowers, each with specific functions. - Roots absorb water and nutrients from the soil and anchor the plant. - The stem carries water to different parts of the plant and holds it upright. - Leaves absorb sunlight to make food through photosynthesis. - Flowers help the plant to reproduce. - Germination begins when a seed absorbs water and swells, breaking its coating. - The stamen is the male reproductive part and produces pollen. - The pistil is the female reproductive part that receives the pollen. - Pollination is the transfer of pollen from stamen to pistil, allowing seeds to form. - Seed dispersal spreads seeds to reduce competition—through wind, water, animals, or explosive seed pods. - The life cycle of a plant includes: seed → germination → growth → pollination → seed formation → dispersal.	Forces - A force is a push or a pull. - A contact force affects objects that are touching (e.g. push, pull, friction). - Friction is a contact force that slows or stops a moving object when it rubs against a surface. - Smooth surfaces (like plastic, wood, or ice) have low friction and allow objects to move more easily. - Rough surfaces (like carpet or sandpaper) have high friction and slow down moving objects. - Different surfaces affect how far an object will travel. - To conduct a fair test, you must decide what to change, what to measure, and what to keep the same. - Scientific investigations involve making predictions, observing carefully, and using results to draw conclusions.	Magnets - A magnet is an object that can attract magnetic materials using a force called magnetism. - Magnetic forces are non-contact forces — they act without the objects touching. - Magnets have two poles: a north pole and a south pole. - Opposite poles attract; like poles repel. - Magnets come in various shapes (bar, horseshoe, ring, disc) but always have north and south poles. - Some materials are magnetic (e.g. iron, steel), others are non-magnetic (e.g. plastic, wood, aluminium). - Not all metals are magnetic — for example, iron and steel are, but aluminium is not. - Magnets are used in real life, such as in fridge doors, magnetic clasps, and recycling machines.

Lesson Sequence Learning challenges in a sequenced order.	1. Can I identify the parts of a plant and describe their functions? 2. Can I dissect a plant and group its parts? 3. Can I plan a fair test to explore how seed number affects plant growth? 4. Can I carry out a plant growth experiment, measuring and observing carefully? 5. Can I explain how water moves through a plant and what happens if this process is disrupted? 6. Can I describe the conditions seeds need for germination and compare how different seeds grow? 7. Can I identify the reproductive parts of a flower and describe their roles? 8. Can I explain the process of pollination and identify pollinators? 9. Can I describe the different methods of seed dispersal and explain their advantages? 10. Can I explain the full life cycle of a flowering plant using what I've learned?	1. Explore Forces Can I describe forces as pushes or pulls and explain how they affect objects? 2. Friction Can I explain what friction is and describe how different surfaces affect movement? 3. Plan an Experiment Can I plan a fair test to investigate how the surface of a ramp affects the distance a toy car travels? 4. Investigate and Evaluate Can I carry out an investigation on friction and explain how my results help me answer a scientific question?	1. Magnets Can I explore and describe the properties of magnets and explain what a non-contact force is? 2. Magnetic and Non-Magnetic Materials Can I test materials to see which are magnetic and explain what all magnetic materials have in common? 3. Investigate Metals Can I investigate whether all metals are magnetic and explain which are and which are not? 4. North and South Poles Can I identify the north and south poles on a magnet and predict whether two magnets will attract or repel?
NC Links	<i>Plants:</i> • Identify and describe the functions of different parts of flowering plants. • Explore the requirements of plants for life and growth. • Investigate how water is transported within plants. • Explore the role of flowers in the life cycle, including pollination, seed formation and dispersal. <i>Working Scientifically:</i> • Ask relevant questions and set up practical enquiries and fair tests. • Make careful observations and take accurate measurements. • Record findings using scientific language and diagrams. • Report conclusions, identify patterns, and suggest improvements.	<i>Forces and Magnets:</i> • Compare how things move on different surfaces. <i>Working Scientifically:</i> • Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. • Make systematic and careful observations and take accurate measurements. • Record findings using drawings, tables, and charts. • Use results to draw simple conclusions and suggest improvements.	<i>Forces and Magnets:</i> • 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 based on whether they are attracted to a magnet. • Describe magnets as having two poles and predict whether two magnets will attract or repel depending on which poles are facing. <i>Working Scientifically:</i> • Set up simple comparative and fair tests. • Use results to draw simple conclusions and suggest improvements. • Gather, record, classify and present data in a variety of ways. • Report on findings using oral and written explanations, diagrams and tables.

	Summer (1 weeks)	Summer (1 week)
Year 3 Factual knowledge gained per unit of study	Biology Project - Plants B	Sustainability Project - Biodiversity

Term	Topic	Key Learning Areas	Project/Focus Activity
Autumn	Skeletons	- Names and functions of major bones- Skeletons for support, protection, and movement- Vertebrates, invertebrates, and comparison of skeleton types	Compare animal skeletons and build labelled bone models
	Nutrition and Diet	- Food groups and their roles- Balanced diets- Human and animal diets- Teeth adaptations based on diet types	Create a balanced meal plate and compare animal diets
	Rocks	- Rock types and their properties- Grouping rocks by texture and hardness- Rock testing- Local rock surveys and weathering	Test and classify rock samples; local building survey
Spring	Fossils	- What fossils are and how they form- Fossilisation process- Interpreting fossils for historical understanding	Sequence the fossilisation process; examine fossil samples
	Soils	- Soil components and type- Testing absorbency- Importance of soil for plants and humans- Human impact on soil	Compare soil samples; plan and carry out fair tests
	Light	- Light sources and reflections- How we see- Shadow formation- Transparent, translucent, and opaque materials	Plan and investigate how light affects shadows
Summer	Plants A	- Parts of flowering plants- Plant life cycle- Pollination and seed dispersal- Conditions for growth	Dissect flowers; grow and observe plant development
	Forces	- Pushes and pulls- Friction as a contact force- Fair testing with ramps and surfaces	Investigate friction using car and ramp experiments
	Magnets	- Magnetic and non-magnetic material- Properties of magnets- Poles: attract and repel- Not all metals are magnetic	Test everyday items for magnetism; attract/repel experiments

	Autumn (3 weeks)	Autumn (1 week)	Autumn (7 week)
Year 4 Factual knowledge gained per unit of study	Factual Knowledge for Year 4 Group and Classify Living Things - Animals with backbones are called vertebrates; those without are invertebrates. - Vertebrate groups include mammals, birds, fish, amphibians, and reptiles—each with distinct physical features. - Invertebrate groups include insects (6 legs, 3 body sections), spiders (8 legs, 2 sections), and soft-bodied creatures like slugs and snails. - Classification keys use yes/no questions to group and identify living things by their observable features. - Flowering plants produce flowers and fruit; non-flowering plants (like mosses and ferns) do not. - Trees can be deciduous (lose leaves in autumn) or evergreen (keep leaves year-round). - Scientists group living things based on shared characteristics to help understand the natural world.	Data Collection Project A	Factual Knowledge for Year 4 States of Matter - Materials can exist as solids, liquids, or gases — known as states of matter. - Solids have a fixed shape and volume; liquids have a fixed volume but change shape to fit a container; gases change both shape and volume to fill the space available. - Some solids (e.g. rice, sand) can be poured but are still classified as solids. - Water can change state: it freezes (liquid to solid), melts (solid to liquid), evaporates (liquid to gas), and condenses (gas to liquid). - Temperature changes can cause changes of state; melting and boiling points vary for different materials. - The water cycle includes evaporation and condensation, and it recycles Earth's water continuously. - Evaporation is affected by temperature: warmer air speeds it up. - Equipment like thermometers and stopwatches help measure temperature and time accurately during scientific enquiries.

Lesson Sequence Learning challenges in a sequenced order.	1. <i>Group Animals</i> Can I sort vertebrate animals into groups based on their features? 2. <i>Vertebrates and Invertebrates</i> Can I identify whether an animal is a vertebrate or invertebrate and explain how I know? 3. <i>Classification Keys (Animals)</i> Can I use yes/no questions to group animals using a classification key? 4. <i>Group Plants</i> Can I group flowering and non-flowering plants based on their features? 5. <i>Classification Keys (Plants)</i> Can I create a classification key to identify and sort different types of plants?		1. <i>Solids, Liquids and Gases</i> Can I group materials into solids, liquids or gases based on their properties? 2. <i>Think Differently About States</i> Can I explain why some materials are tricky to classify as solid, liquid or gas? 3. <i>Changes of State</i> Can I describe how materials change state when heated or cooled? 4. <i>Use Equipment</i> Can I measure temperature and time accurately using scientific equipment? 5. <i>Plan Melting Experiment</i> Can I plan a fair test to investigate how temperature affects melting? 6. <i>Investigate Melting</i> Can I carry out and record a fair test to explore how quickly ice melts in different temperatures? 7. <i>The Water Cycle</i> Can I describe the stages of the water cycle and explain the role of evaporation and condensation? 8. <i>Plan Evaporation Experiment</i> Can I plan a fair test to explore how temperature affects evaporation? 9. <i>Investigate Evaporation</i> Can I observe and record how temperature affects the rate of evaporation? 10. <i>Evaluate Investigation</i> Can I use my results to make conclusions, identify patterns and suggest improvements or questions for further investigation?
NC Links	<i>Living Things and Their Habitats:</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. <i>Working Scientifically:</i> • Ask relevant questions and use different types of scientific enquiries to answer them. • Gather, record, classify and present data in a variety of ways. • Report on findings from enquiries using explanations, displays or presentations.		<i>States of Matter:</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>Working Scientifically:</i> • Asking relevant questions and using different types of scientific enquiries to answer them. • Making systematic and careful observations and accurate measurements using standard units (e.g. thermometers and stopwatches). • Setting up simple practical enquiries and fair tests. • Recording and presenting data, drawing conclusions, making predictions and suggesting improvements.

	Spring (5 weeks)	Spring (1 weeks)	Spring (4 week)	Spring (1 week)
Year 4	Factual Knowledge for Year 4	Data Collection Project B	Factual Knowledge for Year 4	Sustainability Project - Energy
Factual knowledge gained per unit of study	Sound • Sounds are made when objects vibrate; a vibration is a rapid back-and-forth movement. • Vibrations travel through a medium (air, liquid or solid) to the ear. • The outer ear funnels vibrations into the ear canal, reaching the ear drum. • Vibrations pass through ear bones to the cochlea, where signals are sent to the brain. • Sound volume is how loud or quiet a sound is, and is measured in decibels (dB). • Greater vibration strength = louder sound; smaller vibrations = quieter sound. • Pitch is how high or low a sound is; higher pitch = faster vibrations, lower pitch = slower. • Volume decreases as distance from the sound source increases. • Sound levels can be measured with decibel meters or apps. • Sound insulation materials reduce volume by absorbing vibrations. • Fair testing involves identifying independent, dependent and controlled variables.		Electricity • Electricity powers many common appliances, either via plugs (mains) or batteries (cells). • Electrical circuits must be complete loops for current to flow; a break means it won't work. • Circuits can include wires, bulbs, buzzers, switches, and batteries (cells). • A series circuit connects all components in one loop — if one part fails, the whole circuit fails. • Switches control the flow of electricity by opening or closing the circuit. • A conductor allows electricity to flow (e.g. metal); an insulator does not (e.g. rubber, plastic). • Metals are generally good conductors; plastic, rubber, and wood are good insulators. • Materials can be tested within a circuit to identify if they conduct electricity. • Conductors can complete a gap in a circuit; insulators cannot.	

Lesson Sequence Learning challenges in a sequenced order.	1. Vibrations Can I explain how vibrations cause sounds and how they travel to our ears? 2. Can I describe how sound travels through the ear and what each part does? 3. Investigate Sounds Can I measure how loud different sounds are in decibels at different times and places? 4. Explore Volume Can I explain how the strength of vibrations affects the volume of a sound? 5. Explore Pitch Can I describe what pitch is and how to change it using different objects? 6. Plan: Volume Experiment Can I plan a fair test to investigate how distance affects the volume of a sound? 7. Investigate: Volume Experiment Can I carry out an investigation to test how distance affects sound volume and record the results accurately? 8. Evaluate: Volume Experiment Can I use my data to draw conclusions, identify patterns, and evaluate how to improve the test?		1. Common Appliances Can I identify and sort appliances that run on electricity, and explain how to stay safe when using them? 2. Build and Draw Series Circuits Can I build a complete circuit and draw it clearly, labelling all parts? 3. What Has Gone Wrong? Can I identify what has gone wrong in a broken circuit and suggest how to fix it? 4. Conductors and Insulators Can I test materials to find out if they are conductors or insulators, and explain the difference? 5. Conductivity Within a Circuit Can I test materials within a circuit and explain which ones complete the circuit and why?	
NC Links	<i>Sound:</i> • Identify how sounds are made, associating some with vibrations. • Recognise that vibrations 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. • Recognise that sounds get fainter as distance from the source increases. <i>Working Scientifically:</i> • Set up simple practical enquiries, comparative and fair tests. • Make systematic and careful observations and take accurate measurements. • Record data using labelled diagrams, tables, and bar charts. • Use results to draw conclusions, make predictions, suggest improvements and raise questions.		<i>Electricity:</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 it is part of a complete loop with a battery. • Recognise that a switch opens and closes a circuit. • Recognise some common conductors and insulators, and associate metals with being good conductors. <i>Working Scientifically:</i> • Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries and fair tests. • Make careful observations, take accurate measurements, and record results using diagrams, tables, and charts. • Use results to draw conclusions, make predictions and suggest improvements.	

	Summer (2 weeks)	Summer (2 weeks)	Summer (1 week)
Year 4 Factual knowledge gained per unit of study	Data Collect 3	Factual Knowledge for Year 4 Habitats • A habitat is where an animal or plant lives and gets what it needs to survive. • Urban habitats (towns/cities) and rural habitats (countryside) can both support biodiversity but suit different organisms. • Biodiversity means the variety of living things in a habitat. • Animals can be sorted into vertebrates (with a backbone) and invertebrates (without). • Classification keys use yes/no questions to group and identify living things. • Scientists use classification to organise and understand living things based on observable features. • Plants and animals live in habitats that meet their survival needs like food, shelter, and reproduction. • Humans can have both positive (e.g. rewilding, nature reserves) and negative (e.g. deforestation, pollution) impacts on habitats. • Rewilding increases biodiversity by restoring natural environments. • Overuse of natural resources can lead to environmental damage.	Deforestation Project

Lesson Sequence Learning challenges in a sequenced order.		1. Living Things and Their Habitats Can I describe how different habitats meet the needs of the plants and animals that live there? 2. Classification Keys (Animals) Can I use a classification key to identify and group animals by their features? 3. Classification Keys (Plants) Can I create and use a classification key to group plants by their characteristics? 4. Human Impact on Habitats Can I explain how human actions can damage or improve habitats and biodiversity?	
NC Links		<i>Living Things and Their Habitats:</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>Working Scientifically:</i> • Ask relevant questions and use scientific enquiries to answer them. • Gather, record, classify and present data in various forms. • Report on findings using oral and written explanations, displays or presentations of results and conclusions.	

	Summer (5 weeks)	Summer (2 weeks)
Year 4 Factual knowledge gained per unit of study	Factual Knowledge for Year 4 The Digestive System • Carnivores have long, sharp teeth for tearing meat; herbivores have flat teeth for grinding plants; omnivores have a mix of both. • Humans have four types of teeth: incisors (biting), canines (tearing), premolars (guiding food), and molars (grinding). • Human teeth have layers: enamel (protective), pulp (sensitive inner part), and root (anchors tooth in jaw). • Plaque is a sticky substance caused by bacteria feeding on sugar; if not removed, it leads to tooth decay. • Sugary drinks can damage enamel similarly to how acid affects eggshells in an experiment. • The digestive system breaks food down so the body can absorb nutrients and remove waste. • Digestion begins in the mouth with chewing and saliva, continues through the oesophagus, stomach, small and large intestines, and ends at the rectum. • Each organ plays a specific role in digestion: the mouth chews, the stomach churns, intestines absorb, and the rectum removes waste.	Factual Knowledge for Year 4 Food Chains • A food chain shows how energy is transferred when one living thing eats another. • All food chains begin with a producer — usually a plant that makes its own food using sunlight. • Consumers are living things that eat other organisms to get energy. • A predator hunts and eats other animals (prey), which are eaten for energy. • Animals can be consumers, prey, and predators at the same time depending on their role in the food chain. • The arrows in food chains point in the direction of energy transfer — from food to consumer. • Food chains vary in length and complexity depending on the habitat. • Human activities (farming, hunting, deforestation, overfishing) can disrupt food chains by affecting species populations.

Lesson Sequence Learning challenges in a sequenced order.	Teeth and Animal Diets <i>Can I compare the teeth of carnivores, herbivores and omnivores and explain how their teeth suit their diet?</i> Types of Human Teeth <i>Can I name and describe the four types of human teeth and explain their functions?</i> Layers of the Teeth <i>Can I identify the layers of a tooth and explain how plaque can damage them?</i> Plan Tooth Decay Experiment <i>Can I plan a fair test to investigate how different liquids affect enamel using eggshells as a model?</i> The Digestive System <i>Can I describe the parts of the human digestive system and explain what happens to food as it travels through it?</i> Digestive System Model <i>Can I model how the digestive system works and explain the role of each organ?</i> Analyse Tooth Decay Results <i>Can I explain the results of my experiment and suggest how we can protect our teeth?</i>	What is a Food Chain? Can I identify producers, consumers, prey and predators in a simple food chain and explain how energy is transferred? Interpret Food Chains Can I explain what a food chain shows and describe how changing one part affects others in the chain? Draw Food Chains Can I create food chains using living things from different habitats and label each part accurately? What Would Happen If...? Can I investigate how human activity impacts food chains and suggest how to protect habitats and biodiversity?
NC Links	Animals Including Humans: - Identify the different types of teeth in humans and their simple functions. - Describe the simple functions of the basic parts of the digestive system in humans. Working Scientifically: - Ask relevant questions and use different types of scientific enquiries to answer them. - Set up simple practical enquiries and fair tests. - Record findings using drawings, diagrams, charts and tables. - Use results to draw conclusions, make predictions and suggest improvements.	Living Things and Their Habitats: - Construct and interpret a variety of food chains, identifying producers, predators and prey. Working Scientifically: - Use straightforward scientific evidence to answer questions or support findings. - Record findings using scientific language, labelled diagrams and presentations. - Report on findings from enquiries using oral and written explanations and conclusions.

Term	Topic	Key Learning Areas	Project/Focus Activity
Autumn	Group and Classify Living Things	- Vertebrates vs invertebrates- Animal and plant classification- Use of classification keys- Features of flowering and non-flowering plants	Classify animals and plants using sorting keys
	States of Matter	- Solids, liquids, and gases- Changing state through heating/cooling- The water cycle- Evaporation and condensation- Use of thermometers	Melting and evaporation investigations
Spring	Sound	- Vibrations and sound creation- Pitch and volume- How sound travels- Parts of the ear- Effects of distance on volume	Sound experiments including decibel tests
	Electricity	- Electrical circuits and components- Conductors and insulators- Fixing broken circuits- Switches and complete loops	Create and test simple circuits
Summer	Habitats	- How habitats meet the needs of organisms- Classification of plants and animals in habitats- Human impact on environments	Habitat surveys and habitat impact presentations
	The Digestive System	- Types and structure of teeth- Function of human digestion- Food journey through the body- Tooth decay investigations	Eggshell decay experiment as a model for tooth damage
	Food Chains	- Structure of food chains- Producers, consumers, predators, prey- Impact of human activity- Energy transfer in ecosystems	Create, interpret, and evaluate food chains across habitats

	Autumn (5 weeks)	Autumn (5 weeks)	Autumn (1-2 week)
Year 5 Factual knowledge gained per unit of study	Factual Knowledge for Year 5 Forces • Friction is a contact force that occurs between two surfaces and opposes motion. • Friction acts in the opposite direction to movement and can stop or slow an object. • Air resistance is a type of friction that acts on objects moving through air; it increases with surface area and speed. • Parachutes slow descent due to air resistance, and surface area affects the rate of fall. • Water resistance is a type of friction that occurs in liquids; more streamlined shapes experience less resistance. • Gravity is a non-contact force caused by objects with mass pulling each other; it pulls objects towards Earth. • All objects fall at the same rate regardless of mass if surface area is the same. • Levers, gears, and pulleys are mechanisms that allow smaller forces to have greater effects.	Factual Knowledge for Year 5 Space • The Sun is a star at the centre of our Solar System. • The Solar System consists of the Sun, eight planets, moons, and smaller celestial bodies. • All planets orbit the Sun due to its strong gravitational pull. • Inner planets (Mercury, Venus, Earth, Mars) have solid surfaces. • Outer planets (Jupiter, Saturn, Uranus, Neptune) are made mostly of gas. • The Earth rotates on its axis every 24 hours, causing day and night. • Earth's tilt on its axis causes the seasons. • The Moon is Earth's natural satellite and takes around 27 days to orbit Earth. • The Moon reflects light from the Sun but does not emit its own light. • Earth, the Moon and the Sun are approximately spherical in shape. • Scientific understanding of the Solar System changed from geocentric (Earth-centred) to heliocentric (Sun-centred) models. • Scientists like Aristotle, Ptolemy, Copernicus, Galileo and Newton played key roles in our evolving understanding. • Models help us visualise the Solar System, but they have limitations in scale and accuracy.	Renewable Energy Project What is global warming and what is its impact?

Lesson Sequence Learning challenges in a sequenced order.	1. <i>Friction:</i> Can I explain what friction is and why it's useful in everyday life? 2. <i>Air Resistance:</i> Can I describe how air resistance affects moving objects and how it can be reduced? 3. <i>Plan - Parachute Experiment:</i> Can I plan a fair test to investigate how parachute size affects its fall time? 4. <i>Investigate - Parachute Experiment:</i> Can I carry out an experiment to test the effect of parachute surface area on air resistance? 5. <i>Evaluate - Parachute Experiment:</i> Can I evaluate and explain the results of my parachute experiment? 6. <i>Plan - Water Resistance:</i> Can I plan an investigation to test the effect of shape on how an object moves through water? 7. <i>Investigate - Water Resistance:</i> Can I identify which shapes are most streamlined in water and why? 8. <i>Explore Gravity:</i> Can I explain how gravity affects all objects and why it is a non-contact force? 9. <i>Use Small Forces for Greater Effects:</i> Can I describe how levers, pulleys and gears make work easier by increasing the effect of a force?	1. <i>The Solar System:</i> Can I describe what the Solar System is and explain how our understanding of it has changed over time? 2. <i>The Planets:</i> Can I identify and compare the eight planets in the Solar System and group them by their features? 3. <i>Modelling:</i> Can I create and explain a model of the Solar System and reflect on its accuracy and limitations? 4. <i>Motion of Earth and Planets:</i> Can I explain how gravity affects planetary motion and why different planets take different times to orbit the Sun? 5. <i>Ideas over Time:</i> Can I explain how scientific ideas about the structure of the Solar System have changed over time? 6. <i>Planet Earth:</i> Can I describe how Earth's rotation and tilt create day, night and the seasons? 7. <i>Night and Day:</i> Can I explain how the rotation of Earth causes day and night and why not everyone experiences them at the same time? 8. <i>The Moon:</i> Can I describe the Moon's features, how it moves around Earth, and how it reflects sunlight?	
NC Links	<i>Forces:</i> • Identify the effects of air resistance, water resistance and friction that act between moving surfaces. • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. • <i>Working Scientifically:</i> • Use scientific language and illustrations to discuss and justify ideas. • Plan different types of scientific enquiries, including recognising and controlling variables. • Use a range of scientific equipment with increasing accuracy. • Take repeat readings and identify anomalous results. • Present findings and draw conclusions from data. • Identify evidence used to support or refute ideas.	<i>Astronomy:</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 Earth. • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. • Describe the Sun, Earth and Moon as approximately spherical bodies. • <i>Working Scientifically:</i> • Identifying scientific evidence to support or refute ideas. • Recording data and results using scientific diagrams and labels, tables, and graphs. • Reporting and presenting findings, including explanations, causal relationships, and conclusions in oral and written forms.	

	Spring (4 weeks)	Spring (5 weeks)	Spring (3 week)
Year 5	Factual Knowledge for Year 5	Factual Knowledge for Year 5	Factual Knowledge for Year 5
Factual knowledge gained per unit of study	Properties of Materials - Materials can be classified by properties such as hardness, transparency, conductivity (thermal and electrical), and magnetism. - Transparent materials let all light through; translucent let some light through; opaque let none through. - A harder material can scratch a softer material. - Some metals are magnetic (e.g. iron, steel); many are not. - Conductors allow electricity to flow; insulators do not. Metals are good conductors; plastic, wood, and paper are insulators. - A thermal insulator reduces heat transfer. Materials like bubble wrap, felt, and foil provide insulation. - Planning an investigation requires identifying independent, dependent, and controlled variables. - Scientific conclusions are based on comparing results and evaluating fair tests. - Metals, wood, and plastics have different properties that suit specific uses based on tests and evidence. - Materials can be tested and grouped by magnetic properties, transparency, hardness, and conductivity.	Animals Including Humans - The human life cycle has six stages: foetus, baby, child, adolescent, adult, and elderly adult. - All humans grow and develop through these stages in the same order, although at different rates. - Babies are completely dependent on adults and show rapid changes in length and mass. - Children continue to grow physically and develop key life skills. - Adolescence is when puberty occurs, caused by hormones; this prepares humans for reproduction. - Puberty involves emotional and physical changes—these changes may differ between boys and girls. - Adults are fully developed and capable of reproduction; elderly adults experience physical decline. - Humans are mammals: warm-blooded, give birth to live young, and feed offspring milk. - Gestation is the period a mammal carries its unborn baby in the womb. - Larger mammals tend to have longer gestation periods. - There is often a pattern: longer gestation periods correlate with longer lifespans—but there are exceptions.	Life Cycles Mammals: - Life cycle includes four stages: foetus, young, adolescent, adult. - Most give birth to live young and feed them milk using mammary glands. - Monotremes like the platypus lay eggs. Amphibians (Frogs): - Life cycle includes: frogspawn, tadpole, froglet, adult. - Undergo metamorphosis; live both in water and on land. - Tadpoles have gills and tails; adult frogs do not. Insects (e.g. butterflies, bees, ladybirds): - Life cycle includes: egg, larva, pupa, adult. - Undergo complete metamorphosis; some follow incomplete metamorphosis (egg, nymph, adult). - Spiders are not insects (they're arachnids). Birds: - Life cycle includes: egg, hatchling, nestling, fledgling, adult. - All lay eggs; incubation and care by adults vary. - Adult birds can fly (in many cases), reproduce and care for young.

Lesson Sequence Learning challenges in a sequenced order.	1. Material Properties Can I test and group materials based on magnetism, transparency, and hardness? 2. Electrical Conductivity Can I test everyday materials to determine whether they are electrical conductors or insulators? 3. Plan Insulation Experiment Can I plan a fair test to investigate which material is the best thermal insulator? 4. Investigate Insulation Can I carry out a fair test to find out which material best insulates heat? 5. Evaluate Experiment Can I evaluate my insulation experiment and explain which material was the best insulator and why? 6. Material Uses Can I link the uses of plastic, wood, and metal to their properties using evidence from testing?	1. The Human Life Cycle Can I describe the six stages of the human life cycle and identify what happens at each stage? 2. Babies and Children Can I describe how babies and children grow and change, and identify milestones in their development? 3. Adolescence and Puberty Can I explain what puberty is and what physical and emotional changes happen during adolescence? 4. Adults and the Elderly Can I describe the changes that happen in adulthood and later life, and explain how and why they occur? 5. Gestation Periods of Mammals Can I explain what gestation is and compare the gestation periods of different mammals? 6. Gestation and Lifespan Can I identify patterns between gestation periods and lifespans in mammals and draw conclusions from data?	1. Mammals Can I describe the life cycle of a mammal and explain how it compares to the human life cycle? 2. Amphibians Can I explain the life cycle of an amphibian and describe how metamorphosis works? 3. Insects Can I describe the stages of the life cycle of an insect and explain the difference between complete and incomplete metamorphosis? 4. Birds Can I identify the stages in the life cycle of a bird and explain how it is similar to or different from other animal groups?
NC Links	Materials: • Compare and group together everyday materials on the basis of their properties, including hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Working Scientifically: • Plan different types of scientific enquiries, recognising and controlling variables. • Take accurate measurements using a range of equipment. • Record data and results using scientific diagrams, tables, graphs. • Use test results to make predictions to set up further comparative and fair tests. • Report and present findings from enquiries, including conclusions and evaluations.	Animals, including humans: • Describe the changes as humans develop to old age. Working Scientifically: • Plan different types of scientific enquiries. • Record data and results using diagrams, tables, graphs. • Report and present findings from enquiries, including conclusions and causal relationships. • Identify scientific evidence used to support or refute ideas or arguments.	Science – Animals including humans: • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Working Scientifically: • Use scientific language and illustrations to discuss, communicate and justify scientific ideas. • Record data using scientific diagrams and labels, classification keys, tables, bar and line graphs. • Report and present findings from enquiries, including explanations, conclusions and identifying causal relationships. • Recognise the degree of trust in results and identify evidence used to support or refute ideas.

	Summer (3 weeks)	Summer (4 weeks)	Summer (1 week)
Year 5	Factual Knowledge for Year 5	Factual Knowledge for Year 5	What is plastic pollution?
Factual knowledge gained per unit of study	Reproduction A - Sexual reproduction involves two parents and results in offspring that are not identical to either parent. - In mammals, fertilisation is when a sperm (male sex cell) meets an egg (female sex cell) to create a new life. - A foetus develops in the womb, not the stomach. - Male sex cells are produced in the testes; female sex cells are produced in the ovaries. - Plants reproduce sexually through pollination: pollen (male) is transferred to the stigma (female). - The pistil (stigma, style, ovary) is the female part of a plant; the stamen (anther, filament) is the male part. - Fertilisation in plants happens when pollen joins with an ovule in the ovary to form a seed. - Asexual reproduction involves only one parent and produces genetically identical offspring (clones). - Examples of asexual plant reproduction include bulbs, tubers, and runners. - Some animals (e.g. starfish) can reproduce asexually. - Cloning plants from cuttings is a practical example of asexual reproduction.	Reversible and irreversible changes - A soluble substance dissolves in a liquid to form a solution (e.g. salt, sugar). - An insoluble substance does not dissolve in a liquid (e.g. sand, flour). - Temperature and stirring can affect the rate of dissolving. - Sieving separates solids of different sizes; filtering separates insoluble solids from liquids. - Evaporation separates a soluble solid from a solution by changing liquid into gas. - Reversible changes allow the original materials to be recovered (e.g. dissolving, melting, freezing). - Irreversible changes create new materials and cannot be undone (e.g. burning, chemical reactions). - Burning causes a chemical reaction producing new substances and cannot be reversed. - Mixing acid (vinegar) and bicarbonate of soda causes a chemical reaction, releasing a gas. - Fizzing and the formation of a new substance indicate a chemical change has occurred.	

Lesson Sequence Learning challenges in a sequenced order.	1. Sexual Reproduction in Mammals Can I explain how mammals reproduce through sexual reproduction and what happens during fertilisation? 2. Reproductive Parts in Plants Can I identify and describe the male and female reproductive parts of a flowering plant? 3. Pollination Can I explain how pollination leads to fertilisation and seed formation in plants? 4. Asexual Reproduction Can I describe how some plants reproduce asexually and give examples of methods and organisms? 5. Plan: Clone Plants Can I plan a fair test to investigate which plant part is best for growing a cloned plant from a cutting? 6. Plant: Clone Plants Can I carry out a fair test to grow new plants from cuttings and record my findings over time?	1. Dissolving Can I identify which substances are soluble or insoluble, and explain what affects the rate of dissolving? 2. Filtering and Sieving Can I separate mixtures using filtering and sieving, and explain how these methods work? 3. Solutions and Evaporating Can I separate a soluble solid from a solution using evaporation and explain what happens? 4. Reversible Changes Can I describe examples of reversible changes and explain how to retrieve the original substances? 5. Irreversible Changes: Burning Can I explain why burning is an irreversible change and describe what new materials are formed? 6. Irreversible Changes: Acid Reactions Can I describe what happens when an acid reacts with bicarbonate of soda and why it is irreversible?	
NC Links	<i>Science – Living Things and Their Habitats:</i> • Describe the life process of reproduction in some plants and animals. <i>Working Scientifically:</i> • Plan different types of scientific enquiries, including recognising and controlling variables. • Take measurements with accuracy and precision. • Record data using diagrams, tables, bar and line graphs. • Report findings, including conclusions and explanations. • Use scientific language and evidence to justify ideas. • Identify scientific evidence used to support or refute arguments.	<i>Properties and changes of materials:</i> • Know that some materials will dissolve in liquid to form a solution and describe how to recover the substance from the solution. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. • 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. • Working Scientifically: • Plan and carry out different types of scientific enquiries. • Use test results to make predictions and set up further tests. • Take accurate measurements and record data using a range of methods. • Use scientific language and evidence to justify ideas. • Identify scientific evidence that has been used to support or refute ideas or arguments.	

	Summer (2 weeks)
Year 5 Factual knowledge gained per unit of study	Factual Knowledge for Year 5 Reproduction B • Asexual reproduction involves only one parent and results in offspring identical to the parent. • In plants, parts such as cuttings can grow into new plants, which are clones of the parent. • The original plant is called the parent plant; a cutting is a piece removed to grow a new plant. • Some plants reproduce both sexually and asexually. • Accurately measuring plant growth is key for comparing results in scientific enquiries. • Data collected from investigations can be used to spot patterns, make predictions, and suggest further questions. • Line graphs are a useful way to show change over time. • Scientific enquiry involves forming conclusions from data and thinking critically about how to improve or extend an investigation.
Lesson Sequence Learning challenges in a sequenced order.	1. Clone Plant Investigation (Findings) Can I measure and compare the growth of cloned plants and use the results to answer an enquiry question? 2. Interpret Data Can I interpret data from plant experiments and create a line graph to show how plants changed over time?
NC Links	<i>Living Things and Their Habitats:</i> • Describe the life process of reproduction in some plants and animals. <i>Working Scientifically:</i> • Use test results to make predictions and set up further comparative and fair tests. • Take accurate measurements and present data using tables and line graphs. • Report and present findings, including conclusions and suggested improvements. • Use scientific language and ideas to interpret results and justify conclusions.

Term	Topic	Key Learning Areas	Project/Focus Activity
Autumn	Forces	- Friction, air resistance, water resistance- Gravity as a non-contact force- Levers, pulleys and gears	Parachute and water resistance investigations
	Space	- Movement of Earth, Moon and planets- Heliocentric and geocentric models- Gravity and orbits- Day/night and seasons	Solar System model creation
Spring	Properties of Materials	- Thermal and electrical conductivity- Transparency, hardness, magnetism- Fair testing and insulation investigations	Comparative testing of material properties
	Animals Including Humans	- Human life stages- Changes during puberty- Gestation periods in mammals- Lifespan comparisons	Growth charts and life cycle comparisons
	Life Cycles	- Mammal, amphibian, insect and bird life cycles- Metamorphosis- Egg-laying vs live birth	Comparative life cycle diagrams
Summer	Reproduction A	- Sexual and asexual reproduction- Plant reproduction via pollination- Cloning and cuttings	Plan and test plant cuttings
	Reversible and Irreversible Changes	- Solubility, dissolving, filtering, sieving, evaporation- Burning and chemical reactions- Reversible vs irreversible changes	Lab-based separation experiments and reaction demos
	Reproduction B	- Interpreting data from plant experiments- Graphing growth and analysing results- Drawing scientific conclusions and posing new enquiry questions	Graphing clone results and independent plant investigations

	Autumn (6 weeks)	Autumn (6 weeks)	Autumn (1 week)
Year 6	Factual Knowledge for Year 6	Factual Knowledge for Year 6	Renewable Energy Project
Factual knowledge gained per unit of study	Living Things and their Habitats - A living organism moves, reproduces, grows, and excretes. - The stem of a plant moves towards the strongest light source and the roots move away from light. - Plants can reproduce sexually and asexually. - Vertebrates can be put into groups of mammals, birds, fish, amphibians, and reptiles. - Plants can be grouped into flowering and non-flowering plants. - Scientists group organisms based on their features. - Grouping organisms helps scientists to understand how they are related. - Classification keys are used to classify animals. - Classification keys help to identify different animals based on their features. - Classification keys are made up of several "yes" or "no" questions. - Classification is the system of arranging organisms into groups based on shared features. - Classification keys are used to classify plants. - Classification keys help identify different plants based on their features. - Trees can be classified as deciduous, evergreen, or coniferous. - Bacteria are simple organisms invisible to the naked eye. - Some bacteria cause diseases, while others help humans (e.g., by aiding digestion). - Viruses are microorganisms that need a host to reproduce and can cause diseases like flu or the common cold. - Fungi are microorganisms; some cause infections, and some are useful (e.g., in bread making). - Microorganisms such as bacteria, viruses, and fungi can be classified. - The classification of microorganisms is based on their features, such as their shape. - Bacteria, viruses, and fungi have different shapes. - Carl Linnaeus was a Swedish botanist who wrote Systema Naturae (System of Nature). - Linnaeus developed the first hierarchical system to classify animals and plants. - Linnaeus initially divided animals into six classes: mammals, birds, amphibians, fish, insects, and worms. - Linnaeus did not know about microorganisms or classify reptiles as a separate group.	Electricity - A series circuit is one in which all components are connected in one continuous loop. - A series circuit has a cell and wires, plus components such as a bulb, a buzzer, and a switch. - Each component in a circuit diagram is represented by a recognised symbol. - Current is the flow of electricity in a circuit. - Voltage causes the current to flow. - For a circuit to be complete, all components, including a cell, must be connected by wires and the switch must be closed. - An incomplete circuit may have a break in the wires, an open switch, or a wrongly placed cell. - The current does not flow at all in an incomplete circuit. - The more components there are in a circuit, the dimmer the bulbs and quieter the buzzers. - The more components in a circuit, the more difficult it is for current to flow. - The independent variable in the voltage experiment is the voltage (number of cells). - The dependent variable is the loudness of the buzzer. - Controlled variables include the type of cells and number of components used. - Increasing the number of cells (and therefore voltage) increases the loudness of a buzzer. - Accuracy means how close a measurement is to the true value. - Repeatability means the likelihood of getting similar results if an experiment is repeated. - Evaluating experiments involves considering how results could be improved and extended.	What Is and how do we use renewable energy?

Lesson Sequence Learning challenges in a sequenced order.	1. Conditions for life Can I identify the basic requirements for life and explain the difference between living and non-living things? 2. Group organisms Can I group living organisms based on their features and explain how and why they are grouped? 3. Classify animals Can I use classification keys to identify and classify animals by their observable characteristics? 4. Classify plants Can I classify plants based on their features, including whether they are flowering, non-flowering, deciduous, evergreen, or coniferous? 5. Microorganisms Can I explore different types of microorganisms and describe how some are helpful, and others are harmful? 6. Classify microorganisms Can I classify microorganisms based on their features and explain how they are similar and different? 7. Carl Linnaeus Can I explain who Carl Linnaeus was and how his classification system helped organise living things?	1: Construct and draw series circuits using symbols Can I construct a series circuit and draw it accurately using the correct circuit symbols? 2: Complete and incomplete circuits Can I explain what makes a circuit complete or incomplete and describe how this affects the flow of electricity? 3: Variations within circuits Can I explore how adding or removing components in a circuit affects the brightness of bulbs and the loudness of buzzers? 4: Plan – voltage experiment Can I plan a fair test experiment to investigate how voltage affects the loudness of a buzzer? 5: Investigate – voltage experiment Can I carry out an investigation to find out how voltage affects the loudness of a buzzer and record the results accurately? 6: Evaluate – voltage experiment Can I evaluate the results of my voltage experiment and suggest improvements for future tests?	
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NC Links	• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants, and animals. • Working scientifically: Identifying scientific evidence that has been used to support or refute ideas or arguments. • Working scientifically: Use and develop keys and other information records to identify, classify and describe living things (non-statutory). • Give reasons for classifying plants and animals based on specific characteristics. • Working scientifically: Reporting and presenting findings from enquiries, including conclusions, causal relationships, and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. • Working scientifically: Use relevant scientific language and illustrations to discuss, communicate and justify ideas and explain how scientific ideas have developed over time (non-statutory).	• Use recognised symbols when representing a simple circuit in a diagram. • 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. • Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • Working scientifically: • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms. • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Taking measurements using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Using test results to make predictions to set up further comparative and fair tests.	
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	Spring (5 weeks)	Spring (1 weeks)	Spring (3 week)
Year 6	Factual Knowledge for Year 6	Sustainability Energy Project	Factual Knowledge for Year 6
Factual knowledge gained per unit of study	Light • Light reflects from an object to the eye. • Light passes through the pupil to the retina. • Luminous objects emit light; non-luminous objects reflect light. • Light travels in straight lines. • Light reflects off smooth surfaces like mirrors at the same angle it strikes. • Reflection allows us to see objects in mirrors. • Shadows form because light cannot pass through opaque objects. • Shadow shape matches the object blocking light. • Shadows are areas of darkness created by blocked light rays. • The size of the shadow depends on the distance between the light source and the object. • Variables in experiments include independent (distance), dependent (shadow size), and controlled (object size and position). • Shadows increase in size as objects move closer to the light source. • Systematic observation and accurate measurement ensure reliable results. • Shadow size is affected by the portion of light rays blocked by the object. • Results should be presented using scientific diagrams or line graphs. • Improvements to investigations might include better measurement techniques. • Refraction occurs because light changes speed in different media. • Light traveling through water appears bent due to slower speed compared to air. • White light is composed of different colours. • A prism separates white light into a spectrum of colours. • Isaac Newton discovered the light spectrum.	What is light pollution and how can we reduce it?	The circulatory system • The human circulatory system includes the heart, blood vessels, and blood. • Its primary role is to transport oxygen, nutrients, and waste products throughout the body. • Blood carries oxygen from the lungs and nutrients from the digestive system to cells. • Blood also transports carbon dioxide and other waste products to be removed from the body. • The heart is a muscular organ that acts as a pump to circulate blood. • It has four chambers: two atria and two ventricles, each playing a specific role in blood circulation. • Blood flows in a specific pattern through the heart: oxygen-poor blood enters the right atrium, passes to the right ventricle, and is pumped to the lungs. Oxygen-rich blood returns to the left atrium, moves to the left ventricle, and is then pumped to the body. • Valves prevent backflow, ensuring blood flows in one direction. • Oxygenated blood is rich in oxygen and is delivered to the body's tissues, while deoxygenated blood is oxygen-poor and returned to the lungs. • The circulatory system works closely with the lungs to oxygenate blood. • The heart's key structures include the atria, ventricles, valves, and blood vessels such as the aorta and pulmonary arteries.

Lesson Sequence Learning challenges in a sequenced order.	1: How we see Can I explain how humans see objects and identify key parts of the eye? 2: Light and straight lines Can I demonstrate how light travels in straight lines and reflects off surfaces? 3: Shadow formation Can I investigate how shadows are formed and explain their shape? 4: Plan - shadow experiment Can I plan an experiment to explore the relationship between light source distance and shadow size? 5: Investigate - shadow experiment Can I conduct an experiment systematically to measure shadow size accurately? 6: Evaluate - shadow experiment Can I evaluate experiment results to explain how distance affects shadow size? 7: Refraction Can I describe how refraction changes the direction of light when it moves between mediums? 8: Explore light Can I explain how white light separates into colours and explore the light spectrum?		1.Circulatory system Can I describe the main components and function of the circulatory system? 2. Blood Can I explain the role of blood in transporting oxygen, nutrients, and waste products? 3. Heart Can I identify the structure and function of the heart? 4. Blood flow in the heart I trace the path of blood flow through the chambers of the heart. 5. Oxygenated and deoxygenated blood Can I differentiate between oxygenated and deoxygenated blood and explain their roles in the circulatory system? 6. Dissection of the heart Can I safely perform a heart dissection and identify its parts?
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NC Links	• Explain that we see objects because light travels to our eyes, either directly or after reflecting off objects. • Use scientific language and illustrations to communicate ideas. • Use the concept of light traveling in straight lines to explain how objects are seen. • Record data using diagrams, classification keys, tables, and graphs. • Use light traveling in straight lines to explain why shadows have the same shape as objects. • Record results with increasing complexity, using scientific diagrams and graphs. • Plan scientific enquiries, recognizing and controlling variables. • Take measurements with increasing accuracy and precision, including repeat readings. • Record data with increasing complexity, using scientific diagrams, scatter graphs, bar and line graphs. • Recognize that light travels in straight lines but refracts when changing mediums. • Identify scientific evidence to support or refute ideas. • Recognize that light travels in straight lines. • Understand historical scientific contributions and how ideas about light have evolved.		• Recognise the main parts of the human circulatory system and describe the functions of the heart, blood vessels, and blood. • Use scientific language and illustrations to explain ideas clearly. • Identify the role of blood in transporting oxygen, nutrients, and waste products to and from the body's cells. • Explain the importance of a healthy circulatory system for overall health. • Describe the structure and function of the heart as a pump that circulates blood throughout the body. • Use scientific evidence to support or refute ideas about the role of the heart in health and fitness. • Trace the path of blood flow through the heart's chambers and understand the role of valves in maintaining blood direction. • Record data about heart function and present results using scientific diagrams and graphs. • Differentiate between oxygenated and deoxygenated blood and explain how blood is oxygenated in the lungs. • Explore the relationship between exercise, heart rate, and oxygen delivery to muscles. • Observe and identify the key structures of the heart through practical investigation (e.g., dissection). • Develop understanding of how the heart's anatomy supports its function in the circulatory system.
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	Spring (3 weeks)	Summer (2 weeks)	Spring (3 week)
Year 6	Factual Knowledge for Year 6	Factual Knowledge for Year 6	Factual Knowledge for Year 6
Factual knowledge gained per unit of study	Diet, Drugs and Lifestyle - A balanced diet includes carbohydrates, fats, proteins, vitamins, minerals, fibre, and water. - Fats are classified as unsaturated (positive impact), saturated, and trans fats (negative impact). - Consuming too much or too little energy (calories) affects overall and heart health. - Drugs are chemicals that change how the body or brain functions. - Painkillers dull pain, stimulants make you alert, and depressants calm the body. - Some drugs are legal, like caffeine and paracetamol, while others are illegal. - Cigarettes contain harmful substances like tar, nicotine, and carbon monoxide. - Smoking damages the body, leading to heart and lung diseases and breathing problems. - Nicotine is highly addictive, and tar can cause cancer. - The independent variable is the duration of exercise. - The dependent variable is heart rate (bpm). - Controlled variables include the type of exercise performed. - Heart rate increases with exercise duration. - Accurate measurement and consistent methods are essential for reliable results. - Longer exercise durations raise heart rate due to increased circulatory demand. - Data analysis can highlight patterns, anomalies, and areas for improvement.	Variations - Organisms are living things, including animals, plants, bacteria, and fungi. - A species is a group of similar organisms capable of reproducing to create offspring. - Variation refers to differences between organisms, which occur within and between species. - Characteristics are features that identify an organism or group. - Inheritance is the process by which parents pass characteristics to their offspring. - Humans and other animals can inherit characteristics like hair colour and eye colour. - Breeding animals can lead to desirable characteristics, but overbreeding can have negative effects.	Adaptations - Adaptations are characteristics that help animals survive in their habitats. - Polar animals have thick fur or blubber for insulation. Desert animals have thin fur and long eyelashes to protect them from sandstorms and heat. - Plants in deserts have longer roots for accessing water and larger stems for storing water. Cacti have spines to reduce water loss. - Evolution is the process of change in characteristics over a long time, creating species better adapted to their environments. - Darwin proposed the "Theory of Evolution," stating organisms evolved from common ancestors by adapting to their environments. - Natural selection enables organisms with advantageous characteristics to survive, reproduce, and pass on traits to the next generation. - Darwin observed that finches on the Galapagos Islands had different beak shapes, allowing them to eat specific types of food like seeds or insects.

Lesson Sequence Learning challenges in a sequenced order.	1: Diet Can I explain how a balanced diet impacts overall and heart health? 2: Drugs Can I describe the effects of different types of drugs on the body? 3: Cigarettes Can I explain the harmful effects of smoking and vaping on the heart and body? 4: Plan - heart rate experiment Can I plan a fair experiment to explore how exercise duration affects heart rate? 5: Investigate - heart rate experiment Can I conduct an experiment to investigate how exercise duration influences heart rate? 6: Evaluate - heart rate experiment Can I analyse my experiment results and evaluate the impact of exercise duration on heart rate?	1: Variation Can I explain what variation is and identify differences between organisms? 2: Inheritance and characteristics Can I describe how characteristics are inherited from parents to offspring?	1: Animal adaptations Can I explain how animals are adapted to survive in extreme habitats, such as polar and desert regions? 2: Plant adaptations Can I describe how plants adapt to survive in habitats like deserts or polar regions? 3: Evolution Can I explain what evolution is and why it is important for survival? 4: Charles Darwin Can I describe Charles Darwin's contributions to the theory of evolution? 5: Natural selection Can I explain how natural selection allows animals and plants to adapt over generations? 6: Darwin's finches Can I investigate Darwin's study of finches to understand the link between beaks and diets?
NC Links	- Recognize the impact of diet, exercise, drugs, and lifestyle on how bodies function. - Working scientifically: Use secondary sources to separate fact from opinion. - Recognize the harmful effects of smoking and vaping on the body. - Plan scientific enquiries, recognizing and controlling variables. - Take accurate measurements and conduct fair tests. - Analyse results to draw conclusions and suggest improvements.	- Recognize that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. - Use relevant scientific language and illustrations to discuss and justify scientific ideas. - Recognize that parents pass on characteristics to offspring, resulting in variation. - Working scientifically: Record data and results using diagrams, classification keys, tables, scatter graphs, bar charts, and line graphs.	- Recognize how animals and plants adapt to their environments and how adaptations may lead to evolution. - Understand how living things develop different characteristics over time for survival. - Recognize natural selection as a cause of evolution and how it helps organisms adapt. - Explore Darwin's contributions and the development of scientific ideas over time. - Use secondary sources to separate fact from opinion, report findings, and justify conclusions based on scientific evidence.

	Summer (2 weeks)	Summer (1 week)	Spring (3 weeks)
Year 6 Factual knowledge gained per unit of study	Factual Knowledge for Year 6 Fossils - Fossils are imprints in rock of living things that lived a long time ago. - Fossilisation involves decomposition, sedimentation, and mineralisation. - Layers of sediment compact over time, forming fossils as minerals replace the skeleton. - Fossils can show how organisms have evolved over time. - Older fossils are generally smaller and simpler, while newer fossils are larger and more complex. - Fossils provide evidence supporting Charles Darwin's theory of evolution. - Mary Anning was a pioneering palaeontologist who discovered significant fossils like the plesiosaur. - Her discoveries in the 1800s helped develop the understanding of evolution, though her work was often not credited due to her gender.	Consolidation Week	Themed transition projects Please see online overview
Lesson Sequence Learning challenges in a sequenced order.	1: Fossil formation Can I explain how fossils are formed and describe the process of fossilisation? 2: Explore fossils Can I investigate how fossils provide evidence for evolution? 3: Mary Anning Can I explain the significance of Mary Anning's discoveries in our understanding of fossils and evolution?		
NC Links	- Recognize that living things have changed over time and fossils provide information about life millions of years ago. - Use scientific methods to gather evidence and refute or support ideas. - Understand the connection between fossils and evolution. - Use scientific language to justify and communicate ideas about how scientific concepts have evolved. - Learn about significant historical figures in science and their contributions. - Report and present findings in creative formats, demonstrating an understanding of scientific evidence.		

Term	Topic	Key Learning Areas	Project
Autumn	Living Things and Their Habitats	Classification of organisms, use of classification keys, introduction to Carl Linnaeus	Renewable Energy Project: Understanding renewable energy and its uses
	Electricity	Series circuits, circuit symbols, complete and incomplete circuits, voltage experiments	Renewable Energy Project: Exploring electricity and sustainable energy
Spring	Light	How light travels and reflects, shadow formation, refraction, colour spectrum	Sustainability Energy Project: Investigating light pollution and ways to reduce it
	The Circulatory System	Structure and function of heart, blood vessels, blood flow, impact of exercise	No specific project
Summer	Diet, Drugs, and Lifestyle	Impact of diet, exercise, and drugs, heart rate investigation	No specific project
	Variation and Adaptations	Inheritance, organism variation, animal and plant adaptations, Darwin's evolution theory	No specific project
	Fossils	Fossil formation, evidence for evolution, Mary Anning's discoveries	No specific project