



King's Meadow Academy

Science

Subject Statement Science

Rationale	At King's Meadow Academy, we believe science enables children to develop a deeper understanding of the world around them through curiosity, exploration and enquiry. Science encourages pupils to ask questions, investigate ideas and use evidence to explain the natural and physical world. Through practical experiences and scientific enquiry, children develop critical thinking, resilience and problem-solving skills whilst learning how science influences everyday life. Our curriculum develops scientific knowledge alongside the skills needed to work scientifically, preparing pupils to become informed, responsible citizens who understand the importance of science in addressing local and global challenges. Through King's Meadow Academy's 4Cs pedagogy, pupils connect scientific knowledge, cultivate understanding through enquiry, embrace challenge through investigation and are coached to think and communicate like scientists.
Vision for the Curriculum	Our vision is for every child to become a curious, confident and enthusiastic scientist who enjoys exploring the world through observation, investigation and enquiry. We want pupils to develop secure scientific knowledge and the confidence to ask questions, make predictions, analyse evidence and communicate their ideas using accurate scientific vocabulary. Through our Reading Enhanced Curriculum, children gain an appreciation of how science has shaped the modern world and understand how scientific discoveries continue to improve lives. By the end of Key Stage Two, pupils will have developed the knowledge, enquiry skills and confidence required to continue their scientific learning successfully at secondary school. We want every child to leave King's Meadow Academy with the confidence to ask scientific questions, evaluate evidence and understand how science shapes everyday life and future innovation.
Intent	Our Science curriculum is carefully designed to develop pupils' scientific knowledge and enquiry skills progressively from the Early Years through to Year 6. Learning is sequenced so that substantive knowledge is built systematically whilst disciplinary knowledge is developed through practical investigations and scientific enquiry. Each unit is driven by an overarching Big Question that encourages curiosity and provides purpose for learning. Reading is integral to every unit, with carefully selected texts enriching scientific understanding, introducing ambitious vocabulary and exposing pupils to influential scientists from a diverse range of backgrounds and cultures. The curriculum identifies clear Key Concepts to Assess within every lesson, ensuring that the most important scientific knowledge is explicitly taught, revisited and retained over time. Through regular retrieval practice, practical investigations and purposeful discussion, children strengthen their long-term memory and develop an increasingly secure understanding of scientific concepts. We aim for every pupil to: - develop secure substantive and disciplinary scientific knowledge; - communicate confidently using precise scientific vocabulary; - work scientifically through observation, questioning, prediction, investigation and evaluation; - appreciate the role science plays in everyday life and future innovation; - become curious, resilient learners who enjoy exploring and explaining the world around them.

Implementation	Science is taught weekly using King's Meadow Academy's bespoke mixed-age curriculum, which provides full National Curriculum coverage whilst ensuring clear progression between year groups. Learning is carefully sequenced so that children revisit previously taught knowledge before building upon it with increasingly challenging scientific concepts. Each lesson begins with retrieval practice to revisit previous learning and strengthen long-term memory. Teachers explicitly teach new scientific vocabulary and concepts before modelling investigations and scientific thinking. Children are given regular opportunities to explore, observe, classify, compare, predict, measure and evaluate through practical enquiry. The curriculum develops all aspects of Working Scientifically through first-hand investigations alongside the acquisition of substantive knowledge. High-quality questioning, hinge questions and responsive assessment allow teachers to identify misconceptions and adapt teaching to meet pupils' needs. The Key Concepts to Assess clearly identify the essential learning for each lesson and demonstrate progression between year groups within mixed-age classes. These concepts are revisited throughout each unit and across the curriculum through retrieval activities, discussion, practical application and assessment, ensuring that learning becomes embedded in pupils' long-term memory. Reading remains central to science lessons through carefully selected texts that develop background knowledge, strengthen scientific vocabulary and inspire children through the work of significant scientists.
Impact	By the end of their primary education, pupils leave King's Meadow Academy with secure scientific knowledge, well-developed enquiry skills and a genuine curiosity about the world around them. They confidently use scientific vocabulary to explain concepts, justify conclusions and communicate their ideas. Children demonstrate progression through the successful acquisition of the Key Concepts to Assess, applying previously learnt knowledge to new scientific contexts and making meaningful links between different areas of science. They understand how scientific enquiry leads to reliable conclusions and appreciate the importance of evidence when explaining scientific ideas. Assessment demonstrates that pupils are increasingly confident in Working Scientifically and are well prepared for the demands of Key Stage Three science. Most importantly, children develop a lifelong interest in science and recognise its importance in understanding and improving the world around them. Pupils leave King's Meadow Academy as scientifically literate, inquisitive young people who understand how science influences everyday decisions and future global developments.
Pedagogical Approach	Science is taught through King's Meadow Academy's whole-school pedagogical approach, ensuring consistency and high-quality teaching across the school. Learning begins by Connecting to previous knowledge through retrieval practice and discussion, enabling pupils to activate prior learning and identify links between scientific concepts. Teachers Cultivate new learning through explicit instruction, high-quality modelling, carefully planned questioning and practical investigation. Scientific vocabulary is taught

	explicitly and revisited regularly so that children develop confidence in communicating scientifically. Children are Challenged to think critically, justify predictions, evaluate evidence and explain their reasoning using increasingly sophisticated scientific language. Practical enquiry provides opportunities for pupils to apply knowledge independently whilst developing resilience and problem-solving skills. Teachers continually Coach pupils through responsive feedback, hinge questions and formative assessment, adapting learning to address misconceptions and extend understanding. Regular retrieval practice, collaborative discussion and purposeful investigations ensure scientific knowledge is retained and applied confidently over time. Teachers continually support and challenge pupils through responsive feedback, hinge questions and formative assessment, adapting learning to address misconceptions and extend understanding. Regular retrieval practice, collaborative discussion and purposeful investigations ensure scientific knowledge is retained and applied confidently over time.
Adaptations for SEND learners	Our Science curriculum is fully inclusive and designed so that every pupil can achieve success whilst maintaining high expectations. Teachers carefully reduce cognitive load by presenting learning in small, manageable steps and explicitly teaching key scientific vocabulary before introducing new concepts. Practical investigations provide meaningful, hands-on experiences that allow pupils to develop scientific understanding through observation and exploration. Visual supports, dual coding, diagrams, sentence stems, vocabulary mats, writing frames and practical resources enable pupils to access scientific learning with increasing independence. Teachers adapt questioning, provide additional modelling and use retrieval activities to strengthen understanding and support long-term memory. Collaborative learning and scaffolded investigations ensure all pupils can participate fully whilst developing both substantive knowledge and Working Scientifically skills. Teachers continue to Connect prior learning, Cultivate confidence through scaffolded practical enquiry, provide appropriate Challenge and Coach pupils through responsive questioning so every learner can succeed.
Strengths	A carefully sequenced mixed-age curriculum that ensures clear progression from Year 1 to Year 6. A strong balance between substantive scientific knowledge and Working Scientifically skills. Reading is fully embedded through the Reading Enhanced Curriculum, enriching scientific knowledge and vocabulary. Clearly identified Key Concepts to Assess provide precise assessment opportunities and demonstrate progression across year groups. Practical enquiry develops curiosity, critical thinking, resilience and independence. Explicit teaching of ambitious scientific vocabulary enables pupils to communicate confidently using scientific language. Retrieval practice and the 4Cs pedagogical approach ensure knowledge is revisited, retained and applied confidently. Rich opportunities to learn about influential scientists and real-world applications inspire pupils and broaden aspirations.

	A fully inclusive curriculum with high-quality adaptations enabling all pupils, including those with SEND, to achieve success. Science is enriched through meaningful cross-curricular links, outdoor learning and practical investigations that make learning memorable and relevant.
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Medium Term Cycle A

Autumn 2		
KS1	Everyday Materials	
	Year 1	Year 2
	L1: What material is it made from? L2A: What properties do materials have? L2B: What properties do materials have? L2C: What properties do materials have?	L1: What material is it made from? L2A: What properties do materials have? L2B: What properties do materials have? L2C: What properties do materials have?
Key Concepts to assess	L1: Children know the difference between an object and the material it is made from. Children can identify and name everyday materials including wood, plastic, glass, metal, rock, paper, brick and rubber. L2A: Children can identify and name the properties of materials including hard, soft, rough, smooth, dull and shiny. L2B: Children can group and sort materials according to their observable properties with support. Children can identify simple similarities and differences between materials. L2C: Children can identify whether materials are bendy or stiff and waterproof or absorbent. Children can carry out a simple comparative test with support.	L1: Children know the difference between an object and the material it is made from. Children can identify, classify and compare everyday materials. Children can explain why particular objects are made from certain materials by referring to their properties. L2A: Children can identify, describe and compare the properties of materials using scientific vocabulary. Children can explain how the properties of a material make it suitable for particular objects. L2B: Children can independently group and classify materials according to more than one property. Children can explain how they have grouped the materials and identify patterns from their observations. L2C: Children can investigate and compare the properties of materials through simple comparative tests. Children can explain what their results show, use simple scientific vocabulary when discussing their findings and identify the most suitable material for a given purpose using evidence from their investigation.
Vocabulary	Object, material, wood, plastic, glass, metal, rock, stone, rubber, hard, soft, rough, smooth, shiny	Y1+ Object, material, wood, plastic, glass, metal, rock, stone, rubber, hard, soft, rough, smooth, shiny, Properties, absorbent, dull, stiff, stretchy, waterproof
Experiences	Materials hunt around the school. Waterproof materials investigation. Absorbency investigation. Design and make a waterproof object for a toy.	
SMSC	Social – Working collaboratively to investigate, compare and discuss the properties of materials. Moral – Understanding the importance of choosing suitable materials and reducing waste by reusing and recycling where possible. Spiritual – Developing curiosity about why different materials have unique properties. Cultural – Exploring how different materials are used in homes and communities around the world	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	

School Values	We are happy – Enjoying practical investigations and exploring the properties of different materials. We enjoy a challenge – Persevering when carrying out investigations and solving scientific problems. We show respect – Respecting equipment, resources and the ideas of others during collaborative work. We are ready and fit for our future – Developing scientific enquiry skills and using evidence to make informed decisions.
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Spring 1		
KS1	Animals Including Humans	
	Year 1	Year 2
	L1A – What do I know about my body? L1b – What do I know about my body? L2A – How are animals different? L2B – How are animals different? L3A – Do all animals eat the same things? L3B – Do all animals eat the same things?	L1a – What do I know about my body? L1b – What do I know about my body? L2A – How are animals different? L2B – How are animals different? L3A – Do all animals eat the same things? L3B – Do all animals eat the same things?
Key Concepts to assess	L1A - Children can identify, name and label the basic parts of the human body including the head, elbow, stomach, knee, foot, wrist, chest and shoulder. L1B - Children know humans have five senses. Children can name the body part associated with each sense L2A - Children can identify and name the five main groups of vertebrates: mammals, birds, fish, reptiles and amphibians. L2B - Children can identify similarities between different groups of animals. L3A - Children know the meaning of carnivore, herbivore and omnivore. Children can identify examples of each. L3B - Children can identify that different animals eat different foods.	L1A - Children can identify, name and label the basic parts of the human body and explain the purpose of each body part. Children can compare how different body parts help humans carry out everyday activities. L1B - Children know humans have five senses and can explain how each sense helps us understand the world around us. Children can use observations to describe what they discover through each sense. L2A - Children can identify, classify and compare animals into the five vertebrate groups. Children can explain the features that help them decide which group an animal belongs to. L2B - Children can compare similarities and differences between animal groups and explain how their features help them survive. L3A - Children can classify animals according to their diet and explain why animals belong to each group using evidence from their features. L3B - Children can compare animal diets and explain how an animal's teeth, mouth or body structure gives clues about what it eats.
Vocabulary	Body, head, shoulder, elbow, wrist, chest, stomach, knee, foot, senses, sight, hearing, smell, taste, touch, mammal, bird, fish, reptile, amphibian, carnivore, herbivore, omnivore	Y1+ Vertebrate, classify, compare, features, structure, observe, similarities, differences, scientific thinking, recording
Experiences	Animal classification hunt around school using photographs and toy animals. Explore the five senses through practical investigations. Create a simple animal sorting investigation. Visit a local farm, wildlife area or invite an animal visitor into school.	
SMSC	Social – Working collaboratively to classify animals and carry out investigations. Moral – Understanding that animals should be cared for and treated with kindness.	

	Spiritual – Appreciating the diversity and complexity of living things and the human body. Cultural – Exploring how different cultures care for animals and healthy lifestyles.
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.
School Values	We show respect – Caring for living things and respecting others' ideas. We enjoy a challenge – Explaining how animals are grouped using scientific evidence. We are ready and fit for our future – Developing scientific enquiry and observation skills. We celebrate diversity – Appreciating the variety of animals and recognising that differences make living things unique.

Spring 2		
KS1	Seasonal Changes	
	Year 1	Year 2
	L2B – What are seasons? L2C – What are seasons? L2D – What are seasons? L3 – Are all trees the same? L4A – What are the parts of a flower? L4B – What plants can we find? L4C – Why are plants amazing?	L2B – What are seasons? L2C – What are seasons? L2D – What are seasons? L3 – Are all trees the same? L4A – What are the parts of a flower? L4B – What plants can we find? L4C – Why are plants amazing?
Key Concepts to assess	L2B - Children can name the four seasons and identify the months associated with each season. Children can identify simple changes that happen in the environment across the four seasons. L2C - Children can describe the typical weather associated with each season. L2D - Children can observe seasonal changes and ask simple questions about the world around them. L3 - Children can identify the basic parts of a tree including the roots, trunk, branches, twigs, leaves and bark. Children can name common deciduous and evergreen trees. L4A - Children can identify and name the basic parts of a flowering plant including the roots, stem, leaves, flower and petals. L3B – Children can identify common wild and garden plants and flowers. L4A - Children know that plants change throughout the year and can observe simple changes over time.	L2B - Children can name the four seasons and describe how the weather, daylight hours and environment change throughout the year. Children can explain how these changes affect plants and animals. L2C - Children can explain how the weather changes across the four seasons and describe how the length of the day changes throughout the year. L2D - Children can make careful observations of seasonal changes, record what they notice and use observations to answer scientific questions. L3 - Children can identify and compare deciduous and evergreen trees, explaining the similarities and differences between them and describing how trees change throughout the seasons. L4A - Children can identify and label the parts of a flowering plant and explain the role of each part in helping the plant to grow and survive. L3B - Children can identify, compare and classify common wild and garden plants using their observable features.

		L4A - Children can explain how plants change throughout the seasons and use observations to describe and report those changes using scientific vocabulary.
Vocabulary	Spring, Summer, Autumn, Winter, season, weather, tree, trunk, bark, branch, twig, leaf, root, stem, flower, petal, deciduous, evergreen, wild plant, garden plant	Y1+ Observe, compare, classify, identify, evergreen, deciduous, environment, daylight, changes, scientific thinking, recording
Experiences	Seasonal walk around the school grounds. Tree and plant identification hunt. Plant bulbs or seeds and observe changes over time. Create a class weather station and record seasonal observations.	
SMSC	Social – Working together to observe and investigate seasonal changes in the local environment. Moral – Understanding the importance of caring for plants and the natural environment. Spiritual (wonder at the natural world) Cultural (how seasons influence celebrations, farming and traditions around the world).	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We are happy – Enjoying learning outdoors and exploring nature. We show respect – Caring for plants and the natural environment. We enjoy a challenge – Using observations to explain seasonal changes. We are ready and fit for our future – Developing enquiry, observation and recording skills through scientific investigations.	

Summer 1		
KS1	Plants (Growing in Our Environment)	
	Year 1	Year 2
	L1A – How can we grow in our environment? L1B – How can we grow in our environment? L1C – How can we grow in our environment?	L1A – How can we grow in our environment? L1B – How can we grow in our environment? L1C – How can we grow in our environment?
Key Concepts to assess	L1A - Children can identify and name the basic parts of a flowering plant including the roots, stem, leaves, flower and petals. Children know that plants need water, light and warmth to grow. L1B - Children can observe how a plant changes as it grows and identify simple changes over time. L1C - Children can observe and record changes in a growing plant using simple drawings or labelled diagrams.	L1A - Children can identify and label the basic parts of a flowering plant and explain how each part helps the plant to grow and survive. Children can explain what plants need to grow healthily. L1B - Children can make careful observations of plant growth over time, record changes accurately and use their observations to explain how a plant develops. L1C - Children can observe, measure and record plant growth over time using labelled diagrams or simple tables. Children can explain what their observations show.

Vocabulary	Plant, flower, stem, leaf, petal, root, seed, bulb, grow, light, water, warmth	Y1+ Observe, record, measure, compare, investigate, predict, scientific thinking, labelled diagram, changes, growth
Experiences	Plant seeds or bulbs and observe them growing over time. Carry out a plant-growing investigation (e.g. What happens if a plant has no water or no light?). Visit the school grounds to identify different plants and trees. Keep a simple plant growth diary using drawings and measurements.	
SMSC	Social – Working collaboratively to care for plants and carry out investigations. Moral – Understanding the importance of caring for living things and the environment. Spiritual – Appreciating the beauty and growth of plants. Cultural – Understanding the importance of plants in different cultures, food production and habitats	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We are happy – Enjoying learning outdoors and watching plants grow We show respect – Caring for living plants and the natural environment. We celebrate diversity – Appreciating the wide variety of plants and recognising how different plants thrive in different environments. We enjoy a challenge – Making predictions and explaining the results of investigations. We are ready and fit for our future – Developing observation, recording and enquiry skills that are essential for scientific learning.	
Summer 2		
KS1	Everyday Materials	
	Year 1	Year 2
	L1 – What does waterproof mean? L2 – What is a Macintosh? L3 – How can we compare how waterproof a material is?	L1 – What does waterproof mean? L2 – What is a Macintosh? L3 – How can we compare how waterproof a material is?
Key Concepts to assess	L1 - Children can identify whether a material is waterproof or not waterproof. Children can identify and name materials including plastic, metal, wood, glass, fabric and paper. L2 - Children know that Charles Macintosh invented waterproof clothing. Children understand that waterproof materials help to keep people dry. L3 - Children can carry out a simple comparative test with support to investigate whether materials are waterproof. Children can make simple observations about what they notice.	L1 - Children can identify and compare waterproof and non-waterproof materials. Children can explain why some materials are more suitable than others for keeping objects dry. L2 - Children know that Charles Macintosh invented waterproof clothing and can explain why this invention was important. Children can identify examples of waterproof materials used in everyday life. L3 - Children can carry out a comparative test independently using simple equipment. Children can make careful observations, record their findings and explain which materials are most waterproof using evidence from their investigation.
Vocabulary	Material, waterproof, not waterproof, plastic, paper, fabric, wood, metal, glass, absorbent, dry, wet	Y1+ Properties, compare, investigate, observe, classify, evidence, results, predict, conclusion, Charles Macintosh, scientific thinking, recording

Experiences	Investigate which materials are waterproof. Design and test a waterproof coat or umbrella for a toy. Compare everyday waterproof objects found around school. Carry out a simple fair test using pipettes and different materials.
SMSC	Social – Working collaboratively to plan, carry out and evaluate investigations. Moral – Understanding how scientific discoveries improve people's lives and help meet everyday needs. Spiritual – Developing curiosity about scientific discoveries that improve everyday life. Cultural – Exploring inventions and materials used in different countries and climates
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.
School Values	We are happy – Enjoying practical investigations and testing different materials to solve real-life problems. We enjoy a challenge – Testing materials and explaining results using evidence. We show respect – Respecting equipment, resources and the ideas of others during investigations. We are ready and fit for our future – Developing scientific enquiry, investigation and problem-solving skills. We celebrate diversity – Recognising that different materials have different properties and are suitable for different purposes.

Autumn 1		
LKS2	Rocks	
	Year 3	Year 4
	L1 – Are all rocks the same? L2A – How are fossils formed? L2B – How are fossils formed? L3 – What is weathering? L4A – What is soil? L4B – What is soil?	L1 – Are all rocks the same? L2A – How are fossils formed? L2B – How are fossils formed? L3 – What is weathering? L4A – What is soil? L4B – What is soil?
Key Concepts to assess	L1 - Children can compare and group different rocks according to their appearance and simple physical properties. Children can describe similarities and differences between rocks. L2A - Children know that fossils are the preserved remains or traces of living things. Children can describe, in simple terms, how fossils are formed. L2B - Children can observe fossils and identify similarities with living things. L3 - Children can describe what weathering is and explain how weathering changes rocks over time. L4A - Children know that soil is made from rocks and organic matter.	L1 - Children can compare, classify and justify how rocks are grouped using evidence from their physical properties. Children can explain why different rocks have different characteristics. L2A - Children can explain how fossils are formed over millions of years and use fossil evidence to make simple deductions about organisms that lived in the past. L2B - Children can compare fossils with living organisms and justify their ideas using observations and scientific evidence. L3 - Children can explain how different types of weathering affect different rocks and identify patterns from observations and investigations.

	L4B - Children can investigate different soils using simple observations.	L4A - Children can explain how soil is formed and compare different types of soil according to their properties. L4B - Children can plan and carry out a comparative investigation of different soils, recording and interpreting their findings.
Vocabulary	Rock, fossil, weathering, soil, organic matter,	Y3+ Igneous, sedimentary, metamorphic, erosion, permeable, impermeable,
Experiences	Investigate and classify different rock and soil samples. Create fossils using clay or plaster to model the fossilisation process.	
SMSC	Social – Working collaboratively to investigate rocks, fossils and the human body.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We are happy – Enjoying practical investigations and discovering which materials are best suited for different purposes We enjoy a challenge – Using scientific evidence to explain observations and solve problems. We show respect – Respecting scientific equipment, each other's ideas and our own bodies. We are ready and fit for our future – Developing enquiry, investigation and reasoning skills through practical science.	

Autumn 2		
LKS2	Animals Including Humans	
	Year 3	Year 4
	L1 – What is a skeleton? L2 – What does a skeleton do? L3 – How do muscles support movement? L4 – Why do humans need the right amount of nutrition? L5 – Do animals need the same amount of nutrition?	L1 – What is a skeleton? L2 – What does a skeleton do? L3 – How do muscles support movement? L4 – Why do humans need the right amount of nutrition? L5 – Do animals need the same amount of nutrition?
Key Concepts to assess	L1 - Children know that humans and many animals have skeletons made of bones. Children can identify the main parts of a skeleton. L2 - Children can identify how skeletons protect important organs and help animals move. L3 - Children know that muscles work with bones to help us move. L4 - Children know that humans need the correct types and amounts of nutrition to stay healthy. L5 - Children know that different animals need different amounts of food.	L1 - Children can explain the functions of the skeleton, including support, protection and movement, using scientific vocabulary. L2 - Children can explain how bones, joints and muscles work together to enable movement. L3 - Children can explain how muscles contract and relax to move bones at joints. L4 - Children can explain why a balanced diet is important and describe how nutrition supports growth, repair and energy.

		L5 - Children can explain why nutritional requirements vary between animals depending on size, age and lifestyle.
Vocabulary	skeleton, bone, muscle, joint, nutrition, healthy diet, vertebrate, protection, movement	Y3+ contract, relax, balanced diet, nutrients, minerals, calcium, carbohydrates, protein, evidence, classify, compare
Experiences	Explore the human skeleton using models or digital resources. Investigate how muscles and joints work through practical movement activities.	
SMSC	Moral – Understanding the importance of looking after our bodies through healthy nutrition and exercise.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We are happy – Enjoying practical investigations and exploring the properties of different materials. We enjoy a challenge – Using scientific evidence to explain observations and solve problems. We show respect – Respecting scientific equipment, each other's ideas and our own bodies. We are ready and fit for our future – Developing enquiry, investigation and reasoning skills through practical science. We are happy – Enjoying practical investigations and discovering how the human body and Earth's materials work. We are safe – Working safely during investigations and understanding how nutrition supports a healthy lifestyle.	

Spring 1		
LKS2	Light	
	Year 3	Year 4
	L1 – What is the difference between light and dark? L2 – How can the Sun be a harmful light source? L3 – How are shadows formed? L4 – What are opaque, transparent and translucent materials? L5 – How does the size of a shadow change? L6 – Which materials reflect light?	L1 – What is the difference between light and dark? L2 – How can the Sun be a harmful light source? L3 – How are shadows formed? L4 – What are opaque, transparent and translucent materials? L5 – How does the size of a shadow change? L6 – Which materials reflect light?
Key Concepts to assess	L1 - Children know that darkness is the absence of light. Children can identify natural and artificial sources of light and explain that we need light to see. L2 - Children know that the Sun is a natural source of light and can describe ways to protect their eyes and skin from harmful UV rays. L3 - Children know that shadows are formed when an opaque object blocks a light source. Children can identify opaque, translucent and transparent materials. L4 - Children can identify and group materials as opaque, translucent or transparent.	L1 - Children can explain that darkness is the absence of light and compare different light sources according to their brightness and purpose. Children can explain why light is essential for seeing. L2 - Children can explain why the Sun can be harmful and justify how different methods of protection reduce the risk of damage. Children can collect and interpret simple data linked to light intensity.

	L5 - Children can observe that the size of a shadow changes when the distance between the light source and the object changes. L6 - Children know that light is reflected from surfaces into our eyes so that we can see objects.	L3 - Children can explain how shadows are formed using scientific vocabulary and predict which materials will produce the clearest shadows by referring to their properties. L4 - Children can classify materials according to how much light they allow to pass through and explain how this affects shadow formation. L5 - Children can explain the relationship between the position of the light source and the size of a shadow. Children can carry out a fair test and use evidence to explain the patterns they observe. L6 - Children can compare how different materials reflect light and explain why some surfaces appear brighter than others using scientific vocabulary.
Vocabulary	Light, dark, light source, Sun, shadow, opaque, transparent, translucent, reflect, surface, protect, UV, natural, artificial	Y3+ Reflection, absorb, brightness, fair test, variable, evidence, prediction, conclusion, observation, investigation, compare, classify
Experiences	Investigate which materials create the best shadows. Explore how shadows change size using torches and different distances. Carry out a reflective materials investigation using mirrors and different surfaces. Measure light levels indoors and outdoors using a lux meter or digital device.	
SMSC	Social – Working collaboratively to investigate light and shadows through practical enquiry. Moral – Understanding the importance of protecting our eyes and skin from harmful sunlight.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We enjoy a challenge – Explaining how light behaves using evidence from investigations. We are safe – Understanding how to stay safe in sunlight and when using light sources. We show respect – Respecting equipment and listening to others' ideas during investigations. We are ready and fit for our future – Developing enquiry, measurement and reasoning skills through scientific investigations. We are happy – Enjoying practical investigations that explore light and shadows. We celebrate diversity – Appreciating the variety of plants, trees, habitats and seasonal changes found in our local area and around the world.	

Spring 2		
LKS2	Plants	
	Year 3	Year 4
	L1 – What are plants? L2 – How is water transported through plants? L3 – Why do some plants have flowers?	L1 – What are plants? L2 – How is water transported through plants? L3 – Why do some plants have flowers?

	L4 – How are seeds dispersed? L5 – What is the life cycle of a plant?	L4 – How are seeds dispersed? L5 – What is the life cycle of a plant?
Key Concepts to assess	L1 – Children can identify and describe the functions of the roots, stem, leaves and flowers of a flowering plant. L2 – Children know that roots absorb water and nutrients and the stem transports them around the plant. L3 – Children know that some plants have flowers which help them reproduce. Children can identify the stamen, stigma and ovary. L4 – Children can identify different methods of seed dispersal and group seeds according to how they are dispersed. L5 – Children can describe the stages of a plant's life cycle, including germination, growth, flowering and seed production.	L1 – Children can explain how each part of a flowering plant helps it survive and grow, including the role of photosynthesis. L2 – Children can explain the processes of transpiration and water transport through a plant and use observations to support explanations. L3 – Children can explain the process of pollination and describe how seeds develop following fertilisation. L4 – Children can compare different methods of seed dispersal and explain why plants have adapted different strategies. L5 – Children can explain the complete life cycle of a flowering plant and evaluate how environmental and human factors affect plant growth and reproduction.
Vocabulary	plant, roots, stem, trunk, leaves, flower, water, nutrients, sunlight, photosynthesis, transpiration, pollination, pollen, stamen, stigma, ovary, seed, germination, life cycle, disperse	Y3+ reproduction, fertilisation, adaptation, water transport, vascular, chlorophyll, seed dispersal, nutrients, environment, survival
Experiences	Dissect a flowering plant to identify and label its parts. Investigate how coloured water travels through a plant stem. Observe flowers closely to identify the stamen, stigma and ovary. Compare a variety of seeds and investigate different methods of seed dispersal. Carry out a seed germination investigation, changing one variable. Create and label a diagram showing the complete life cycle of a flowering plant.	
SMSC	Social – Working collaboratively to investigate plant growth, seed dispersal and life cycles through practical enquiry. Moral – Understanding the importance of protecting plants and habitats and recognising how human actions can affect plant survival. Spiritual – Developing awe and wonder at the complexity of plant life cycles and the processes that sustain life on Earth. Cultural – Exploring how plants provide food, medicine, clothing and materials in different cultures and communities around the world.	
British Values	Individual Liberty – Asking scientific questions, planning investigations and using evidence to explain plant growth and reproduction. Mutual Respect – Respecting the ideas and observations of others during practical investigations and discussions. Rule of Law – Following agreed rules for using scientific equipment safely and caring for living plants during investigations.	
School Values	We are happy – Enjoying exploring plants through practical investigations and outdoor learning. We are safe – Handling equipment responsibly and caring for living plants during investigations. We enjoy a challenge – Explaining complex plant processes using scientific evidence and observations. We celebrate diversity – Appreciating the enormous variety of plants and the different ways they have adapted to survive in environments around the world. We show respect – Respecting living things, the natural environment and the ideas of others during scientific enquiry. We are ready and fit for our future – Developing scientific enquiry, observation and analytical skills that prepare us for future learning and environmental responsibility.	

LKS2	Forces and Magnets	
	Year 3	Year 4
	L1 – How do forces act on objects? L2A – How does friction affect an object's movement? L2B – How does friction affect an object's movement? L3 – What is a magnet? L4 – Are all materials magnetic? L5 – How can you make an object magnetic?	L1 – How do forces act on objects? L2A – How does friction affect an object's movement? L2B – How does friction affect an object's movement? L3 – What is a magnet? L4 – Are all materials magnetic? L5 – How can you make an object magnetic?
Key Concepts to assess	L1 - Children know that a force is a push, pull or twist. Children can identify examples of forces acting on everyday objects. L2A - Children know that friction is a contact force and can describe how different surfaces affect the movement of an object. L2B - Children can carry out a simple investigation to compare movement on different surfaces. L3 - Children know that magnets have two poles and can identify that opposite poles attract while like poles repel. L4 - Children can identify and group materials that are magnetic and non-magnetic. L5 - Children know that magnets attract some metals but not all materials. Children can observe how magnets affect different objects.	L1 - Children can explain how forces act on objects and predict how different forces will affect movement using scientific vocabulary. L2A - Children can compare how friction acts on different surfaces and explain why some surfaces create more friction than others using evidence from investigations. L2B - Children can plan and carry out a comparative investigation into friction, record results accurately and use evidence to explain patterns in their findings. L3 - Children can explain how magnetic forces act at a distance and predict whether magnets will attract or repel by identifying their poles. L4 - Children can classify materials according to their magnetic properties and justify their decisions using evidence from investigations. L5 - Children can investigate induced magnetism and explain how magnets can temporarily magnetise some objects. Children can use scientific evidence to explain their findings.
Vocabulary	Force, push, pull, twist, friction, surface, magnet, magnetic, non-magnetic, pole, attract, repel	Y3+ Contact force, magnetic force, magnetic field, induced magnetism, investigation, prediction, evidence, variable, fair test, compare, classify, conclusion
Experiences	Investigate how different surfaces affect the movement of a toy car. Carry out a magnetic materials investigation around the classroom. Explore attracting and repelling magnets through practical challenges. Design and test a simple magnetic game or maze.	
SMSC	Social – Working collaboratively to investigate forces and solve scientific problems. Moral – Understanding how scientific discoveries improve technology and everyday life.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We celebrate diversity – Appreciating the wide variety of plants and recognising how different plants thrive in different environments. We enjoy a challenge – Investigating forces and explaining results using scientific evidence. We show respect – Respecting equipment and listening to others' ideas during practical investigations. We are ready and fit for our future – Developing enquiry, problem-solving and investigative skills. We are happy – Enjoying practical science through exploration and investigation.	

	We are safe – Using magnets and scientific equipment safely during investigations.
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Autumn 1		
UKS2	Living Things and Their Habitats	
	Year 5	Year 6
	L1 – How are animal life cycles different? L2 – How are eggs in different animals fertilised? L3A – How do plants reproduce? L3B – How do plants reproduce?	L1 – How are animal life cycles different? L2 – How are eggs in different animals fertilised? L3A – How do plants reproduce? L3B – How do plants reproduce?
Key Concepts to assess	L1 - Children can describe the life cycles of mammals, amphibians, insects and birds and identify similarities and differences between them. L2 - Children know that animals reproduce sexually and can identify animals that reproduce by laying eggs or giving birth to live young. L3A - Children know that flowering plants reproduce through pollination and can identify the difference between sexual and asexual reproduction in plants. L3B - Children can identify different methods of asexual reproduction in plants, including bulbs, runners and tubers.	L1 - Children can compare and explain the life cycles of different groups of animals, explaining how adaptations and metamorphosis support survival. L2 - Children can explain the difference between internal and external fertilisation and compare reproductive strategies across different animal groups. L3A - Children can explain the processes of pollination, fertilisation and seed formation and compare sexual and asexual reproduction in plants. L3B - Children can explain the advantages and disadvantages of sexual and asexual reproduction and evaluate which methods are most successful in different environments.
Vocabulary	Life cycle, reproduce, reproduction, mammal, amphibian, insect, bird, metamorphosis, offspring, fertilisation, pollination, seed, bulb, tuber, runner, sexual reproduction, asexual reproduction	Y5+ Internal fertilisation, external fertilisation, pollen, stigma, anther, ovule, embryo, germination, adaptation, survival, variation, inheritance, compare, evaluate
Experiences	Observe and compare the life cycles of different animals using videos, models or live specimens. Dissect or investigate flowers to identify the reproductive parts involved in pollination. Grow plants from bulbs, runners or cuttings to investigate asexual reproduction. Create and compare life cycle diagrams for different animal groups.	
SMSC	Social – Working collaboratively to investigate how living things reproduce and grow. Moral – Appreciating the importance of protecting living things and biodiversity throughout their life cycles. Spiritual – Appreciating the diversity, complexity and interconnectedness of living organisms. Cultural – Exploring biodiversity in different ecosystems around the world.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We enjoy a challenge – Explaining and comparing complex life cycles and reproductive processes.	

	We show respect – Respecting living things during practical investigations. We celebrate diversity – Appreciating the diversity of plants and animals and the different ways they reproduce. We are ready and fit for our future – Developing scientific enquiry and reasoning skills to understand the natural world. We are happy – Enjoying practical investigations and observing living things over time. We are safe – Handling living specimens and scientific equipment carefully and responsibly.
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Autumn 2		
Animals Including Humans		
UKS2	Year 5	Year 6
	L1A – How do humans change as they develop into old age? L1B – How do humans change as they develop into old age? Optional Session – What is puberty? L2 – How are the gestation periods of mammals different?	L1A – How do humans change as they develop into old age? L1B – How do humans change as they develop into old age? Optional Session – What is puberty? L2 – How are the gestation periods of mammals different?
Key Concepts to assess	L1A - Children can identify the stages of the human life cycle from infancy to old age and describe the physical and emotional changes that occur during each stage. L1B - Children can describe how the human body changes during adulthood and old age. Optional - Children know that puberty is the stage of development when a child's body begins to mature into an adult body. Children can identify the main physical and emotional changes that occur during puberty. L2 - Children know that gestation is the period during which a young animal develops before birth. Children can compare the gestation periods of different mammals.	L1A - Children can explain how humans develop throughout the life cycle, describing the physical, emotional and social changes that occur from birth to old age and explaining how these changes affect people's lives. L1B - Children can compare the physical changes that occur throughout adulthood and old age and explain how lifestyle choices can influence health and wellbeing. Optional - Children can explain why puberty occurs, describe the hormonal changes that take place and explain how these changes prepare the body for adulthood and reproduction. L2 - Children can explain why gestation periods vary between mammals and evaluate how gestation, parental care and environmental adaptations improve the survival of offspring.
Vocabulary	Life cycle, infancy, childhood, adolescence, adulthood, old age, puberty, gestation, mammal, offspring, development, reproduction, physical changes, emotional changes	Y5+ Hormones, reproduction, fertilisation, embryo, foetus, gestation period, adaptation, maturity, adolescence, lifespan, evaluate, evidence
Experiences	Create a timeline showing the stages of the human life cycle. Compare gestation periods of different mammals using data and graphs. Investigate how lifestyle choices influence health throughout adulthood. Research and present how different mammals care for their young after birth.	
SMSC	Social – Working collaboratively to explore human development and respecting different life experiences. Moral – Understanding the importance of making healthy choices and respecting the dignity of people at every stage of life.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	

School Values	We are happy – Understanding how healthy relationships and positive lifestyle choices contribute to wellbeing. We are safe – Learning about physical and emotional changes in a respectful, age-appropriate way. We enjoy a challenge – Explaining how humans develop and comparing life cycles using scientific evidence. We show respect – Respecting differences in growth, development and family experiences. We celebrate diversity – Recognising that people develop differently and that diversity should be valued and respected. We are ready and fit for our future – Developing knowledge that prepares children for adolescence and healthy adulthood.
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Spring 1		
UKS2	Earth and Space	
	Year 5	Year 6
	L1 – What is our Solar System like? L2 – Is the Earth flat? L3 – How does the Earth's movement affect us? L4 – What is the Moon like and how does it travel around the Earth? L5 – What was 'A Giant Leap for Mankind'? L6 – Did humans really land on the Moon? L7 - L7 – How important is space exploration?	L1 – What is our Solar System like? L2 – Is the Earth flat? L3 – How does the Earth's movement affect us? L4 – What is the Moon like and how does it travel around the Earth? L5 – What was 'A Giant Leap for Mankind'? L6 – Did humans really land on the Moon? L7 - L7 – How important is space exploration?
Key Concepts to assess	L1 - Children can identify the Sun as a star and name the eight planets in the Solar System in the correct order. Children know that the planets orbit the Sun. L2 - Children know that the Earth, Moon and Sun are approximately spherical bodies. L3 - Children know that the Earth rotates on its axis approximately once every 24 hours, causing day and night. L4 - Children know that the Moon orbits the Earth approximately every 28 days and can identify the phases of the Moon. L5 - Children know that the Moon landing was a significant event in the history of space exploration. L6 - Children can use evidence from different sources to answer scientific questions about the Moon landing. L7 - Children know that space exploration has increased our understanding of the Solar System and beyond.	L1 - Children can explain the structure of the Solar System, describing how planets orbit the Sun in elliptical paths and comparing the characteristics of different planets. L2 - Children can explain how scientific understanding of the Earth's shape has changed over time, using evidence from historical and modern scientific discoveries. L3 - Children can explain how the Earth's rotation and orbit influence day, night and the apparent movement of the Sun across the sky. Children can distinguish between rotation and orbit. L4 - Children can explain why the Moon appears to change shape by describing the relative positions of the Earth, Moon and Sun. Children can explain lunar and solar eclipses using scientific vocabulary. L5 - Children can explain why the Moon landing was a significant scientific achievement and evaluate the impact of space exploration on scientific knowledge and technological development. L6 - Children can evaluate the reliability of different sources, distinguishing between scientific evidence, opinion and conspiracy theories to justify their conclusions. L7 - Children can explain how developments in space exploration have improved scientific understanding and everyday life, using evidence to justify their opinions.
Vocabulary	Solar System, Sun, star, planet, orbit, Earth, Moon, rotation, axis, day, night, phase, spherical, eclipse, astronaut, space exploration	Y5+ Ellipse, gravity, celestial body, lunar eclipse, solar eclipse, evidence, reliability, scientific theory, observation, technology, satellite, justification

Experiences	Build a scaled model of the Solar System. Investigate how the Earth's rotation causes day and night using globes and torches. Model the phases of the Moon using a light source and spherical objects. Research the Moon landings and evaluate the reliability of different historical and scientific sources.
SMSC	Social – Working collaboratively to investigate scientific ideas and discuss how knowledge about space has developed over time. Moral – Appreciating how scientific discoveries benefit society and considering the ethical responsibilities of space exploration. Spiritual – Developing awe and wonder at the scale and beauty of the universe and humanity's place within it.
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.
School Values	We enjoy a challenge – Explaining complex scientific concepts using evidence and reasoning. We show respect – Respecting the work of scientists and listening thoughtfully to different viewpoints. We celebrate diversity – Recognising the contributions of scientists and astronauts from different countries and backgrounds. We are ready and fit for our future – Developing enquiry, critical thinking and evaluation skills needed for future scientific learning. We are happy – Developing curiosity about the universe through practical investigations and research. We are safe – Using equipment safely during practical modelling activities and researching information responsibly.

Spring 2		
UKS2	Forces	
	Year 5	Year 6
	L1A – How can forces affect objects? L1B – How can forces affect objects? L2A – What would happen without gravity? L2B – What would happen without gravity? L3A – How can friction be reduced and increased? L3B – How can friction be reduced and increased? L4A – How does air resistance affect movement? L4B – How does air resistance affect movement? L5 – How does water resistance affect movement? L6 – Feel the Force: What would life be like without them?	L1A – How can forces affect objects? L1B – How can forces affect objects? L2A – What would happen without gravity? L2B – What would happen without gravity? L3A – How can friction be reduced and increased? L3B – How can friction be reduced and increased? L4A – How does air resistance affect movement? L4B – How does air resistance affect movement? L5 – How does water resistance affect movement? L6 – Feel the Force: What would life be like without them?
Key Concepts to assess	L1A - Children know that forces are pushes, pulls and twists. Children can identify simple machines including levers, pulleys and gears and describe how they make work easier.	L1A - Children can explain how levers, pulleys and gears transfer and multiply forces. Children can compare how different simple machines make work easier in different situations.

	L1B - Children can identify that simple machines allow a smaller force to have a greater effect. L2A - Children know that gravity is a pulling force that attracts objects towards the Earth. L2B - Children know that mass remains constant but weight changes depending on gravitational force. L3A - Children know that friction is a contact force that slows movement between surfaces. Children can identify ways to increase or reduce friction. L3B - Children can carry out a fair test to investigate friction and record observations accurately. L4A - Children know that air resistance is a force acting against moving objects. L4B - Children can investigate how different shapes affect air resistance. L5 - Children know that water resistance is a force that slows objects moving through water. L6 - Children can identify examples of gravity, friction, air resistance and water resistance in everyday life.	L1B - Children can explain how mechanical advantage is created by simple machines and justify which machine would be most effective for different tasks. L2A - Children can explain how gravity acts between objects with mass and compare the effects of gravity on Earth with gravity on other celestial bodies. L2B - Children can explain the difference between mass and weight and apply this understanding to predict how weight would change on different planets. L3A - Children can explain how surface texture and materials affect friction and justify how friction can be controlled for different purposes using evidence from investigations. L3B - Children can plan, carry out and evaluate a comparative investigation into friction, identifying variables, analysing results and explaining patterns using scientific evidence. L4A - Children can explain how air resistance is created by collisions with air particles and predict how changing the shape or surface area of an object affects movement. L4B - Children can evaluate the results of an investigation into air resistance, identifying trends and using evidence to explain their conclusions. L5 - Children can explain how surface area affects water resistance and apply this knowledge to explain why different objects move through water at different speeds. L6 - Children can explain how different forces work together in everyday situations and evaluate why understanding forces is important in engineering, transport and sport.
Vocabulary	Force, push, pull, twist, gravity, mass, weight, friction, air resistance, water resistance, lever, pulley, gear, machine, fulcrum	Y5+ Mechanical advantage, Newton, gravitational force, contact force, non-contact force, surface area, variable, fair test, evidence, evaluate, analyse, conclusion
Experiences	Investigate how different levers, pulleys and gears reduce the effort needed to complete a task. Carry out a friction investigation using different surfaces and measure the force required to move an object. Design and test parachutes to investigate the effect of air resistance. Investigate how different shapes move through water to explore water resistance.	
SMSC	Social – Working collaboratively to plan, carry out and evaluate investigations into forces. Moral – Understanding how scientific knowledge of forces has improved safety, transport and engineering. Spiritual – Appreciating the invisible forces that influence everyday life. Cultural – Exploring how scientists from different countries have contributed to our understanding of forces.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We enjoy a challenge – Solving scientific problems using evidence from investigations. We show respect – Respecting equipment, following safety procedures and valuing others' ideas. We are ready and fit for our future – Developing enquiry, analytical thinking and problem-solving skills that prepare us for future scientific learning.	

	We are happy – Enjoying practical investigations and applying scientific ideas to real-life contexts. We are safe – Using scientific equipment responsibly and understanding how forces contribute to safety in everyday life. We celebrate diversity – Recognising the contributions of scientists and engineers from different backgrounds whose work has advanced our understanding of forces.
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Summer		
UKS2	Properties and Changes of Materials	
	Year 5	Year 6
	L1A – How can we compare materials? L1B – How can we compare materials? L1C – How can we compare materials? L1D – How can we compare materials? L2A – What are reversible and irreversible changes? L2B – What are reversible and irreversible changes? L3 – What is dissolving? L4A – How do we separate mixtures? L4B – How do we separate mixtures? L4C – How do we separate mixtures? L4D – How do we separate mixtures?	L1A – How can we compare materials? L1B – How can we compare materials? L1C – How can we compare materials? L1D – How can we compare materials? L2A – What are reversible and irreversible changes? L2B – What are reversible and irreversible changes? L3 – What is dissolving? L4A – How do we separate mixtures? L4B – How do we separate mixtures? L4C – How do we separate mixtures? L4D – How do we separate mixtures?
Key Concepts to assess	L1A - Children can compare and group materials according to their observable properties, including hardness, transparency, magnetism, conductivity and solubility. L1B - Children can investigate the properties of different materials using appropriate equipment and record their observations accurately. L1C - Children can identify materials that are magnetic, transparent or good conductors of heat and electricity. L1D - Children can classify materials using more than one property. L2A - Children know that some changes are reversible and others are irreversible. Children can identify examples of each. L2B - Children know that irreversible changes often produce new materials. L3 - Children know that dissolving forms a solution and can identify materials that dissolve in water. L4A - Children can identify suitable methods to separate simple mixtures, including sieving, filtering and evaporation. L4B - Children can carry out investigations to separate mixtures safely using appropriate equipment. L4C - Children can record observations accurately during investigations. L4D - Children can explain why different mixtures require different separation methods.	L1A - Children can explain how a material's properties determine its suitability for specific purposes and justify their choices using scientific evidence. L1B - Children can plan and carry out comparative investigations independently, selecting appropriate equipment and evaluating the reliability of their results. L1C - Children can compare materials using multiple properties and explain how combinations of properties influence their everyday uses. L1D - Children can justify classifications using scientific vocabulary and explain why some materials are better suited to particular purposes than others. L2A - Children can explain the difference between physical and chemical changes and justify whether a change is reversible or irreversible using scientific evidence. L2B - Children can explain how chemical reactions create new materials and identify evidence that a chemical change has occurred. L3 - Children can explain the process of dissolving using scientific vocabulary and describe how dissolved materials can be recovered. L4A - Children can justify the most appropriate method of separating mixtures by referring to the physical properties of the materials involved. L4B - Children can select and evaluate the most effective separation technique, explaining how evidence supports their conclusions. L4C - Children can present results using appropriate scientific tables, graphs and diagrams and explain patterns within the data.

		L4D - Children can evaluate the effectiveness of different separation methods and suggest improvements to investigations using scientific reasoning.
Vocabulary	Material, property, hardness, transparency, magnetism, conductivity, soluble, insoluble, dissolve, solution, mixture, filter, sieve, evaporate, reversible change, irreversible change	Y5+ Chemical reaction, physical change, thermal conductivity, electrical conductivity, variable, reliability, validity, evidence, conclusion, analyse, evaluate, precipitate, crystallisation
Experiences	Investigate and compare the properties of a range of everyday materials. Carry out practical investigations into reversible and irreversible changes, including dissolving, burning and mixing substances. Separate different mixtures using sieving, filtering, evaporation and magnetic separation. Design and carry out an investigation to identify the most suitable material for a real-life purpose, justifying conclusions with evidence.	
SMSC	Social – Working collaboratively to plan, carry out and evaluate scientific investigations. Moral – Understanding how scientific knowledge of materials contributes to innovation, sustainability and responsible use of resources.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We enjoy a challenge – Solving scientific problems through investigation and evidence-based reasoning. We show respect – Respecting equipment, following safe laboratory practices and valuing others' scientific ideas. We are ready and fit for our future – Developing enquiry, analytical thinking and practical skills needed for secondary science. We celebrate diversity – Recognising that different materials have different properties and appreciating the contributions of scientists from around the world. We are happy – Enjoying practical investigations and discovering how science improves everyday life. We are safe – Using equipment and materials responsibly and understanding safe working practices	



Medium Term

Cycle B

Autumn 1		
KS1	Uses of Everyday Materials	
	Year 1	Year 2
	L1 – What materials are objects made from? What are their properties? L2 – Why are certain objects made from different materials? L3A – What is the most suitable material for a drinking straw? L3B – What is the most suitable material for a drinking straw? L4 – How can we change the shapes of objects? L5 – What happens to the size of objects when we change their shape?	L1 – What materials are objects made from? What are their properties? L2 – Why are certain objects made from different materials? L3A – What is the most suitable material for a drinking straw? L3B – What is the most suitable material for a drinking straw? L4 – How can we change the shapes of objects? L5 – What happens to the size of objects when we change their shape?
Key Concepts to assess	L1 - Children can identify and name everyday materials including wood, plastic, glass, metal, rock, paper, cardboard and brick. Children can identify simple properties of materials. L2 - Children can identify suitable materials for everyday objects. L3A - Children can carry out a simple comparative test with support. Children can identify which material works best. L3B - Children can observe and record the results of a simple investigation. L4 - Children know that some materials can be bent, stretched, squashed or twisted. L5 - Children can observe how materials change when they are bent, stretched, twisted or squashed.	L2 - Children can identify, compare and classify everyday materials according to their observable properties. Children can explain how the properties of materials help us to identify and group them. L2 - Children can explain why particular materials are suitable for different objects by referring to their properties. L3A - Children can carry out a comparative test independently, record observations and explain which material is most suitable using evidence from their investigation. L3B - Children can record results using simple tables or labelled diagrams and explain what their findings show. L4 - Children can identify which materials can be bent, stretched, squashed or twisted and explain why different materials change shape in different ways L5 - Children can compare how different materials change shape and explain patterns in their observations using scientific vocabulary.
Vocabulary	Object, material, wood, plastic, glass, metal, rock, paper, cardboard, brick, hard, soft, rough, smooth, bend, squash, stretch, twist	Y1+ Properties, compare, classify, investigate, observe, evidence, results, conclusion, suitable, flexible, scientific thinking, recording
Experiences	Materials hunt around school. Investigate the best material for a drinking straw. Explore how different materials bend, twist, squash and stretch. Sort everyday objects by their material and properties.	
SMSC	Social – Working collaboratively to investigate and compare materials. Moral – Understanding why choosing suitable materials helps reduce waste and improve products. Spiritual – Developing curiosity about how different materials have unique properties that make them suitable for different purposes. Cultural – Exploring how different materials are used in homes, buildings and objects around the world.	
British Values	Individual Liberty – Asking scientific questions, making predictions and investigating ideas independently. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	

School Values	We enjoy a challenge – Testing materials and solving scientific problems. We show respect – Respecting equipment and each other's ideas. We are ready and fit for our future – Developing enquiry and investigation skills. We are happy – Enjoying investigating and discovering which materials are best suited for different purposes. We are safe – Using scientific equipment and materials safely during investigations.
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Autumn 2		
Uses of Materials		
KS1	Year 1	Year 2
	L1A – Which materials are most suitable? L1B – Which materials are most suitable?	L1A – Which materials are most suitable? L1B – Which materials are most suitable?
Key Concepts to assess	L1A - Children can identify simple properties of materials and match them to suitable everyday uses. L1B - Children can carry out a simple comparative investigation with support and make observations.	L1A - Children can explain how the properties of materials make them suitable for particular purposes. L1B - Children can carry out a comparative investigation independently, record findings accurately and explain how their results answer the scientific question.
Vocabulary	Material, object, wood, plastic, glass, metal, paper, cardboard, rock, waterproof, absorbent, hard, soft, rough, smooth	Y1+ Properties, suitable, compare, investigate, observe, evidence, results, conclusion, scientific vocabulary, scientific thinking, recording
Experiences	Materials investigation around the classroom. Test which materials are best for different jobs. Compare materials using simple scientific equipment. Design an object using the most suitable material.	
SMSC	Social – Working together to investigate and discuss the best materials for different purposes. Moral – Understanding how choosing appropriate materials can help people and reduce waste. Spiritual – Developing curiosity about how different materials have unique properties that make them suitable for different purposes. Cultural – Exploring how different materials are used in homes, buildings and objects around the world.	
British Values	Individual Liberty – Asking scientific questions, making predictions and investigating ideas independently. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We enjoy a challenge – Explaining why some materials are more suitable than others. We show respect – Respecting resources and listening to the ideas of others. We are ready and fit for our future – Developing scientific reasoning and enquiry skills. We celebrate diversity – Recognising that different materials have different properties and uses.	

Spring 1		
KS1	Animals Including Humans	
	Year 1	Year 2
	L1A – What is a life cycle? L1B – What is a life cycle? L2 – What do animals need to survive? L3A – How can I live healthily? (Keeping Clean) L3B – How can I live healthily? (Exercise) L3C – How can I live healthily? (Healthy Eating)	L1A – What is a life cycle? L1B – What is a life cycle? L2 – What do animals need to survive? L3A – How can I live healthily? (Keeping Clean) L3B – How can I live healthily? (Exercise) L3C – How can I live healthily? (Healthy Eating)
Key Concepts to assess	L1A - Children know that animals have offspring which grow into adults. Children can identify animals that hatch from eggs and animals that are born alive. L1B - Children know that some young animals look different from their adult forms. Children can identify simple stages in a life cycle. L2 - Children know that all animals need food, water and air to survive. L3A - Children know why keeping clean is important. Children can describe simple ways to keep themselves clean. L3B - Children know that exercise helps to keep us healthy. L3C - Children know that eating different foods helps us to stay healthy. Children can identify some foods that are healthy.	L1A - Children know that animals have offspring which grow into adults. Children can compare the life cycles of different animals and explain the difference between animals that hatch from eggs and those that give birth to live young. L1B - Children can explain that some animals undergo a life cycle where the young change significantly before becoming adults (e.g. tadpole to frog, caterpillar to butterfly). Children can compare different animal life cycles. L2 - Children can explain why animals need food, water and air to survive and describe what happens if these basic needs are not met. L3A - Children can explain how germs spread and why good hygiene helps to keep people healthy. Children can explain how simple hygiene routines reduce the spread of illness. L3B - Children can explain how exercise strengthens muscles, bones and the heart and why regular physical activity is important for a healthy lifestyle. L3C - Children can explain why we need a balanced diet and describe the different food groups needed to keep our bodies healthy. Children can explain why healthy eating, exercise and hygiene work together to keep us healthy.
Vocabulary	Life cycle, offspring, adult, egg, baby, food, water, air, healthy, exercise, clean, germs, fruit, vegetables, balanced diet	Y1+ Metamorphosis, hatch, survive, hygiene, bacteria, virus, balanced diet, nutrients, muscles, heart, compare, explain, scientific thinking, recording
Experiences	Observe the life cycle of a butterfly or frog using videos or class resources. Carry out a handwashing investigation using glitter or UV gel to explore how germs spread.	

	Plan and make a healthy lunchbox using the Eatwell Guide. Take part in a simple exercise investigation, measuring how exercise changes breathing or heart rate.
SMSC	Social – Working collaboratively to investigate healthy lifestyles and discuss how to care for ourselves and others. Moral – Understanding that making healthy choices helps us to look after ourselves and those around us.
British Values	Individual Liberty – Making informed choices about healthy eating, exercise and personal hygiene. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.
School Values	We are happy – Understanding how healthy choices help us feel our best. We are safe – Learning how hygiene helps prevent the spread of illness. We enjoy a challenge – Explaining life cycles and making links between healthy habits and wellbeing. We show respect – Respecting our own bodies and encouraging healthy choices for everyone. We are ready and fit for our future – Developing lifelong habits that support healthy, active lifestyles. We celebrate diversity – Appreciating that all living things grow, change and develop in different ways.

Summer 1		
KS1	Plants	
	Year 1	Year 2
	L1 – What does a plant need to grow? L2 – What happens to a plant if it doesn't get what it needs? L3 – What happens when a seed germinates? L4 – What are seeds and bulbs?	L1 – What does a plant need to grow? L2 – What happens to a plant if it doesn't get what it needs? L3 – What happens when a seed germinates? L4 – What are seeds and bulbs?
Key Concepts to assess	L1 - Children know that plants need water, sunlight and warmth to grow. Children can identify the basic needs of a healthy plant. L2 - Children can observe and describe simple changes in plants when they do not have everything they need. L4 - Children can identify seeds and bulbs and know that they grow into mature plants. L3 - Children know that seeds grow into plants. Children can identify that seeds need water to begin growing. L4 - Children can identify seeds and bulbs and know that they grow into mature plants.	L1 - Children can explain that plants need water, sunlight, nutrients and a suitable temperature to grow healthily. Children can explain why each condition is important for plant growth. L2 - Children can carry out a simple comparative investigation and explain how changing one condition affects plant growth using observations and evidence. L3 - Children can explain what happens during germination and describe the conditions needed for a seed to germinate. Children can explain that different seeds and bulbs may germinate and grow at different rates. L4 - Children can compare seeds and bulbs, explaining similarities and differences. Children can explain that seeds and bulbs require different conditions and may grow at different rates.
Vocabulary	Plant, seed, bulb, grow, roots, stem, leaves, flower, water, sunlight, warmth, healthy, germinate	Y1+ Nutrients, temperature, germination, observe, compare, measure, investigate, predict, evidence, scientific thinking, recording
Experiences	Plant seeds and bulbs and observe them growing over several weeks. Carry out an investigation to discover what plants need to grow (e.g. no water, no light or no warmth).	

	Measure and record plant growth using rulers and simple tables. Visit the school grounds to identify and compare different plants.
SMSC	Social – Working together to care for plants and carry out scientific investigations. Moral – Understanding the importance of caring for living things and protecting the natural environment. Spiritual – Appreciating the beauty, growth and life cycles of plants. Cultural – Exploring how plants are grown and used for food, medicine and traditions in different countries.
British Values	Individual Liberty – Asking scientific questions, making predictions and investigating ideas through first-hand enquiry. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.
School Values	We are happy – Enjoying learning outdoors and watching plants grow. We show respect – Caring for living plants and the natural environment. We enjoy a challenge – Making predictions and explaining the results of investigations. We celebrate diversity – Appreciating the wide variety of plants that grow in different environments. We are safe – Working safely outdoors and caring for living plants during investigations. We are ready and fit for our future – Developing scientific enquiry, observation and recording skills that prepare us for future learning.

Summer 2		
KS1	Living Things and Their Habitats	
	Year 1	Year 2
	L1 - Which things are dead, alive or have never been alive? L2 - L2 – What is a food chain? What would happen if part of a food chain is removed? L3 – What is a habitat? L4 – What different habitats do animals and plants live in? L5 – What is a microhabitat?	L1 - Which things are dead, alive or have never been alive? L2 - L2 – What is a food chain? What would happen if part of a food chain is removed? L3 – What is a habitat? L4 – What different habitats do animals and plants live in? L5 – What is a microhabitat?
Key Concepts to assess	L1 - Children can identify whether something is alive, dead or has never been alive. Children can identify simple characteristics of living things. L2 - Children know that a food chain begins with a plant. Children can identify simple food chains using plants and animals L3 - Children know that animals and plants live in habitats that provide what they need to survive. Children can identify some things found within a habitat. L4 - Children can identify and name a variety of habitats, including woodland, gardens and ponds. L5 - Children know that a microhabitat is a small habitat where living things can survive. Children can identify examples of simple microhabitats.	L1 - Children can identify, classify and explain whether something is alive, dead or has never been alive. Children can justify their decisions using the characteristics of living things. L2 - Children can explain the order of a simple food chain using the terms producer , herbivore and carnivore . Children can explain what may happen if one part of a food chain is removed. L3 - Children can explain that habitats provide food, water, air and shelter for living things. Children can describe why different animals and plants are suited to different habitats. L4 - Children can compare different habitats and explain how the features of each habitat meet the needs of the plants and animals living there.

		L5 - Children can explain what a microhabitat is and describe how it provides suitable conditions for living things. Children can compare microhabitats within larger habitats.
Vocabulary	Living, dead, never been alive, habitat, microhabitat, plant, animal, food, water, air, shelter, woodland, pond, garden	Y1+ Food chain, producer, herbivore, carnivore, classify, compare, survive, environment, observe, evidence, scientific thinking, recording
Experiences	Habitat hunt around the school grounds. Build a simple food chain using pictures or models. Investigate a microhabitat (e.g. under logs, stones or in leaf litter). Carry out a minibeast survey and record findings.	
SMSC	Social – Working collaboratively to explore habitats and investigate living things. Moral – Understanding the importance of caring for habitats and protecting living things.	
British Values	Mutual Respect – Respecting living things, their habitats and the ideas of others during investigations. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We show respect – Caring for living things and protecting their habitats. We enjoy a challenge – Investigating habitats and explaining food chains using scientific evidence. We are ready and fit for our future – Developing enquiry, observation and classification skills. We celebrate diversity – Appreciating the variety of plants, animals and habitats found in our world. We are happy – Enjoying outdoor learning and discovering wildlife in our local environment.	

Autumn		
Animals Including Humans		
LKS2	Year 3	Year 4
	L1 – What are the different functions of teeth? L2 – Do all animals' teeth look the same? L3A – Why do we need to look after our teeth? L3B – How do we look after our teeth? L4A – What makes up the digestive system? L4B – How does the digestive system work? L5A – What makes a food chain? L5B – What happens when a food chain changes?	L1 – What are the different functions of teeth? L2 – Do all animals' teeth look the same? L3A – Why do we need to look after our teeth? L3B – How do we look after our teeth? L4A – What makes up the digestive system? L4B – How does the digestive system work? L5A – What makes a food chain? L5B – What happens when a food chain changes?
Key Concepts to assess	L1 - Children can identify and name the different types of teeth (incisors, canines and molars) and describe the simple function of each type.	L1 - Children can explain how the different types of teeth are adapted for different functions and compare human teeth with those of other animals

	L2 - Children can identify similarities and differences between the teeth of different animals and relate these to what the animals eat. L3A - Children know why good oral hygiene is important and can describe simple ways to care for their teeth. L3B - Children can ask questions and carry out simple observations to investigate how to keep teeth healthy. L4A - Children can identify and name the main parts of the digestive system: mouth, oesophagus, stomach, small intestine, large intestine and anus. L4B - Children know that food is broken down during digestion so that nutrients can be absorbed by the body. L5A - Children can construct and interpret a simple food chain and identify producers, predators and prey. L5B - Children know that living things depend on each other within a food chain.	L2 - Children can compare the teeth of carnivores, herbivores and omnivores and explain how tooth structure is linked to diet and survival. L3A - Children can explain how food, bacteria and plaque affect teeth and justify why regular brushing, flossing and healthy eating help to prevent tooth decay. L3B - Children can plan a simple enquiry, collect evidence and use their findings to explain how different factors affect dental health. L4A - Children can explain the function of each part of the digestive system and describe how food travels through the body. L4B - Children can explain the digestion process in sequence, describing how nutrients are absorbed and waste is removed from the body. L5A - Children can explain how energy is transferred through a food chain and describe the role of the Sun as the original source of energy. L5B - Children can explain how changes to habitats or populations affect food chains and predict the impact of these changes on living things.
Vocabulary	Incisors, canines, molars, tooth, enamel, gums, oral hygiene, digestive system, mouth, oesophagus, stomach, small intestine, large intestine, anus, food chain, producer, predator, prey	Y3+ Digestion, nutrients, saliva, plaque, bacteria, decay, absorb, energy transfer, consumer, organism, classify, compare, evidence, scientific enquiry
Experiences	Compare the teeth of different animals using photographs, skulls or models. Investigate the effects of different drinks on eggshells as a model for tooth enamel. Build a working model of the digestive system using everyday materials. Construct and investigate food chains using living things from different habitats.	
SMSC	Social – Working collaboratively to investigate healthy lifestyles and the relationships between living things. Moral – Understanding the importance of caring for our bodies and protecting the balance of natural ecosystems. Spiritual – Appreciating the complexity of the human body and how bones and muscles enable movement. Cultural – Exploring how exercise, nutrition and healthy lifestyles vary across cultures.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We are happy – Understanding how healthy choices help us to feel our best. We are safe – Learning how good oral hygiene and healthy eating protect our bodies. We enjoy a challenge – Explaining digestion and food chains using scientific evidence. We show respect – Respecting our bodies, living things and the environment. We are ready and fit for our future – Developing scientific enquiry, observation and reasoning skills that support future learning.	

Spring 1		
LKS2	States of Matter	
	Year 3	Year 4
	L1A – What's the matter? L1B – What's the matter? L2A – How can substances change state? L2B – How can substances change state? L3 – How does water go around in circles?	L1A – What's the matter? L1B – What's the matter? L2A – How can substances change state? L2B – How can substances change state? L3 – How does water go around in circles?
Key Concepts to assess	L1A - Children can identify and describe the properties of solids, liquids and gases. Children can group materials according to their state. L1B - Children know that solids, liquids and gases have different properties and can identify examples of each. L2A - Children know that some materials change state when they are heated or cooled. Children can identify melting and freezing. L2B - Children know that different materials melt and freeze at different temperatures. L3 - Children can describe the processes of evaporation and condensation and recognise their role in the water cycle.	L1A - Children can compare the properties of solids, liquids and gases and explain how the arrangement of particles gives each state its properties. L1B - Children can explain the particle model for solids, liquids and gases and recognise that some materials do not behave like typical solids or liquids (e.g. non-Newtonian substances). L2A - Children can explain how heating and cooling cause materials to change state and describe melting and freezing using the particle model. L2B - Children can compare the temperatures at which different materials change state and explain why accurate measurement is important during investigations. L3 - Children can explain the complete water cycle using scientific vocabulary and describe how temperature affects the rate of evaporation.
Vocabulary	Solid, liquid, gas, material, melt, melting, freeze, freezing, evaporate, evaporation, condense, condensation, water cycle, temperature	Y3+ Particles, particle model, state change, boiling point, melting point, condensation, evaporation, water vapour, precipitation, non-Newtonian substance, investigate, evidence
Experiences	Sort and classify everyday materials as solids, liquids or gases. Investigate how heating and cooling changes the state of different materials (e.g. chocolate, butter or ice). Create a mini water cycle in a sealed bag or jar. Investigate how temperature affects the rate of evaporation.	
SMSC	Social – Working collaboratively to investigate changes in materials and explain scientific observations. Moral – Understanding the importance of water as a precious resource and why it should be used responsibly. Spiritual – Developing curiosity about invisible particles and the scientific processes that explain everyday changes. Cultural – Exploring how understanding changes of state supports industries and everyday life around the world.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We enjoy a challenge – Explaining changes of state using scientific evidence. We show respect – Respecting equipment and working safely during practical investigations. We are ready and fit for our future – Developing enquiry, observation and reasoning skills through scientific investigations. We are happy – Enjoying practical experiments that bring science to life.	

	We are safe – Handling hot water and scientific equipment safely and following investigation rules.
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Spring 2		
Electricity		
LKS2	Year 3	Year 4
	L1 – What are electrical appliances? L2 – How does a switch work? L3 – Which materials are conductors and which are insulators? L4 – How can I make a switch to open and close a circuit? L5 – How can I make a circuit?	L1 – What are electrical appliances? L2 – How does a switch work? L3 – Which materials are conductors and which are insulators? L4 – How can I make a switch to open and close a circuit? L5 – How can I make a circuit?
Key Concepts to assess	L1 - Children can identify and name appliances that use electricity and recognise whether they are powered by mains electricity or batteries. L2 - Children know that a complete electrical circuit is needed for a lamp or buzzer to work. Children can identify the basic parts of a simple series circuit. L3 - Children know that some materials allow electricity to pass through them while others do not. Children can identify common conductors and insulators. L4 - Children can construct a simple circuit containing a switch and observe what happens when the switch is opened and closed. L5 - Children can construct a simple series circuit using cells, wires, bulbs, buzzers and switches.	L1 - Children can classify electrical appliances according to how they are powered and explain why different appliances require different power sources L2 - Children can explain how a switch opens and closes a circuit and predict whether a component will work by examining the circuit. L3 - Children can classify materials as electrical conductors or insulators and explain why metals are generally good conductors using evidence from investigations. L4 - Children can design, build and test a simple switch, explaining how it controls the flow of electricity within a circuit. L5 - Children can construct and test a complete series circuit independently, identify faults and explain how to improve the circuit using scientific vocabulary.
Vocabulary	Electricity, electrical appliance, mains electricity, battery, cell, wire, bulb, buzzer, switch, circuit, complete circuit, conductor, insulator	Y3+ Series circuit, electrical current, component, terminal, conductor, insulator, predict, investigate, evidence, fair test, classify, evaluate
Experiences	Investigate which everyday appliances use mains electricity or batteries. Build a simple series circuit using bulbs, buzzers and switches. Test a range of materials to identify conductors and insulators. Design and make a working switch or simple electrical game.	
SMSC	Social – Working collaboratively to build, test and improve electrical circuits. Moral – Understanding the importance of using electricity safely and responsibly Spiritual – Appreciating the invisible forces that power modern life. Cultural – Exploring how access to electricity differs across countries and how scientific discoveries have transformed society.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	

School Values	We enjoy a challenge – Solving problems by building and improving electrical circuits. We are safe – Learning how to use electricity and electrical equipment safely. We show respect – Respecting equipment and supporting others during practical investigations. We are ready and fit for our future – Developing scientific enquiry, problem-solving and technological understanding. We are happy – Enjoying practical investigations that develop curiosity and creativity.
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Summer 1		
LKS2	Sound	
	Year 3	Year 4
	L1 – How are sounds made? L2A – How does sound travel? L2B – How does sound travel? L3 – How can we change volume? L4 – How can we change pitch?	L1 – How are sounds made? L2A – How does sound travel? L2B – How does sound travel? L3 – How can we change volume? L4 – How can we change pitch?
Key Concepts to assess	L1 - Children know that sound is a form of energy produced by vibrations. Children can identify that sounds are made when objects vibrate. L2A - Children know that sound travels through solids, liquids and gases to reach our ears. L2B - Children know that sounds become quieter as the distance from the sound source increases. L3 - Children know that stronger vibrations produce louder sounds and weaker vibrations produce quieter sounds. L4 - Children know that pitch describes how high or low a sound is.	L2 - Children can explain how vibrations produce sound and describe how vibrations travel through different materials to reach the ear. L2A - Children can explain that sound travels as vibrations through a medium and compare how sound travels through different materials using evidence from investigations. L2B - Children can explain the relationship between distance and volume using evidence collected during scientific investigations. L3 - Children can explain how the strength of vibrations affects volume and carry out a fair test to investigate this relationship. L4 - Children can explain how changing the vibration of an object affects pitch and identify patterns from investigations using scientific vocabulary.
Vocabulary	Sound, vibration, volume, pitch, loud, quiet, high, low, sound source, ear, travel, medium	Y3+ Energy, frequency, vibration, investigate, fair test, evidence, prediction, observation, pattern, conclusion, scientific enquiry
Experiences	Investigate how different objects produce sound through vibrations. Explore how sound changes over distance in the playground. Investigate how different instruments create louder, quieter, higher and lower sounds. Create and test simple string telephones to investigate how sound travels.	
SMSC	Social – Working collaboratively to investigate sound and communicate findings. Moral – Understanding the importance of protecting our hearing and using sound responsibly. Spiritual – Appreciating the beauty of sound, music and communication. Cultural – Exploring how sound and music are important in different cultures and traditions.	

British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.
School Values	We enjoy a challenge – Explaining how sound travels and interpreting investigation results. We are safe – Understanding how loud sounds can affect hearing and using equipment safely. We show respect – Respecting equipment and listening carefully to the ideas of others during investigations. We are ready and fit for our future – Developing scientific enquiry, measurement and reasoning skills through practical investigations. We are happy – Enjoying practical investigations and exploring how sound works in the world around us.

Summer 2		
LKS2	Living Things and Their Habitats	
	Year 3	Year 4
	L1 – How do we group living things? L2 – How does a classification key group living things? L3A – How do humans have a negative effect on habitats? L3B – How do humans have a negative effect on habitats? L4 – How do humans have a positive effect on habitats?	L1 – How do we group living things? L2 – How does a classification key group living things? L3A – How do humans have a negative effect on habitats? L3B – How do humans have a negative effect on habitats? L4 – How do humans have a positive effect on habitats?
Key Concepts to assess	L1 - Children can identify and group living things according to their observable features and characteristics. L2 - Children know that classification keys help us to identify living things. Children can use a simple classification key to identify plants and animals. L3A - Children know that environments can change and that some changes can be harmful to living things. Children can identify ways humans affect habitats. L3B - Children can identify simple actions that can help protect habitats and living things. L4 - Children know that habitats can change naturally and through human action. Children can describe simple ways people can improve habitats.	L1 - Children can classify living things using observable characteristics and explain why they belong to different groups using scientific vocabulary. L2 - Children can construct and use a branching classification key to identify and classify living things accurately, explaining the decisions they make. L3A - Children can explain how human activities, such as pollution, deforestation and oil spills, can negatively affect habitats and the survival of living things. L3B - Children can explain how conservation projects and sustainable choices help to protect habitats and biodiversity. Children can use evidence from research to support their explanations. L4 - Children can compare natural and human-made environmental changes and explain how positive human actions can restore and protect habitats for future generations.
Vocabulary	Living things, classify, classification, habitat, environment, characteristics, plants, animals, vertebrate, invertebrate, key, pollution, conservation	Y3+ Classification key, branching key, biodiversity, organism, species, habitat loss, deforestation, sustainability, environmental change, evidence, adaptation, scientific enquiry
Experiences	Carry out a habitat survey in the school grounds and classify the living things found. Use and create simple branching classification keys for plants or minibeasts. Investigate the impact of pollution on habitats through a practical model or case study.	

	Design a wildlife-friendly area or habitat improvement plan for the school grounds.
SMSC	Social – Working collaboratively to investigate local habitats and identify ways to protect wildlife. Moral – Understanding our responsibility to care for the environment and protect living things for future generations.
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.
School Values	We show respect – Respecting living things, their habitats and the natural environment. We celebrate diversity – Appreciating the rich variety of plants, animals and habitats found locally and globally. We enjoy a challenge – Using classification keys and scientific evidence to identify and group living things. We are ready and fit for our future – Developing scientific enquiry and environmental awareness that supports responsible citizenship. We are happy – Enjoying outdoor learning and discovering the wildlife around us.

Autumn		
UKS2	Animals Including Humans	
	Year 5	Year 6
	L1 – What is the circulatory system? L2 – How is blood transported in the circulatory system? L3 – What are the key components of blood and why are they important? L4 – How are water and nutrients transported through the body? L5 – How does diet affect the body? L6A – How does exercise affect the body? L6B – How does exercise affect the body? L7 – How do drugs affect the body?	L1 – What is the circulatory system? L2 – How is blood transported in the circulatory system? L3 – What are the key components of blood and why are they important? L4 – How are water and nutrients transported through the body? L5 – How does diet affect the body? L6A – How does exercise affect the body? L6B – How does exercise affect the body? L7 – How do drugs affect the body?
Key Concepts to assess	L1 - Children can identify and name the main parts of the human circulatory system, including the heart, blood vessels and blood, and describe the basic function of each. L2 - Children know that arteries, veins and capillaries are different types of blood vessels and can describe their basic functions. L3 - Children can identify the four main components of blood (red blood cells, white blood cells, platelets and plasma) and describe their basic functions. L4 - Children know that nutrients and water are transported around the body by the blood after being absorbed through the digestive system. L5 - Children can describe how a balanced diet contributes to good health and identify the main food groups.	L1 - Children can explain how the heart, blood vessels and blood work together as a circulatory system to transport oxygen, nutrients and waste products around the body. L2 - Children can compare the functions of arteries, veins and capillaries and explain how they are adapted to transport blood efficiently around the body. L3 - Children can explain how each component of blood contributes to maintaining a healthy body and describe how the components work together within the circulatory system. L4 - Children can explain how nutrients are absorbed into the bloodstream through the small intestine and transported by capillaries to cells around the body.

	L6A - Children know that regular exercise strengthens the heart and helps to keep the body healthy. L6B - Children can carry out simple investigations to observe how exercise affects the body. L7 - Children know that some drugs are medicines that help people when used correctly and that some drugs can be harmful.	L5 - Children can explain how diet affects the circulatory system and evaluate how nutritional choices can influence long-term health. L6A - Children can explain how exercise affects heart rate, circulation and overall fitness using evidence gathered from investigations. L6B - Children can plan, carry out and evaluate an investigation into the effects of exercise, identifying variables and drawing conclusions from the data collected. L7 - Children can explain how alcohol, tobacco and other drugs can affect the circulatory system and overall health, evaluating the importance of making informed lifestyle choices
Vocabulary	Heart, circulatory system, blood, blood vessel, artery, vein, capillary, oxygen, nutrients, plasma, red blood cell, white blood cell, platelet, pulse, exercise, balanced diet	Y5+ Circulation, cardiovascular system, absorb, diffusion, transport, lifestyle, heart rate, recovery rate, aerobic exercise, tobacco, alcohol, variable, analyse, evaluate, reliability
Experiences	Investigate a heart model to identify the main structures. Measure pulse and heart rate before, during and after different types of exercise. Investigate the effect of exercise on recovery rate and present findings using graphs. Plan a healthy day's menu, justifying choices using knowledge of nutrition and the circulatory system.	
SMSC	Social – Working collaboratively to investigate how lifestyle choices affect health. Moral – Understanding personal responsibility for making healthy choices that promote lifelong wellbeing.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We are happy – Understanding how healthy lifestyles contribute to physical and emotional wellbeing. We are safe – Learning how to make safe, informed choices about medicines, exercise and substances that may harm the body. We enjoy a challenge – Interpreting scientific data to explain how the circulatory system works. We celebrate diversity – Recognising that people have different health needs and lifestyles and treating everyone with respect. We show respect – Respecting our own bodies and encouraging healthy choices in ourselves and others. We are ready and fit for our future – Developing scientific knowledge that supports healthy, informed lifestyle choices throughout life.	

Spring		
UKS2	Electricity and Light	
	Year 5	Year 6
	L1 – What does electricity make components and appliances do? L2 – How does the structure of a circuit affect the components? L3 – Does the voltage in a circuit affect the components? L4A – What is the most important component when making an alarm?	L1 – What does electricity make components and appliances do? L2 – How does the structure of a circuit affect the components? L3 – Does the voltage in a circuit affect the components? L4A – What is the most important component when making an alarm?

	L4B – What is the most important component when making an alarm? L5A – How does light travel? L5B – How does light travel? L6 – How do we see the world around us? L7 – How do materials reflect in different ways? L8 – How does the position of a light source affect a shadow?	L4B – What is the most important component when making an alarm? L5A – How does light travel? L5B – How does light travel? L6 – How do we see the world around us? L7 – How do materials reflect in different ways? L8 – How does the position of a light source affect a shadow?
Key Concepts to assess	L1 - Children can identify common electrical components using recognised circuit symbols and construct a simple series circuit. L2 - Children know that a circuit must be complete for electricity to flow and can explain the purpose of a switch. L3 - Children know that increasing the number of cells changes how electrical components work. L4A - Children can construct a simple electrical alarm using a series circuit and appropriate components. L4B - Children can record observations and explain whether their alarm works successfully L5A - Children know that light travels in straight lines. L5B - Children know that light travels in straight lines and can identify simple examples of this. L6 - Children know that we see objects because they reflect light into our eyes or emit their own light. L7 - Children can identify that different materials reflect different amounts of light. L8 - Children know that shadows have the same shape as the object that casts them.	L1 - Children can explain the function of electrical components within a series circuit and justify why different components are needed for different purposes. L2 - Children can explain how altering the arrangement of components affects a circuit and predict whether a circuit will function successfully. L3 - Children can explain how voltage affects the brightness of bulbs and the loudness of buzzers, using evidence from comparative investigations. L4A - Children can design, build and evaluate an electrical alarm, selecting suitable components and justifying design decisions using scientific evidence. L4B - Children can evaluate their circuit, identify improvements and communicate findings using accurate scientific language. L5A - Children can explain how light travels in straight lines and describe how lenses can change the direction of light. L5B - Children can explain how concave and convex lenses alter the direction of light and use evidence from investigations to support their explanations L6 - Children can explain how light travels from a light source or reflected object into the eye using ray diagrams and appropriate scientific vocabulary. L7 - Children can explain why some materials reflect more light than others and investigate how surface texture affects reflection. L8 - Children can explain how changing the position of a light source changes the size and position of a shadow and use scientific evidence to justify their conclusions.
Vocabulary	Circuit, component, cell, battery, bulb, buzzer, switch, wire, electrical current, series circuit, electricity light source, reflection, shadow, opaque, transparent, translucent	Y5+ Voltage, conductor, insulator, circuit symbol, ray diagram, concave lens, convex lens, reflect, refraction, variable, investigation, evidence, analyse, evaluate, conclusion
Experiences	Build and test a series of electrical circuits using different components. Design and construct a working burglar alarm or warning system. Investigate how voltage affects the brightness of bulbs and the loudness of buzzers. Explore light using torches, mirrors and lenses to investigate reflection and shadow formation.	
SMSC	Social – Working collaboratively to design, build and evaluate electrical circuits and scientific investigations.	

	Moral – Understanding how scientific discoveries in electricity and light have improved safety, communication and everyday life.
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.
School Values	We enjoy a challenge – Solving problems through designing, building and evaluating electrical circuits. We are safe – Using electricity and scientific equipment safely during investigations. We show respect – Respecting equipment and valuing the ideas and contributions of others. We celebrate diversity – Recognising the contributions of scientists and inventors from around the world. We are ready and fit for our future – Developing enquiry, analytical thinking and engineering skills for future learning. We are happy – Enjoying practical science through designing, investigating and solving real-life problems.

Summer		
UKS2	Evolution, Inheritance and Classification	
	Year 5	Year 6
	L1 – How has the Earth changed over millions of years? L2 – How do animals change to survive in their habitat? L3 – How do plants change to survive in their habitat? L4 – How have humans evolved? L5 – What can living things inherit from their parents? Living Things and Their Habitats L6A – What is classification? L6B – How are living things classified? L6C – Why do scientists use classification systems? L6D – How can classification keys help us?	L1 – How has the Earth changed over millions of years? L2 – How do animals change to survive in their habitat? L3 – How do plants change to survive in their habitat? L4 – How have humans evolved? L5 – What can living things inherit from their parents? Living Things and Their Habitats L6A – What is classification? L6B – How are living things classified? L6C – Why do scientists use classification systems? L6D – How can classification keys help us?
Key Concepts to assess	L1 - Children know that living things have changed over millions of years and that fossils provide evidence of life in the past. L2 - Children know that animals have adaptations that help them survive in their environment and can identify examples of these adaptations. L3 - Children can identify adaptations that help plants survive in different environments. L4 - Children know that humans have evolved over time and share common characteristics with other living things L5 - Children know that offspring inherit characteristics from their parents and recognise that offspring are not identical to their parents.	L1 - Children can explain how environmental changes over millions of years have led to evolution and use fossil evidence to support scientific explanations. L2 - Children can explain how adaptations increase an animal's chances of survival and evaluate why some species become extinct when they cannot adapt to environmental change. L3 - Children can explain how plant adaptations increase survival in contrasting environments and justify why particular adaptations are successful. L4 - Children can explain how scientific evidence supports the theory of human evolution and describe how understanding has developed through the work of scientists.

	L6A – Children know that living things can be grouped according to observable characteristics and can use a simple classification key. L6B - Children can group plants, animals and microorganisms using observable features L6C - Children know that classification helps scientists identify and study living things. L6D - Children can use a branching key to identify living things accurately.	L5 - Children can explain that inherited characteristics are passed from parents to offspring and distinguish between inherited characteristics and those influenced by the environment. L6A - Children can explain why scientists classify living things and use classification keys accurately to identify unfamiliar organisms. L6B - Children can classify living things into broader and more specific groups using recognised scientific criteria. L6C - Children can explain how the Linnaean classification system organises living things and why it is still used today. L6D - Children can design, test and refine a branching classification key, justifying their choices using scientific vocabulary.
Vocabulary	Evolution, adaptation, habitat, survive, extinct, fossil, offspring, inherited characteristics, variation, classification, vertebrate, invertebrate, organism, branching key	Natural selection, inheritance, environmental variation, species, taxonomy, Linnaean classification, microorganism, classify, biodiversity, evidence, theory, adaptation, evolution
Experiences	Investigate fossils and use evidence to explain how living things have changed over time. Compare the adaptations of animals and plants from contrasting habitats, including South American environments. Use and create branching classification keys to identify local wildlife. Carry out a fieldwork investigation, classifying living things found in the school grounds using scientific criteria.	
SMSC	Social – Working collaboratively to classify living things and investigate how species have adapted over time. Moral – Understanding our responsibility to protect biodiversity and conserve endangered species.	
British Values	Individual Liberty – Making informed choices about healthy lifestyles and using scientific evidence to answer questions. Mutual Respect - Listening to others' ideas during investigations. Working cooperatively and valuing different viewpoints. Democracy - Sharing predictions. Agreeing fair ways to investigate. Discussing evidence before reaching conclusions. Rule of Law - Following safety rules during practical investigations. Using scientific equipment correctly and responsibly.	
School Values	We enjoy a challenge – Using evidence to explain evolution, inheritance and classification. We show respect – Respecting living things and recognising the importance of protecting habitats and biodiversity. We celebrate diversity – Appreciating the enormous diversity of living organisms and recognising that variation strengthens species. We are ready and fit for our future – Developing scientific enquiry, critical thinking and classification skills that prepare pupils for secondary science. We are happy – Exploring the natural world through practical investigations and outdoor learning. We are safe – Working safely and responsibly when carrying out fieldwork and handling living organisms.	

