WCPS Science Curriculum Overview 2025-2026

WYMONDHAM COLLEGE PREP SCHOOL

WCPS Curriculum Intent for Science

At Wymondham College Prep School, we want our children to love Science and enjoy the feeling of being a Scientist. At WCPS, our children explore the environment around them to develop a deeper understanding of the world they live in. Through Science, our children are given the opportunity to be independent and practical through the use of investigations. We value mistakes and through getting things wrong, children are given the opportunity to reflect and try again in order to address misconceptions. Using different enquiry processes, children learn knowledge and skills beyond the national curriculum objectives.

Our Science curriculum is broad and balanced, giving the children the chance to learn about their environment as well as the wider world. Our curriculum is carefully planned and sequenced to allow all children to be successful scientists regardless of their starting points. We use our outdoor area to enhance our curriculum and the opportunities that WCPS pupils are exposed to. We want our children to remember their science lessons fondly and we want to give them the foundational science knowledge in order to continue to deepen their learning at high school and beyond as well as opening their eyes to different jobs available in the field of science.

WCPS Science Curriculum: EYFS – Year 6

WYMONDHAM COLLEGE PREP SCHOOL

EYFS Statutory Framework Science Related Objectives
The Natural World • Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter

EYFS Science Curriculum		
Autumn Term	Spring Term	Summer Term
Core Knowledge • Pupils will know what a season is and know that there are 4 seasons • Pupils will know about our senses • Pupils will know about basic changes in states of matter • Pupils will know the names of a variety of animals • Pupils will know the key features of the lifecycle of a plant and an animal. • Pupils will know features of the natural world around them for minibeast habitats • Pupils will know why we need to respect and care for the natural environment and all living things • Pupils will know what living things need to survive Hinterland Knowledge • Pupils will know a variety of songs about the seasons • Pupils will know how to use their senses to explore natural objects in their environment • Pupils will know how they can use their sense of touch to explore materials changing state e.g. melting ice • Pupils will know how to use a range of equipment to explore and make observations		

Skills

- Pupils will develop being able to tell you there are 4 seasons and their names
- Pupils will develop being able to describe the differences between the 4 seasons
- Pupils will develop being able to name a lifecycle and describe its sequence
- Pupils will develop being able to name the 5 senses and give an example of each
- Pupils will develop being able to describe what happens when something melts, freezes, floats or sinks
- Pupils will develop being able to name a variety of animals and minibeasts
- Pupils will develop being able to explain that a living thing needs water, air, food and shelter
- Pupils will develop being able to name a variety of materials and talk about why they could be used for a particular purpose
- Pupils will develop being able to explore collections of materials with similar and/or different properties

Wonder

- *I wonder why a conker has a prickly shell…*
- *I wonder how I can make the ice melt…*
- *I wonder how tall a giraffe is…*
- *I wonder which material would be best to make a boat with…*
- *I wonder how many days it will take for our class butterfly…*

Experiences & Provocations

- Pupils will experience the curriculum by:
  - holding, touching and seeing natural objects and fruit found in Autumn and at harvest time.
  - hearing recorded sounds of animals in the woods.
  - encountering reptiles up close with a visit from a reptile company
  - hatching caterpillar eggs and watch them throughout their lifecycle

Vocabulary - Tier 3 Subject Specific

light, dark, spring, summer, autumn, winter, season, cold, warm, hot, rain, sun, brown, green, yellow, orange, leaves, trees, frozen, snow, ice, harvest, chrysalis, cocoon, egg, hatch, melt, freeze, lifecycle, waterproof, transparent

KS1 National Curriculum

Working Scientifically

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

Plants

- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
- identify and describe the basic structure of a variety of common flowering plants, including trees

Animals, including humans

- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores
- describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
- identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense

Everyday materials

- distinguish between an object and the material from which it is made
- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- describe the simple physical properties of a variety of everyday materials
- compare and group together a variety of everyday materials on the basis of their simple physical properties

Seasonal changes
- observe changes across the four seasons
- observe and describe weather associated with the seasons and how day length varies

Year 1 Science Curriculum

Autumn Term 1

Humans

Core Knowledge
1. Pupils will know the names of basic body parts of the human body.
2. Pupils will know the five senses of a human.
3. Pupils will know the function of a human's five senses.
4. Pupils will know which part of the human body is associated with each sense.

Hinterland Knowledge
- Pupils will know how eyes work.
- Pupils will know the role of taste buds.
- Pupils will know how people hear things.
- Pupils will know how people survive when their ears or eyes or don't work.

Skills
- Pupils will develop being able to identify.
- Pupils will develop being able to draw and label.

Spring Term 1

Animals

Core Knowledge
1. Pupils will know the names of a variety of common animals.
2. Pupils will know how to identify a variety of common animals.
3. Pupils will know the key features of a variety of common animals (fish, amphibians, reptiles, birds, mammals).
4. Pupils will know how scientists classify animals according to their features.

Hinterland Knowledge
- Pupils will know why different animals have certain features (ex: why a polar bear has fur).
- Pupils will know why some animals are suitable to be pets but others aren't.

Skills
- Pupils will develop being able to identify.

Summer Term 1

Identifying Materials

Core Knowledge
1. Pupils will know the difference between an object and the material from which it is made.
2. Pupils will know the names of a range of everyday materials.
3. Pupils will know how to identify a range of everyday materials based on their simple properties.
4. Pupils will know that different objects can be made from the same material.

Hinterland Knowledge
- Pupils will know how a variety of common materials feel / smell / look.
- Pupils will know why some objects are made from particular materials.
- Pupils will know that not all materials are solid.

• Pupils will develop being able to describe. • Pupils will develop being able to compare and contrast. • Pupils will develop being able to observe closely. Working Scientifically Skills ▪ Pupils will develop being able to observe closely, using simple equipment ▪ Pupils will develop being able to perform simple tests ▪ Pupils will develop being able to identify and classify ▪ Pupils will develop being able to use their observations and ideas to suggest answers to questions Wonder • *I wonder who has the biggest ears in the world…* • *I wonder if you can lose your sense of touch…* Experiences & Provocations Pupils will experience the curriculum by: ○ reading the book *What the Ladybird Head* by Julia Donaldson. ○ participating in simple tests to explore the use of their senses (ex: blind scent test).	• Pupils will develop being able to label. • Pupils will develop being able to describe. • Pupils will develop being able to compare and contrast. • Pupils will be develop being able to observe closely. • Pupils will develop being able to categorise. • Pupils will develop being able to ask simple questions and recognising that they can be answered in different ways Working Scientifically Skills ▪ Pupils will develop being able to observe closely, using simple equipment ▪ Pupils will develop being able to perform simple tests ▪ Pupils will develop being able to identify and classify Wonder • *I wonder why I don't have a tail…* • *I wonder why reptiles have scales…* Experiences & Provocations Pupils will experience the curriculum by: ○ reading the book *If I Had a Dinosaur* by Gabby Dawnay.	Skills • Pupils will develop being able to identify. • Pupils will develop being able to recognise. • Pupils will develop being able to describe. • Pupils will develop being able to observe closely. • Pupils will develop being able to compare. Working Scientifically Skills • Pupils will develop being able to ask simple questions and recognise that they can be answered in different ways. ▪ Pupils will develop being able to observe closely, using simple equipment ▪ Pupils will develop being able to perform simple tests ▪ Pupils will develop being able to identify and classify ▪ Pupils will develop being able to use their observations and ideas to suggest answers to questions ▪ Pupils will develop being able to gather and record data to help in answering questions. Wonder • *I wonder where metal comes from…* • *I wonder how wood becomes paper…*

○ listening to (and learning) songs about parts of the human body. Vocabulary - Tier 3 Subject Specific head, body, eyes, eyelashes, eyebrow, ears, nose, mouth, teeth, tongue, leg, arm, toes, fingers, hands, feet, chest, stomach, senses, touch, see, smell, taste, hear, fingers, skin, eyes, nose, ear, tongue Challenge: iris, pupil, outer ear, middle ear, inner ear, tastebuds.	○ visiting Banham Zoo and engaging in a hands on workshop with zookeepers from the education centre. ○ exploring (and learning how to use) non-fiction books to explore the subject. Vocabulary - Tier 3 Subject Specific animal, pet, fish, amphibian, reptile, bird, mammal, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, whiskers, names of common animals (ex: dog, cat, sheep, tiger, penguin etc).	Experiences & Provocations Pupils will experience the curriculum by: ○ handling a variety of materials and objects from which they are made. ○ reading the story of 'The 3 Little Pigs'. ○ exploring the school environment on a materials hunt. Vocabulary - Tier 3 Subject Specific object, material, wood, plastic, glass, metal, water, rock, fur, fabric, rubber, sponge, clay, paper, prediction. Challenge: solid, liquid, suitable, unsuitable.
Seasons – Autumn / Winter Core Knowledge 1. Pupils will know that the seasons change across the year. 2. Pupils will know when autumn and winter occur in the UK calendar.		Seasons – Spring / Summer Core Knowledge 1. Pupils will know that the seasons change across the year. 2. Pupils will know when spring and summer occur in the UK calendar.

3. Pupils will know what weather is typical of autumn and winter. 4. Pupils will know how day length varies in autumn and winter. Hinterland Knowledge • Pupils will know the activity of different animals in autumn and winter (ex: hibernation). • Pupils will know typical human activity associated with the seasons of autumn and winter (ex: autumn is harvest time). • Pupils will know what clothing is appropriate for the weather experienced in autumn and winter. • Pupils will know key signs in nature of autumn and winter (ex: what happens to the leaves on the trees in these seasons). Skills • Pupils will develop being able to recognise. • Pupils will develop being able to describe. • Pupils will develop being able to observe closely. • Pupils will develop being able to compare and contrast. Working Scientifically Skills		3. Pupils will know what weather is typical of spring and summer. 4. Pupils will know how day length varies in spring and summer, in contrast to autumn and winter. Hinterland Knowledge • Pupils will know the activity of different animals in spring and summer (ex: new birth). • Pupils will know typical human activity associated with the seasons of autumn and winter (ex: more people visiting the beach in the summer). • Pupils will know what clothing is appropriate for the weather experienced in spring and summer, including protection for our bodies (sun cream, sun hat etc). • Pupils will know key signs in nature of spring and summer (ex: planting seeds and flowers blooming). Skills • Pupils will develop being able to recognise. • Pupils will develop being able to describe. • Pupils will develop being able to observe closely.

• Pupils will develop being able to observe closely, using simple equipment • Pupils will develop being able to perform simple tests • Pupils will develop being able to use their observations and ideas to suggest answers to questions • Pupils will develop being able to gather and record data to help in answering questions. Wonder • *I wonder what would happen if it was winter all the time…* • *I wonder if the seasons look the same in Australia as they do in England…* Experiences & Provocations Pupils will experience the curriculum by: ○ exploring our local area (campus) to observe and record the natural signs of the current season… to compare later in the year. ○ reading the book *Our Seasons* by Sue Lowell Gallion. ○ participating in simple tests to measure the current weather (ex: wind, rain & day length). Vocabulary - Tier 3 Subject Specific		• Pupils will develop being able to compare and contrast. Working Scientifically Skills ▪ Pupils will develop being able to observe closely, using simple equipment ▪ Pupils will develop being able to perform simple tests ▪ Pupils will develop being able to use their observations and ideas to suggest answers to questions ▪ Pupils will develop being able to gather and record data to help in answering questions. Wonder • *I wonder what would happen if it never rained…* • *I wonder what the hottest temperature recorded in the UK has been…* Experiences & Provocations Pupils will experience the curriculum by: ○ exploring our local area (campus) to observe and record the natural signs of the current season… to compare against studies in autumn and winter. ○ reading the book *Our Seasons* by Sue Lowell Gallion.

season, autumn, winter, spring, summer, calendar, year, month, wind, rain, snow, hail, fog, sun, change. OUTDOOR SCIENCE – 1 / 2 WEEKS (K) Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees – LOOK AT LEAVES, COLLECT TREE SEEDS e.g.: Conker, acorns, pine cones, sycamore keys, etc.…. (You could plant some in jam jars and leave over winter to see what happens…. Jam jars stop the squirrels!!!) LOOK – which trees are deciduous and which are evergreen?		○ participating in simple tests to measure the current weather (ex: wind, rain & day length). Vocabulary - Tier 3 Subject Specific season, autumn, winter, spring, summer, calendar, year, month, wind, rain, snow, hail, fog, sun, change.
Autumn Term 2	**Spring Term 2**	**Summer Term 2**
Humans & Animals Core Knowledge 1. Pupils will know that humans and animals change as they grow. 2. Pupils will know that different types of animals have different habitats, suited to their key features.	Plants Core Knowledge 1. Pupils will know the key parts of plant (ex: stem, roots, leaves). 2. Pupils will know that although plants have the same main parts, they can look different. 3. Pupils will know that some plants are grown for eating.	Comparing Materials Core Knowledge 1. Pupils will know that different materials have different simple physical properties. 2. Pupils will know how to group materials based on their properties.

3. Pupils will know that different animals need different diets. 4. Pupils will know that gathering data is an important part of investigating scientific questions. Hinterland Knowledge • Pupils will know that we don't just get older on our birthday. • Pupils will know how to explore questions such as 'do people with the biggest feet also have the biggest hands?'. • Pupils will know some similarities and differences between human and animal body parts. Skills • Pupils will develop being able to compare and contrast. • Pupils will develop being able to infer. • Pupils will develop being able to explain and justify. • Pupils will develop being able to evaluate. • Pupils will develop being able to conclude. Working Scientifically Skills ▪ Pupils will develop being able to identify and classify	4. Pupils will know the names of a range of common plants and trees. 5. Pupils will know how to identify a range of common plants and trees. Hinterland Knowledge • Pupils will know what makes a plant a plant. • Pupils will know why some plants have flowers and others don't. • Pupils will know why we can't eat all kinds of plants. • Pupils will know how a plant grows. Skills • Pupils will develop being able to identify. • Pupils will develop being able to recognise. • Pupils will develop being able to describe. • Pupils will develop being able to observe closely. • Pupils will develop being able to compare and contrast. • Pupils will develop being able to draw and label. Working Scientifically Skills • Pupils will develop being able to observe closely, using simple equipment	3. Pupils will know that the simple properties of a material impact its suitability for a purpose. 4. Pupils will know why simple testing is important when an exploring an idea. Hinterland Knowledge • Pupils will know how to investigate materials to know their properties (ex: is this a strong material?). • Pupils will know how to identify a material using their senses (ex: touching but not looking). Skills • Pupils will develop being able to describe. • Pupils will develop being able to recall. • Pupils will develop being able to compare and contrast. • Pupils will develop being able to explain and justify. • Pupils will develop being able to conclude. Working Scientifically Skills ▪ Pupils will develop being able to perform simple tests

▪ Pupils will develop being able to use their observations and ideas to suggest answers to questions ▪ Pupils will develop being able to gather and record data to help in answering questions. Wonder • *I wonder if I can recognise my grandparents from a baby photo…* • *I wonder if a polar bear could survive in a rainforest…* Experiences & Provocations Pupils will experience the curriculum by: ○ participating in simple tests to explore and compare ourselves and our friends. ○ exploring (and learning how to use) non-fiction books to explore the subject. ○ sharing our baby photos to identify each other and explore how we have changed. Vocabulary - Tier 3 Subject Specific (revisit vocab from 'humans' unit in Autumn 1 and 'animals' unit in Spring 1)) habitat, desert, arctic, rainforest, omnivore, herbivore, carnivore, diet, data, prediction,	▪ Pupils will develop being able to perform simple tests ▪ Pupils will develop being able to identify and classify ▪ Pupils will develop being able to use their observations and ideas to suggest answers to questions Wonder • *I wonder how heavy the biggest potato every grown was…* • *I wonder if a plant can grow without water…* Experiences & Provocations Pupils will experience the curriculum by: ○ handling and observing a range of real plants and trees. ○ exploring our local area (campus) to identify plants and trees growing around us. ○ planting their own seeds and recording observations as they grow. Vocabulary - Tier 3 Subject Specific plant, flower, fruit, vegetable, stem, leaf, petal, roots, seed, tree, trunk, branch, bark, names of common plants and trees (ex: daisy, rose, buttercup, nettle, dandelion, oak, ash, yew). Challenge: deciduous, evergreen.	▪ Pupils will develop being able to use their observations and ideas to suggest answers to questions ▪ Pupils will develop being able to gather and record data to help answer questions. Wonder • *I wonder if paper is strong enough to build a bridge…* • *I wonder what the most fragile material on the planet is…* Experiences & Provocations Pupils will experience the curriculum by: ○ handling a variety of materials and objects from which they are made. ○ participating in simple tests to explore the suitability of a material for a purpose (ex: fixing an umbrella). Vocabulary - Tier 3 Subject Specific (revisit vocab from 'identifying materials' unit in Autumn 2) strong, bendy, stretchy, thick, waterproof, absorbent, rough, smooth, hard, soft, shiny, dull, translucent, transparent, opaque, similar, different. Challenge: flexible, fragile.

WCPS Science Curriculum: EYFS – Year 6

Outdoor Science – Half Term * Recap and review – fill in any gaps from the year * weather station / seasonal changes * invertebrate hunting * gardening & growing * sports science * den building & material science Outdoor Science – 1/2 WEEKS K) Observe changes across the four seasons (K) Observe and describe weather associated with the seasons and how day length varies. - * set up a weather station to measure rainfall / windsocks to look at wind. * set up weather maps for the children to 'report' on the weather	Outdoor Science – 1/2 WEEKS K) Observe changes across the four seasons (K) Observe and describe weather associated with the seasons and how day length varies. - * use weather stations to compare the different seasons * investigate shadows on the playground * go for a materials hunt around the school grounds * recap deciduous and evergreen trees now back in leaf! Outdoor Science - 1/2 WEEKS (K) Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees (K) Identify and describe the basic structure of a variety of common flowering plants, including trees. Plant seeds and vegetable beds. Match leaves to trees in the school ground or local park – learn their names. Look at bulbs planted in the autumn.	Outdoor Science - 1/2 WEEKS (K) Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees (K) Identify and describe the basic structure of a variety of common flowering plants, including trees. * Look at flowers – daisies, dandelions, bluebells, buttercups, etc. * Nurture seeds planted in Spring two • * Make fairy houses from different materials

KS1 National Curriculum
Working Scientifically: ▪ asking simple questions and recognising that they can be answered in different ways ▪ observing closely, using simple equipment

- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

Living things and their habitats:

- explore and compare the differences between things that are living, dead, and things that have never been alive
- identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- identify and name a variety of plants and animals in their habitats, including micro-habitats
- describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Plants:

- observe and describe how seeds and bulbs grow into mature plants
- find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Animals, including humans:

- notice that animals, including humans, have offspring which grow into adults
- find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
- describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

Uses of everyday materials:

- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Year 2 Science Curriculum		
Autumn Term 1	Spring Term 1	Summer Term 1

WCPS Science Curriculum: EYFS – Year 6

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Uses of everyday materials	Habitats	Plants
Core Knowledge 1. Pupils will know all objects are made of one or more materials. 2. Pupils will know the properties of materials. 3. Pupils will know some materials are more suited for a certain purpose than other materials. 4. Pupils will know materials are tested for their suitability. 5. Pupils will know some materials can change shape. Hinterland Knowledge • Pupils will know how different materials look and feel. • Pupils will know how materials are tested for a specific purpose. • Pupils will know some materials change shape and what they are. Skills • Pupils will develop being able to recognise an object's material.	Core Knowledge 1. Pupils will know animals and plants live in a habitat which is suited. 2. Pupils will know habitats provide basic needs including shelter, food and water. 3. Pupils will know there are micro-habitats within a habitat. 4. Pupils will know micro-habitats have different conditions. 5. Pupils will know the conditions of the habitat affect which animals and plants live there. 6. Pupils will know how animals obtain food through a food chain. Hinterland Knowledge • Pupils will know why animals or plants migrate. • Pupils will know how plants and animals find new habitats when theirs is destroyed. Skills • Pupils will develop being able to recall a range of animals and plants that live in a specific habitat.	Core Knowledge 1. Pupils will know plants grow from seeds or bulbs. 2. Pupils will know seeds/bulbs germinate into seedlings and then mature plants. 3. Pupils will know mature plants may have flowers, which develop into seeds, berries and fruits. 4. Pupils will know seeds and bulbs need to be planted at certain times of the year. 5. Pupils will know different seeds and bulbs grow at different rates. 6. Pupils will know plants are suited to different environments and conditions. Hinterland Knowledge • Pupils will know the different parts of a plant. • Pupils will know why some plants have flowers. • Pupils will know plants move towards the light. Skills • Pupils will develop being able to describe how plants grow from seeds and bulbs.

• Pupils will develop being able to identify a material's properties. • Pupils will develop being able to identify what properties are suitable for a purpose. • Pupils will develop being able to recall changing shape vocabulary. • Pupils will develop being able to recognise that a material can come in different forms with different properties. Working Scientifically Skills • Pupils will develop being able to observe closely, using simple equipment • Pupils will develop being able to perform simple tests • Pupils will develop being able to identify and classify • Pupils will develop being able to use their observations and ideas to suggest answers to questions Wonder • *I wonder if a boat has ever been made from glass…* • *I wonder what a jacket made from wood would feel like…* Experiences & Provocations	• Pupils will develop being able to recall a range of animals and plants that live in a specific micro-habitat. • Pupils will develop being able to explain the features of a plant and animal, and how they are suited to their habitat. • Pupils will develop being able to describe what animals eat in a habitat. • Pupils will develop being able to explain how plants provide shelter. • Pupils will develop being able to summarise a food chain. Working Scientifically Skills • Pupils will develop being able to ask simple questions and recognise that they can be answered in different ways. ▪ Pupils will develop being able to identify and classify ▪ Pupils will develop being able to use their observations and ideas to suggest answers to questions Wonder • *I wonder what the most hostile habitat is…* • *I wonder what underwater habitats are like…*	• Pupils will develop being able to observe the life cycle of a plant. • Pupils will develop being able to identify what a plant needs to survive. • Pupils will develop being able to compare the conditions needed by different plants. Working Scientifically Skills • Pupils will develop being able to observe closely, using simple equipment • Pupils will develop being able to perform simple tests • Pupils will develop being able to use their observations and ideas to suggest answers to questions • Pupils will develop being able to gather and record data to help in answering questions Wonder • *I wonder if any plants survive in Antarctica…* • *I wonder what the oldest living plant is…* Experiences & Provocations Pupils will experience the curriculum by: ○ Growing beans and keeping a growing diary. ○ Growing plants in different deprived conditions in the classroom.

Pupils will experience the curriculum by: • Constructing their own boat and testing its suitability. Vocabulary - Tier 3 Subject Specific material, property, opaque, transparent, translucent, reflective, flexible, rigid Outdoor Science (K) Observe and describe how seeds and bulbs grow into mature plants * plant bulbs for the spring * look at seeds from flowering plants * compare and group plants * create a bird feeding station	• *I wonder what the smallest habitat/micro-habitat is…* Experiences & Provocations Pupils will experience the curriculum by: ○ Completing a mini-beast hunt to find animals/plants in their habitats/ Vocabulary - Tier 3 Subject Specific habitat, micro-habitat, food chain, survive, conditions OUTDOOR SCIENCE - 1/2 WEEKS (K) Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses * den building / testing materials * engineering challenges – build a raft that floats on the paddling pool or water tray * build a waterproof shelter	Vocabulary - Tier 3 Subject Specific Light Shade Sun Warm Cool Water Space Grow Healthy Bulb Seed Germinate Seedling OUTDOOR SCIENCE - 1/2 WEEKS (K) Observe and describe how seeds and bulbs grow into mature plants Gardening, growing flowers and veggies • Create art for the garden area.
Autumn Term 2	Spring Term 2	Summer Term 2
Living things Core Knowledge	Animals – life cycles	Recap and Revisit

1. Pupils will know all objects are living, dead or never alive. 2. Pupils will know dead things include animals and plants. 3. Pupils will know dead things include parts of animals and plants that are no longer attached. 4. Pupils will know objects made of wood are classed as dead. 5. Pupils will know objects made of rock, metal and plastic have never been alive. Hinterland Knowledge • Pupils will know why we classify objects into groups. • Pupils will know why parts of animals and plants that are no longer attached as classed as living. Skills • Pupils will develop being able to identify parts of an animal or plant. • Pupils will develop being able to identify a range of items that are living, dead and never alive. • Pupils will develop being able to identify what material an object is made from.	Core Knowledge 1. Pupils will know humans are animals. 2. Pupils will know animals have offspring which grow into adults. # 3. Pupils will know some animals will have offspring which grow from young, and some have offspring which hatch from eggs. 4. Pupils will know some animals have offspring that do not look like their parents. 5. Pupils will know animal's basic needs are feeding, drinking and breathing. 6. Pupils will know animals need nutrients to grow into healthy adults. 7. Pupils will know good hygiene is important to prevent infections and illness. Hinterland Knowledge • Pupils will know some methods used by animals to catch food. • Pupils will know some methods used by animals to attract a mate. • Pupils will know the different food groups. • Pupils will know how animals become endangered and extinct. • Pupils will know past diseases that have spread.	During this term, the pupils will revisit and explore the Science Units studied throughout the year, engaging with practical experiments, investigations and inquiries surrounding the concepts, knowledge and skills studied, supporting the retention of core knowledge into pupils' long-term memory. Exploratory projects may include: • Weather Stations • Seasonal Changes • Invertebrate Hunting • Gardening & Growing • Sports Science • Den Building & Material Science • Healthy living

• Pupils will develop being able to explain how they know something is living, dead or never alive. Working Scientifically Skills • Pupils will develop being able to ask simple questions and recognise that they can be answered in different ways. • Pupils will develop being able to observe closely, using simple equipment • Pupils will develop being able to identify and classify • Pupils will develop being able to use their observations and ideas to suggest answers to questions Wonder • *I wonder if something dead could become alive again…* • *I wonder if robots are classed as living or never alive…* Experiences & Provocations Pupils will experience the curriculum by: ○ Completing a woodland trail to find and categorise objects as living, dead or never alive.	• Pupils will know how a human's health can be affected by not having the correct nutrients. Skills • Pupils will develop being able to describe how animals have offspring. • Pupils will develop being able to identify the different stages of animal life cycles. • Pupils will develop being able to explain what happens at each stage of the animal life cycle. • Pupils will develop being able to summarise the basic needs of animals for survival. • Pupils will develop being able to explain the importance of exercise and eating the right amounts of food. • Pupils will develop being able to explain the importance of hygiene. Working Scientifically Skills • Pupils will develop being able to ask simple questions and recognise that they can be answered in different ways. ▪ Pupils will develop being able to identify and classify ▪ Pupils will develop being able to gather and record data to help in answering questions.	

Vocabulary - Tier 3 Subject Specific living, dead, never, alive OUTDOOR SCIENCE – 1 / 2 WEEKS (K) Explore and compare the differences between things that are living, dead, and things that have never been alive * living / Never alive / Dead – hunt outside * sort objects into groups * seasonal change work	Wonder • *I wonder what animals are extinct…* • *I wonder what animals eat the same food as humans…* • *I wonder how long animals are in eggs before they hatch…* • *I wonder who the tallest human was…* • *I wonder what food is the most nutritious…* Experiences & Provocations Pupils will experience the curriculum by: o Observing chicks hatch from their eggs. o Design/create a nutritious meal. o Participating in a daily mile. Vocabulary - Tier 3 Subject Specific Offspring, Reproduction, Growth, Survive, Water, Food, Air, Exercise, Breathing, Baby, Toddler, Child, Teenager, Adult, Old Person, Survive, Hygiene, Germs, Disease Outdoor Science - 1/2 WEEKS (K) identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, rock, pa per & cardboard * create bird boxes and put them up * maintain bird feeding stations	

KS2 National Curriculum
Working scientifically: During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: ▪ asking relevant questions and using different types of scientific enquiries to answer them ▪ setting up simple practical enquiries, comparative and fair tests ▪ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers ▪ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions ▪ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables ▪ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions ▪ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions ▪ identifying differences, similarities or changes related to simple scientific ideas and processes ▪ using straightforward scientific evidence to answer questions or to support their findings. Plants: Pupils should be taught to: ▪ identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers ▪ explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant ▪ investigate the way in which water is transported within plants ▪ explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal Animals, including humans: Pupils should be taught to: ▪ identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat ▪ identify that humans and some other animals have skeletons and muscles for support, protection and movement

Rocks:

Pupils should be taught to:

- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- describe in simple terms how fossils are formed when things that have lived are trapped within rock
- recognise that soils are made from rocks and organic matter

Light:

Pupils should be taught to:

- recognise that they need light in order to see things and that dark is the absence of light
- notice that light is reflected from surfaces
- recognise that light from the sun can be dangerous and that there are ways to protect their eyes
- recognise that shadows are formed when the light from a light source is blocked by an opaque object
- find patterns in the way that the size of shadows change

Forces and magnets:

Pupils should be taught to:

- compare how things move on different surfaces
- notice that some forces need contact between 2 objects, but magnetic forces can act at a distance
- observe how magnets attract or repel each other and attract some materials and not others
- compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- describe magnets as having 2 poles
- predict whether 2 magnets will attract or repel each other, depending on which poles are facing

Year 3 Science Curriculum		
Autumn Term 1	Spring Term 1	Summer Term 1
Animals including humans – Feeding and moving Inquiry Question How do our bodies work? Core Knowledge 1. Pupils will know that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food – they get nutrition from what they eat. 2. Pupils will know that food contains a range of different nutrients – carbohydrates (including sugars), protein, vitamins, minerals, fats, sugars, water – and fibre that are needed by the body to stay healthy. 3. Pupils will know that a piece of food will often provide a range of nutrients. Hinterland Knowledge • Pupils will know what happens to the body if we don't have the right nutrients.	Contact, non-contact, forces and magnets Inquiry Question How do objects interact with each other? Core Knowledge 1. Pupils will know that a force is a push or a pull. When an object moves on a surface, the texture of the surface and the object affect how it moves. 2. Pupils will know how to compare how things move on different surfaces. 3. Pupils will know that some forces need contact between two objects, but magnetic forces can act at a distance. 4. Pupils will know that a magnet attracts magnetic material and will know examples of materials that are magnetic. 5. Pupils will know that the strongest parts of a magnet are the poles. Magnets have two poles – a north pole and a south pole. 6. Pupils will know how magnet poles repel and attract each other.	Rocks Inquiry Question Are all rocks the same? Core Knowledge 1. Pupils will know that rock is a naturally occurring material. 2. Pupils will know there are different types of rock e.g. sandstone, limestone, slate etc. which have different properties. 3. Pupils will know that rocks have different physical properties such as the size of grain and the texture. 4. Pupils will know that soils are made up of pieces of ground down rock which may be mixed with plant and animal material (organic matter). 5. Pupils will know that the type of rock used in the soil will affect the properties of the soil. 6. Pupils will know that some rocks contain fossils. Pupils will know how fossils are formed when things that have lived are trapped within rock. Hinterland Knowledge

• Pupils will know which food types we should eat in moderation to have a healthy, balanced diet. Skills • Pupils will develop being able to compare and contrast different food items and the benefits they will give them. • Pupils will develop being able to classify the food items into different groups. Working Scientifically Skills • asking relevant questions and using different types of scientific enquiries to answer them • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Wonder • *I wonder why too much of certain food groups is bad for us.* • *I wonder why vegetables are good for me.*	Hinterland Knowledge • Pupils will be able to predict which materials are magnetic based on their properties. • Pupils will know how to design experiments to test the magnetic properties of materials. Skills • Pupils will develop being able to hypothesise which materials will be magnetic. • Pupils will be able to explain how things move on different surfaces using knowledge about properties of materials. • Pupils will develop being able to describe how magnets work. Working Scientifically Skills • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	• Pupils will know how to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Pupils will know about different types of rock found in our local area. Skills • Pupils will develop being able to compare and contrast different types of rock. • Pupils will develop being able to describe how fossils are formed. • Pupils will develop being able to group the rocks depending on their physical features. • Pupils will develop being able to summarise how different types of rocks are formed. Working Scientifically Skills • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

Experiences & Provocations • Looking at packaging to find the different food types. • Favourite food tally (done tally charts in year 2) – which of the food groups is most popular? Create a graph. Vocabulary - Tier 3 Subject Specific Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine Outdoor Science *Human skeletons – creating from sticks etc.	• recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • identifying differences, similarities or changes related to simple scientific ideas and processes Wonder • *I wonder how magnets work.* • *I wonder why some materials are magnetic and others aren't.* • *I wonder how this item will move on different surfaces. I wonder how it will affect how far it travels.* Experiences & Provocations • Carry out investigations to explore how objects move on different surfaces e.g. spinning tops/coins, rolling balls/cars, clockwork toys, soles of shoes etc. • Explore how magnets work at a distance e.g. through the table, in water, jumping paper clips up off the table. • Devise an investigation to test the strength of magnets.	• identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings. Wonder • *I wonder what the soil in our school is made of.* • *I wonder how fossils are formed.* • *I wonder what rocks we can find in the outside areas of the school.* • *I wonder what types of rock and found in different places.* Experiences & Provocations • Examination of different rocks. • The pebble in my pocket and other books which are based around rocks. • Mary Anning and fossils. Vocabulary - Tier 3 Subject Specific rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, fossil, bone, flesh, minerals, marble, chalk, granite, sandstone, slate, soil, types of soil (e.g. peaty, sandy, chalk, clay) Outdoor Science Hunt for different types of rock.

	Vocabulary - Tier 3 Subject Specific Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole Outdoor Science Testing the outdoor area for magnetic materials. Testing different surfaces outside and how far items travel.	Experiment involving soil and examining the different parts found in it.
Autumn 2	**Spring 2**	**Summer 2**
Animals including humans – Skeletons Inquiry Question How do our bodies work? Core Knowledge 1. Pupils will know that humans, and some other animals, have skeletons and can name some of the bones in the skeleton. 2. Pupils will know how muscles and joints help them to move. Hinterland Knowledge • Pupils will know about animals that don't have skeletons	Light and Shadows Inquiry Question How are shadows formed? Core Knowledge 1. Pupils will know that they need light in order to see things, and that dark is the absence of light. 2. Pupils will know that light is reflected from surfaces. 3. Pupils will know that light from the sun can be dangerous and that there are ways to protect their eyes.	Plants Inquiry Question Are all plants planted by humans? Core Knowledge 1. Pupils will know the different parts of a plant including roots, stems/trunks, leaves and flowers/blossom. 2. Pupils will know the functions of different parts of flowering plants. 3. Pupils will know the requirements of plants for life and growth and how they vary from plant to plant.

• Pupils will know what bones are made of • Pupils will know how to keep their bones healthy. Skills • Pupils will be able to identify the different bones in the body. • Pupils will be able to explain how muscles help the body to move. Working Scientifically Skills • asking relevant questions and using different types of scientific enquiries to answer them • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Wonder • *I wonder which bones make up my body.* • *I wonder how we move our bodies.* Experiences & Provocations	4. Pupils will know that shadows are formed when the light from a light source is blocked by an opaque object. Hinterland Knowledge • Pupils will know how to find patterns in the way that the size of shadows change. • Pupils will know how people used to manage without light and some of the items they used instead to help them see. Skills • Pupils will develop being able to explain how light works. • Pupils will develop being able to describe how shadows are created. • Pupils will develop being able to compare and contrast the shapes of different shadows. • Pupils will develop being able to observe how shadows change depending on the light source. Working Scientifically Skills • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests	4. Pupils will know the way in which water is transported within plants. 5. Pupils will know how flowers help the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Hinterland Knowledge • Pupils will know that different plants grow best in different weathers. • Pupils will know that different plants require different conditions for germination and growth. Skills • Pupils will develop being able to describe how plants grow. • Pupils will develop being able to observe changes to the plants over time. • Pupils will develop being able to summarise the different life cycles that plants follow • Pupils will develop being able to interpret findings and explain why they think that their findings have gone the way have. Working Scientifically Skills • asking relevant questions and using different types of scientific enquiries to answer them • making systematic and careful observations

• Looking at packaging to find the different food types. • Favourite food tally (done tally charts in year 2) – which of the food groups is most popular? Create a graph. Vocabulary - Tier 3 Subject Specific Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine Outdoor Science *Human skeletons – creating from sticks etc	• making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • identifying differences, similarities or changes related to simple scientific ideas and processes Wonder • *I wonder what type of shadow will be created by this object.* • *I wonder why shadows get larger and smaller.* • *I wonder why we need light.* • Experiences & Provocations • Children will observe shadows at different times of day.	• gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings. Wonder • *I wonder what food plants eat.* • *I wonder how plants grow.* Experiences & Provocations • Experiment involving growing plants in different conditions. • Using books around plants to support cross-curricular learning.

	• Children will observe what happens when the light source moves closer to and further away from an object. • Vocabulary - Tier 3 Subject Specific • light, light source, Sun, sunlight, dangerous, shadow, dark, reflect, opaque, translucent, transparent. • Outdoor Science • Shadows from the sun.	Vocabulary - Tier 3 Subject Specific photosynthesis, pollen, insect/wind pollination, male, female, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal), air, nutrients, minerals, soil, absorb, transport Outdoor Science Observing the plants in our outdoor areas. Looking at plants and discussing the method that they may have taken to grow.

KS2 National Curriculum
Working Scientifically During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: ▪ asking relevant questions and using different types of scientific enquiries to answer them ▪ setting up simple practical enquiries, comparative and fair tests ▪ making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers ▪ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions ▪ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables ▪ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions ▪ using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions ▪ identifying differences, similarities or changes related to simple scientific ideas and processes ▪ using straightforward scientific evidence to answer questions or to support their findings.

Living things and their habitats

- Pupils should be taught to:
- recognise that living things can be grouped in a variety of ways
- explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
- recognise that environments can change and that this can sometimes pose dangers to living things

Animals including humans

- Pupils should be taught to:
- describe the simple functions of the basic parts of the digestive system in humans
- identify the different types of teeth in humans and their simple functions
- construct and interpret a variety of food chains, identifying producers, predators and prey.

States of matter

- Pupils should be taught to:
- compare and group materials together, according to whether they are solids, liquids or gases
- observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)
- identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Sound

- Pupils should be taught to:
- identify how sounds are made, associating some of them with something vibrating
- recognise that vibrations from sounds travel through a medium to the ear
- find patterns between the pitch of a sound and features of the object that produced it
- find patterns between the volume of a sound and the strength of the vibrations that produced it
- recognise that sounds get fainter as the distance from the sound source increases.

Electricity

- Pupils should be taught to:
- identify common appliances that run on electricity
- construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers

- identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
- recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
- recognise some common conductors and insulators, and associate metals with being good conductors.

Year 4 Science Curriculum		
Autumn Term 1	Spring Term 1	Summer Term 1
Sound Core Knowledge 1. Pupils will know a sound produces vibrations which travel through a medium from the source to our ears. 2. Pupils will know that different mediums such as solids, liquids and gases can carry sound, but sound cannot travel through a vacuum. 3. Pupils will know that vibrations cause parts of our body inside our ears to vibrate, allowing us to hear (sense) the sound. 4. Pupils will know that the loudness (volume) of the sound depends on the strength (size) of vibrations. 5. Pupils will know that sounds decrease in volume as you move away from the source. Hinterland Knowledge	Animals including humans – teeth, the digestive system, food chains. Core Knowledge 1. Pupils will know how to describe the simple functions of the basic parts of the digestive system in humans. 2. Pupils will know how to identify the different types of teeth in humans and their simple functions. 3. Pupils will know how to construct and interpret a variety of food chains, identifying producers, predators and prey. Hinterland Knowledge • Pupils will know how food travels from the teeth through the body.	States of matter Core Knowledge 1. Pupils will know that solids, liquids and gases are three states of matter. 2. Pupils will know that matter can change from one state to another if heated or cooled at the correct temperature. 3. Pupils will know that melting, freezing, boiling/ evaporation and condensations are processes involving a change of state. 4. Pupils will know that the freezing point of water is 0˚C. Water boils when it is heated to 100˚C. 5. Pupils will know that the water cycle involves water at the surface evaporating and then condensing back into a liquid, forming clouds. When the clouds are too heavy, this then falls as precipitation.

• Pupils will know how sound links to music and musical instruments. • Pupils will know how hearing aids help people to hear sounds. Skills • Pupils will develop being able to compare and contrast different sounds made closer and further away from sources. • Pupils will develop being able to describe how sound travels. Working Scientifically Skills • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • identifying differences, similarities or changes related to simple scientific ideas and processes	• Pupils will know how different foods create different amounts of vitamins and process differently. Skills • Pupils will develop being able to describe how the digestive system works. • Pupils will develop being able to sequence the order of events in the digestive system. • Pupils will develop being able to identify the different parts of a food chain. identify / recognise / describe / observe / recall / compare / contrast / infer / sequence / summarise / categorise / reason / interpret / synthesise / explain / justify / conclude / judge / evaluate / critique / empathise / hypothesise Working Scientifically Skills • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • identifying differences, similarities or changes related to simple scientific ideas and processes Wonder	Hinterland Knowledge • Pupils will know examples of different materials that can change states of matter. E.g. chocolate. Skills • Pupils will develop being able to evaluate how different state of matter changes occur. • Pupils will develop being able to recognise how states of matter change. • Pupils will be able to observe different materials and their reaction to heat and cold. identify / recognise / describe / observe / recall / compare / contrast / infer / sequence / summarise / categorise / reason / interpret / synthesise / explain / justify / conclude / judge / evaluate / critique / empathise / hypothesise Working Scientifically Skills • setting up simple practical enquiries, comparative and fair tests ▪ making systematic and careful observations and, where appropriate, taking accurate

Wonder

- *I wonder how people hear in space.*
- *I wonder how sound travels through objects.*
- *I wonder how hearing aids work.*

Experiences & Provocations

- Pupils will experience the curriculum by:
  - Explore how sound works through different materials.
  - Creating a soundproof box for teddy.
  - Record and illustrate a soundscape.

Vocabulary - Tier 3 Subject Specific

Vibration, source, travel, pitch, volume, insulator

Outdoor Science

String and telephone outside.
Measuring sound in different places at different times of the day.

- *I wonder how food travels through the body.*
- *I wonder why my teeth are different sizes.*

Experiences & Provocations

- Pupils will experience the curriculum by:
  - Drama/role play as the food travelling through the digestive system.
  - Measure out the length of the digestive system.
  - Happy smiles club visit – free health education talks.
  - Match the tooth to the animal.
  - Food chain nesting dolls - 17 Cool Ways to Teach Food Webs and Food Chains, In Person and Online (weareteachers.com)

Vocabulary - Tier 3 Subject Specific

Digestion, saliva, esophagus, stomach, small intestines, nutrients, rectum, anus, incisor, canine, molar, premolar, food chain, food web, producers, predators, prey, consumers.

Outdoor Science

Use outdoor materials to make a model of the digestive system.

measurements using standard units, using a range of equipment, including thermometers and data loggers

- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions

Wonder

- *I wonder what happens if I heat chocolate.*
- *I wonder how long it takes for ice to melt in different environments.*

Experiences & Provocations

- Pupils will experience the curriculum by:
  - Create a vessel to keep something from melting.
  - Things that melt challenge.

Vocabulary - Tier 3 Subject Specific

Solid, liquid, gas, melting, freezing, boiling, evaporation, condensation.

Outdoor Science

The difference between melting ice outdoors and indoors.

	Collect stones that represent the shapes of the different teeth. Biodiversity challenge – geocatch. Ltl.org.uk Interdependence in food webs – ball of string activity. Ltl.org.uk	The magic puddle – draw around a puddle and see how long it takes to evaporate.
Autumn Term 2	**Spring Term 2**	**Summer Term 2**
Electricity Core Knowledge 1) Pupils will know an electrical circuit consists of a cell or battery connected to a component using wires. 2) Pupils will know if there is a break in the circuit, a loose connection or a short circuit, the component will not work. 3) Pupils will know that a switch can be added to the circuit to turn the component on and off. 4) Pupils will know that metals are good conductors so they can be used as wires in a circuit. Non-metallic solids are insulators except for graphite (pencil lead). Hinterland Knowledge	Living things and their habitats Core Knowledge 1) Pupils will know that things can be grouped (classified) in different ways according to their features. Classification keys can be used to identify and name living things. 2) Pupils will recognise that living things can be grouped in a variety of ways. 3) Pupils will know how to use classification keys to help group, identify and name a variety of living things in their local and wider environment. Hinterland Knowledge • Pupils will know that environments can change and that this can sometimes pose dangers to living things.	Recap and Revisit During this term, the pupils will revisit and explore the Science Units studied throughout the year, engaging with practical experiments, investigations and inquiries surrounding the concepts, knowledge and skills studied, supporting the retention of core knowledge into pupils' long-term memory.

• Pupils will know that household devices and appliances run on electricity. Some plug in to the mains and others run on batteries. Skills • Pupils will develop being able to create different circuits. • Pupils will develop being able to hypothesise if a circuit works or doesn't. • Pupils will identify the different parts that are needed to create a successful circuit. identify / recognise / describe / observe / recall / compare / contrast / infer / sequence / summarise / categorise / reason / interpret / synthesise / explain / justify / conclude / judge / evaluate / critique / empathise / hypothesise Working Scientifically Skills • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • reporting on findings from enquiries, including oral and written explanations,	• Pupils will know that environments change with the seasons; different living things can be found in a habitat at different times of the year. • Pupils will know that environments may change naturally e.g. through flooding, fire, earthquakes etc. Humans also cause the environment to change. This can be in a good way (i.e. positive human impact, such as setting up nature reserves) or in a bad way (i.e. negative human impact, such as littering). Skills • Pupils will develop being able to recognise that the habitat change will cause different living things to thrive or suffer. • Pupils will develop being able to categorise different living things into groups depending on similarities and differences. identify / recognise / describe / observe / recall / compare / contrast / infer / sequence / summarise / categorise / reason / interpret / synthesise / explain / justify / conclude / judge / evaluate / critique / empathise / hypothesise Working Scientifically Skills	

displays or presentations of results and conclusions • identifying differences, similarities or changes related to simple scientific ideas and processes ▪ using straightforward scientific evidence to answer questions or to support their findings. Wonder • *I wonder how my toaster works.* • *I wonder what different types of circuits I can create.* • *I wonder how this circuit is different to the other.* Experiences & Provocations • Pupils will experience the curriculum by: ○ Make a DIY solar oven. ○ Complete an appliance/electricity hunt around the school. Vocabulary - Tier 3 Subject Specific Electricity, circuit, battery, bulb, switch, buzzer, motor, conductor, insulator. Outdoor Science Create a human electricity circuit outdoors.	• asking relevant questions and using different types of scientific enquiries to answer them • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions ▪ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Wonder • *I wonder which animals hibernate in winter.* • *I wonder what animals we can classify in our local area.* Experiences & Provocations • Pupils will experience the curriculum by: ○ Trip to nature reserve. ○ Create a fictitious creature out of clay that would suit a particular habitat. Vocabulary - Tier 3 Subject Specific Classification, classification keys, environment, habitat, human impact, migrate, hibernate	

Finding conductors and insulators outside.	Outdoor Science ○ Create bug hotel. ○ Observe animals in their natural habitat.	

KS2 National Curriculum
Working Scientifically ▪ Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary ▪ Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate ▪ Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

- Identifying scientific evidence that has been used to support or refute ideas or arguments
- Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- Using test results to make predictions to set up further comparative and fair tests

Living Things and their habitats

Pupils should be taught to:

- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
- describe the life process of reproduction in some plants and animals

Animals including humans

Pupils should be taught to:

- describe the changes as humans develop to old age

Properties and changes of materials

Pupils should be taught to:

- compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- demonstrate that dissolving, mixing and changes of state are reversible changes
- explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda

Earth and Space

- Pupils should be taught to:
- describe the movement of the Earth and other planets relative to the sun in the solar system

- describe the movement of the moon relative to the Earth
- describe the sun, Earth and moon as approximately spherical bodies
- use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky

Forces

- Pupils should be taught to:
- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
- identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect

Year 5 Science Curriculum		
Autumn Term 1	Spring Term 1	Summer Term 1
Changing and Separating Materials Inquiry Question How do materials help us with our everyday lives? Core Knowledge 1. Pupils will know how materials are grouped together based on their properties – hardness, solubility, transparency, conductivity and their response to magnets. 2. Pupils will know that some materials will dissolve in liquid to form a solution. 3. Pupils will know how to recover a substance from a solution.	Living Things and their Habitats (Lifecycles) Inquiry Question How do the life cycles of living things differ? Core Knowledge 1. Pupils will know the characteristics of mammals, amphibians, insects and birds. 2. Pupils will know the differences in the life cycles of a mammal, an amphibian, an insect and a bird. 3. Pupils will know the life process of reproduction in some plants.	Animals including humans (Human Lifecycles) *…to be taught alongside PSHE.* Inquiry Question? What changes take place in the human body between birth to old age? Core Knowledge 1. Pupils will know the changes between birth and old age. 2. Pupils will know how there can be differences in timelines depending on the individual.

4. Pupils will know the difference between solids, liquids and gases and how to separate mixtures through filtering, sieving and evaporation. 5. Pupils will know how to complete a comparative and fair test to find the uses of everyday materials including metals, wood and plastic. 6. Pupils will know that dissolving, mixing and changes of state are reversible changes. 7. Pupils will know why some changes are not reversible and will result in new materials being formed. Hinterland Knowledge • Pupils will know what changes take place when acid is put onto bicarbonate of soda. • Pupils will know how heat affects a solution being formed. • Pupils will know why some changes are reversible and others are irreversible and will complete experiments to test this. Skills • Pupils will develop being able to compare and group. • Pupils will develop being able to describe. • Pupils will develop being able to reason. • Pupils will develop being able to explain.	4. Pupils will know the life process of reproduction in some animals. Hinterland Knowledge • Pupils will know why a platypus' reproduction is unusual. • Pupils will know the types of habitats that animals live in and why. • Pupils will know about the difference between people's lifecycles now and in the Middle Ages. Skills • Pupils will develop being able to describe. • Pupils will develop being able to compare and contrast. • Pupils will develop being able to identify. • Pupils will develop being able to summarise. • Pupils will develop being able to explain. Working Scientifically Skills • Pupils will develop being able to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	3. Pupils will know the changes that take place during puberty and why these changes happen. 4. Pupils will know the typical behaviours and changes that can be expected at each milestone. Hinterland Knowledge • Pupils will know the differences between males and females. • Pupils will know why everyone doesn't develop at the same time. Skills • Pupils will develop being able to describe. • Pupils will develop being able to sequence. • Pupils will develop being able to explain. Working Scientifically Skills • Pupils will develop being able to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Pupils will develop being able to identify scientific evidence that has been used to support or refute ideas or arguments

• Pupils will develop being able to observe. Working Scientifically Skills • Pupils will develop being able to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Pupils will develop being able to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Pupils will develop being able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Wonder • *I wonder what changes take place when acid is added to bicarbonate of soda…* • *I wonder how the temperature of tea affects how long it takes for a sugar cube to dissolve…* • *I wonder why some changes are reversible and others are irreversible…* • *I wonder what material is best for the sole of a trainer…*	• Pupils will develop being able to identify scientific evidence that has been used to support or refute ideas or arguments • Pupils will develop being able to report and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentation Wonder • *I wonder what habitat a (whichever animal) would like to live in…* • *I wonder which animals don't fit the classification categories correctly…* • *I wonder what's the difference between the lifecycle of an insect and a mammal…* • *I wonder how and why the lifecycle of a human has changed between now and the Middle Ages…* Experiences & Provocations Pupils will experience the curriculum by: ○ going on a trip to observe animals in their habitat ○ studying significant scientists - James Brodie of Brodie (Reproduction of Plants by	Wonder • *I wonder what different changes take place in males and females…* • *I wonder why some people develop at different rates…* • *I wonder who grows the fastest – boys or girls…* Experiences & Provocations Pupils will experience the curriculum by: ○ Studying key scientists - Dr Steve Jones (Geneticist), Prof Robert Winston (Human Scientist), ○ exploring science themed books - Hair in Funny Places (Babette Cole), Giant (Kate Scott), You're Only Old Once! (Dr. Seuss) Vocabulary - Tier 3 Subject Specific foetus, embryo, womb, gestation, baby, toddler, teenager, elderly, growth, development, puberty links to SRE Outdoor learning * *creating a habitat for a particular type of animal.*

Experiences & Provocations Pupils will experience the curriculum by: ○ studying key scientists - Spencer Silver, Arthur Fry and Alan Amron (Post-It Notes) Ruth Benerito (Wrinkle-Free Cotton) ○ exploring science themed books - Itch (Simon Mayo) and The BFG (Roald Dahl) Vocabulary - Tier 3 Subject Specific thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material hardness, solubility, transparency, conductivity, magnetic, evaporation, dissolving, mixing Outdoor Science * separating gravel and sand.	Spores), David Attenborough (Naturalist and Nature Documentary Broadcaster) ○ exploring science themed books - The Land of Neverbelieve (Norman Messenger) Vocabulary - Tier 3 Subject Specific life cycle, reproduce, sexual, sperm, fertilisers, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings, mammals, reproduction, insect, amphibian, bird, offspring classification, vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders (arachnid), snails (mollusc), worms, flowering and non-flowering, micro-organisms, organism, crustacean Outdoor science * looking at animals/bugs in our outdoor area.	
Autumn 2	**Spring 2**	**Summer 2**
Earth and Space Inquiry Question How does the movement of spherical bodies have an impact on us and our life on Earth?	Forces Inquiry Question What is the most powerful force? Core Knowledge	Recap and Revisit + Forces – pulleys and gears During this term, the pupils will revisit and explore the Science Units studied throughout the year, engaging with practical experiments,

Core Knowledge 1. Pupils will know the movement of the Earth, and other planets, relative to the Sun in the solar system. 2. Pupils will know the movement of the Moon relative to the Earth. 3. Pupils will know the Sun, Earth and Moon are approximately spherical bodies. 4. Pupils will know how the Earth's rotation explains day and night. 5. Pupils will know why the Sun looks like it moves across the sky. Hinterland Knowledge • Pupils will know the different planets in the solar system. • Pupils will know the order that the planets are away from the sun. • Pupils will know the differences between planets. • Pupils will know how the space race affected society. • Pupils will know about the shape of the moon and why it looks like it changes. Skills • Pupils will develop being able to describe. • Pupils will develop being able to explain.	1. Pupils will know how unsupported objects fall towards the Earth because of gravity acting between the Earth and the falling object. 2. Pupils will know the effect of air resistance that acts between moving surfaces. 3. Pupils will know the effects of water resistance acting between moving surfaces. 4. Pupils will know the effects of friction that acts between moving surfaces. 5. Pupils will know how mechanisms work allowing a smaller force to have a greater effect – levers, pulleys and gears. Hinterland Knowledge • Pupils will know how to use a newton meter effectively. • Pupils will know how to complete a fair test. • Pupils will know about key scientists and ideas around forces. Skills • Pupils will develop being able to explain. • Pupils will develop being able to identify. • Pupils will develop being able to recognise.	investigations and inquiries surrounding the concepts, knowledge and skills studied, supporting the retention of core knowledge into pupils' long-term memory.

• Pupils will develop being able to compare and contrast. • Pupils will develop being able to reason. Working Scientifically Skills • Pupils will develop being able to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Pupils will develop being able to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Pupils will develop being able to identify scientific evidence that has been used to support or refute ideas or arguments • Pupils will develop being able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Wonder • *I wonder what the different planets in our solar system are?*	• Pupils will develop being able to hypothesise. • Pupils will develop being able to observe. • Pupils will develop being able to interpret. Working Scientifically Skills • Pupils will develop being able to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Pupils will develop being able to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Pupils will develop being able to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Pupils will develop being able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations	

• *I wonder how the planets are arranged in the solar system?* • *I wonder what the difference is between the planets?* • *I wonder which people were involved in finding out about the solar system?* • *I wonder why the moon changes shape?* Experiences & Provocations Pupils will experience the curriculum by: ○ studying key scientists - Claudius Ptolemy and Nicolaus Copernicus (Heliocentric vs Geocentric Universe), Neil Armstrong (First man on the Moon), Helen Sharman (First British astronaut), Mae Jemison (First Black female astronaut), Tim Peake (First British ESA astronaut) ○ exploring science themed books - The Skies Above My Eyes (Charlotte Guillain & Yuval Zommer), Hidden Figures, George's Secret Key to the Universe (Lucy and Stephen Hawking with Christophe Galfard), The Way Back Home (Oliver Jeffers) Vocabulary - Tier 3 Subject Specific	• Pupils will develop being able to use test results to make predictions to set up further comparative and fair tests Wonder • *I wonder how to test the force on an object...* • *I wonder how to make my experiment as accurate as possible…* • *I wonder how gravity was discovered.* • *I wonder which surface area will make the best parachute…* • *I wonder how to create a machine to support a heavy weight – using pulleys, levers and gears...* Experiences & Provocations Pupils will experience the curriculum by: ○ studying key scientists - Galileo Galilei (Gravity and Acceleration), Isaac Newton (Gravitation), Archimedes of Syracuse (Levers), John Walker (The Match) ○ exploring science themed books - The Enormous Turnip (Katie Daynes), Leonardo's Dream (Hans de Beer), The Aerodynamics of Biscuits (Clare Helen Welsh) ○ designing and writing up science experiments Vocabulary - Tier 3 Subject Specific	

Earth, sun, moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune) spherical, solar system, rotates, rotation star, orbit, planets, axis, day, night, phases of the moon, star, constellation, sphere, revolve, sundials Outdoor science * create shadow experiments	Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears Outdoor learning * look at different surface areas – gravel, grass, sand, tarmac * explore how friction differs depending on the surface.	

KS2 National Curriculum
Working Scientifically ▪ Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary ▪ Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate ▪ Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs ▪ Identifying scientific evidence that has been used to support or refute ideas or arguments ▪ Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations ▪ Using test results to make predictions to set up further comparative and fair tests

Living Things and their Habitats

Pupils should be taught to:

- describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals
- give reasons for classifying plants and animals based on specific characteristics

Animals including humans

Pupils should be taught to:

- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
- describe the ways in which nutrients and water are transported within animals, including humans

Evolution and Inheritance

Pupils should be taught to:

- recognise that living things have changed over time and that fossils provide information about living things that inhabited Earth millions of years ago
- recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

Light

Pupils should be taught to:

- recognise that light appears to travel in straight lines
- use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye
- explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
- use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

Electricity

Pupils should be taught to:

- associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit

- compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
- use recognised symbols when representing a simple circuit in a diagram

Year 6 Science Curriculum		
Autumn Term	Spring Term	Summer Term
Light Inquiry Question What would the world look like without light? Core Knowledge 1. Pupils will know how light appears to travel in straight lines. 2. Pupils will know how objects are seen because they give out or reflect light. 3. Pupils will know how we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. 4. Pupils will know how shadows are formed. 5. Pupils will know why shadows have the same shape as the objects that cast them. Hinterland Knowledge • Pupils will know that different materials have different levels of reflection.	Evolution and Inheritance Inquiry Question Is Charles Darwin the greatest Scientist in history? *…compare to Newton, Einstein, hidden figure scientists* Core Knowledge 1. Pupils will know how living things have changed over time. 2. Pupils will know how fossils provide information about living things that inhabited the Earth millions of years ago. 3. Pupils will know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. 4. Pupils will know how animals and plants are adapted to suit their environments. 5. Pupils will know how adaptation may lead to evolution.	Animals including humans. Inquiry Question What damage can I do to my body and organs if I don't keep them healthy? Core Knowledge 1. Pupils will know the name and be able to identify the main parts of the circulatory system. 2. Pupils will know the functions of the heart, blood vessels and blood. 3. Pupils will know the impact of diet, exercise, drugs and lifecycle on the body's functions. 4. Pupils will know how nutrients and water are transported within animals, including humans. Hinterland Knowledge • Pupils will know how the heart rate changes during exercise.

• Pupils will know the colour of light. • Pupils will know how the brightness of places is affected by the environment around it. Skills • Pupils will develop being able to recognise. • Pupils will develop being able to explain. • Pupils will develop being able to summarise. • Pupils will develop being able to observe. • Pupils will develop being able to justify. Working Scientifically Skills • Pupils will develop being able to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Pupils will develop being able to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Pupils will develop being able to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	Hinterland Knowledge • Pupils will know how the skeletons of apes, humans and Neanderthals are similar and different. • Pupils will know why animals eat particular foods based on their mouths/beaks. • Pupils will know how Charles Darwin's discoveries developed thinking around Evolution. Skills • Pupils will develop being able to recognise. • Pupils will develop being able to identify. • Pupils will develop being able to reason. • Pupils will develop being able to explain. • Pupils will develop being able to critique. Working Scientifically Skills • Pupils will develop being able to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Pupils will develop being able to identify scientific evidence that has been used to support or refute ideas or arguments	• Pupils will know how sleep affects the body's functions. • Pupils will know the effects of different microorganisms on their body. Skills • Pupils will develop being able to describe. • Pupils will develop being able to identify. • Pupils will develop being able to interpret data/results. • Pupils will develop being able to recognise. Working Scientifically Skills • Pupils will develop being able to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Pupils will develop being able to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Pupils will develop being able to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

• Pupils will develop being able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Pupils will develop being able to use test results to make predictions to set up further comparative and fair tests Wonder • *I wonder why some materials are more reflective than others…* • *I wonder what colour light is…* • *I wonder if the longer a light bulb is on affects the temperature…* • *I wonder whether all areas of the school are as bright as each other... Is there a pattern…* Experiences & Provocations Pupils will experience the curriculum by: ○ studying key scientists - Thomas Young (Wave Theory of Light), Ibn al-Haytham (Alhazen) (Light and our Eyes), Percy Shaw(The Cats Eye), Albert Einstein ○ exploring science themed books - Letters from the Lighthouse (Emma Carroll), The Gruffalo's Child (Julia Donaldson), The King	• Pupils will develop being able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Wonder • *I wonder how the skeletons of apes, humans and Neanderthals are similar and different…* • *Is there a pattern between the size and shape of a bird's beak and the food it will eat…* • *I wonder how Charles Darwin's visit to the Galapagos islands affected his discoveries...* Experiences & Provocations Pupils will experience the curriculum by: ○ studying key scientists - Charles Darwin and Alfred Russel Wallace (Theory of Evolution by Natural Selection), Jane Goodall (Chimpanzees) ○ exploring science themed books - One Smart Fish (Christopher Wormell), The Molliebird (Jules Pottle), Our Family Tree (Lisa Westberg Peters), Moth (Isabel Thomas) Vocabulary - Tier 3 Subject Specific	• Pupils will develop being able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Pupils will develop being able to use test results to make predictions to set up further comparative and fair tests Wonder • *I wonder how exercise affects my heart rate and pulse…* • *I wonder whether the type of exercise I do has an effect on my pulse and heart rate...* • *I wonder how sleep affects the body's functions...* • *I wonder how different microorganisms affect the body… Are they always harmful…* Experiences & Provocations Pupils will experience the curriculum by: ○ studying key scientists - Justus von Liebig (Theories of Nutrition and Metabolism), Sir Richard Doll (Linking Smoking and Health Problems), Leonardo Da Vinci(Anatomy) ○ exploring science themed books - Pig-Heart Boy (Malorie Blackman), Skellig (David

Who Banned the Dark (Emily Haworth-Booth), You're Only Old Once! (Dr. Seuss), On a beam of light Vocabulary - Tier 3 Subject Specific refraction, reflection, light, spectrum, rainbow, colour, translucent, opaque, block, shadow, reflective, dark/darkness, names of light sources e.g. torch, transparent Outdoor learning * light and shadows in different environments - wooded areas, places without any shade etc.	offspring, sexual reproduction, vary/variation, characteristics, suited, adapted, environment, inherited, species, fossils, adapted/adaptation, evolution, genetics, inherit/inheritance Outdoor learning * why do certain plants grow in particular areas? Look at more wooded areas and areas that get the most sunlight.	Almond), A Heart Pumping Adventure (Heather Manley) Vocabulary - Tier 3 Subject Specific heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle, circulatory system, veins, arteries, oxygenated, deoxygenated, valve, exercise, respiration Outdoor science * create an experiment surrounding heart rate and exercise.
Autumn 2	**Spring 2**	**Summer 2**
Living things and their habitats. Inquiry Question How do taxonomists classify over 8.7 million species? Core Knowledge	Electricity Inquiry Question? Core Knowledge 1. Pupils will know how the brightness of a lamp or the volume of a buzzer is associated with the number and voltage of cells used in a circuit.	Recap and Revisit During this term, the pupils will revisit and explore the Science Units studied throughout the year, engaging with practical experiments, investigations and inquiries surrounding the concepts, knowledge and skills studied, supporting the retention of core knowledge into pupils' long-term memory.

1. Pupils will know how living things are classified into broad groups according to common observable characteristics. 2. Pupils will know how living things are classified based on similarities and differences. 3. Pupils will know how to give reasons for classifying plants and animals based on specific characteristics. Hinterland Knowledge • Pupils will know how to classify micro-organisms. • Pupils will know how to classify animals and plants in our local area. Skills • Pupils will develop being able to describe. • Pupils will develop being able to observe. • Pupils will develop being able to justify. • Pupils will develop being able to classify. • Pupils will develop being able to justify. • Pupils will develop being able to categorise. Working Scientifically Skills • Pupils will develop being able to record data and results of increasing complexity using scientific diagrams and labels, classification	2. Pupils will know how to create a working circuit. 3. Pupils will know how to compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on-off switch. 4. Pupils will know the recognised symbols to use when representing a simple circuit in a diagram. Hinterland Knowledge • Pupils will know why some fruits can be used instead of cells. • Pupils will know how the world's understanding of electricity has changed over time. Skills • Pupils will develop being able to compare. • Pupils will develop being able to justify. • Pupils will develop being able to recognise symbols. • Pupils will develop being able to evaluate. • Pupils will develop being able to hypothesise. Working Scientifically Skills	

keys, tables, scatter graphs, bar and line graphs • Pupils will develop being able to identify scientific evidence that has been used to support or refute ideas or arguments • Pupils will develop being able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations Wonder • *I wonder what the most common invertebrate on the school field is…* • *I wonder how to classify micro-organisms…* • *I wonder how to classify the plants around me…* Experiences & Provocations Pupils will experience the curriculum by: ○ going on a trip to see animals in their habitat ○ studying key scientists - Carl Linnaeus (Identifying, Naming and Classifying Organisms), Maria Merian (Butterflies) ○ exploring science themed books - Beetle Boy(M G Leonard), Insect Soup(Barry Louis Polisar), Fur and Feathers (Janet Halfmann)	• Pupils will develop being able to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Pupils will develop being able to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Pupils will develop being able to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Pupils will develop being able to identify scientific evidence that has been used to support or refute ideas or arguments • Pupils will develop being able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Pupils will develop being able to use test results to make predictions to set up further comparative and fair tests Wonder	

Vocabulary - Tier 3 Subject Specific life cycle, reproduce, sexual, sperm, fertilisers, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings, mammals, reproduction, insect, amphibian, bird, offspring classification, vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders (arachnid), snails (mollusc), worms, flowering and non-flowering, micro-organisms, organism, crustacean Outdoor science * look at different bugs in the forest school area. * classify them into different categories. * which area of the outdoor space would a ….... most like to live in?	• *I wonder whether all fruit can be used as a cell…* • *I wonder how the world's electricity has changed over time…* Experiences & Provocations Pupils will experience the curriculum by: ○ studying key scientists - Alessandro Volta (Electrical Battery), Nicola Tesla (Alternating Currents), Blackout (John Rocco), Hitler's Canary (Sandi Toksvig) Vocabulary - Tier 3 Subject Specific circuit, symbols, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage, wires, switches, series, conductors, volume, insulators, amps, volts, voltage, current, appliance/device, electrical circuit, series circuit, bright/dim, resistance	