

## Ruskington Chestnut Street Science Curriculum Overview



### Long Term Plan 2025 – 2026

	Aut1	Aut2	Spr1	Spr2	Sum1	Sum2
EYFS F1	<p>In the EYFS1, Children will explore the natural world around them by making observations and recording observations by drawing or taking pictures of animals and plants. They will look at similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Children will explore the important processes and changes in the natural world around them, including the seasons and changing states of matter.</p> <p>Use senses to understand there are important processes and changes that happen (heating, melting, freezing)</p> <ul style="list-style-type: none"> <li>- Understand the effect of seasons on the natural world, discussing when and how things grow</li> <li>- How to plant seeds and look after living plants to help them grow</li> <li>- That science helps us to develop equipment that makes our lives easier (and more fun), cameras, cars, bouncy castles, phones, technology in the home, etc</li> </ul>					
EYFS F2	Season – Autumn Our Body	Season – Winter Animals	Changing states Senses	Season – Spring Materials	Season -Summer Plants Animals	Forces Animals Materials
Year 1	Plants	Animals including humans	Uses of Everyday Materials	Uses of Everyday Materials	Living things and their habitats	Living things and their habitats
Year 2	Plants	Animals including humans	Uses of Everyday Materials	Uses of Everyday Materials	Living things and their habitats	Living things and their habitats
Year 3/4	Animals including humans	Sound	States of matter	Living things and their habitats	Electricity	
Year 4/5	Forces	Earth and space	Electricity	Properties and changes of material	Animals including Humans	Living Things and Their Habitats
Year 5/6	Forces	Animals including Humans (Y5/6)	Electricity (y6)	Evolution and Inheritance (Y6)	Living Things and Their Habitats (Y5/6)	Light (Y6)

	Aut1	Aut2	Spr1	Spr2	Sum1	Sum2
<b>EYFS</b> <b>F1</b>	Use senses to understand there are important processes and changes that happen (heating, melting, freezing. Solid + liquid) - Understand the effect of seasons on the natural world, discussing when and how things grow - How to plant seeds and look after living plants to help them grow - That science helps us to develop equipment that makes our lives easier (and more fun), cameras, cars, bouncy castles, phones, technology in the home, etc					
	Sparks curiosity and links to interests. Throughout the year F1 will use in the moment planning to follow the interest of the children. Will build on prior learning at appropriate moments in the year through adult led and child led opportunities and provision.					
	<u>Vocabulary and key concepts</u>					
	Seasons Key Vocab – season, spring, summer, autumn, winter, month, year, day, night, weather, cold, hot, warm Animals Including Humans Key Vocab – Head, body, arms, legs Plants Key Vocab – Trees, plants, flowers, vegetables, fruit, grow, water, change Materials Key Vocab – hard, soft, heavy, light <b>Key Concepts – Seasons, Animals, Plants, Materials,</b>					
	<u>Why this and why now?</u>					
<b>EYFS</b> <b>F2</b>	Builds on Prior learning in pre-school and understanding of themselves and what their body can do. Links to start of the year and exploring how we are all different but all human.  Seasonal time of year. Links to hibernation and what animals do during different seasons.	Links to seasonal time of the year with ice and snow. Builds on prior learning in pre-school around baking and how ingredients change. Builds on prior learning at start of the year about our body parts children explore what their specific body parts can do.  Seasonal time of the year. Children explore sunlight and how to make shade and shadows.	Seasonal time of the year. Builds on prior learning in pre-school understanding how to plant and look after seeds. We observe caterpillar life cycle in the classroom. Best time of year to grow sunflowers.  Children have a deeper understanding of forces by exploring forces in provision throughout the year. Children build on this by being able to explain forces. Building on the learning from throughout the year, pupils broaden their understanding of why we use specific materials.  Animals and young links to rand farm trip and sparks interest			
	What makes me, me? Facial Features, Body parts - brain, lungs, heart – how do humans grow? - Understand the effect of seasons on the natural world - What do some animals do in Autumn?	- Plant seeds and care for growing plants. - Understand the key features of the life cycle of a plant and an animal.  - Explore and talk about different forces they can feel. - Animals and their young - Best material for a boat?	Plant seeds and care for growing plants. - Understand the key features of the life cycle of a plant and an animal.  - Explore and talk about different forces they can feel. - Animals and their young - Best material for a boat?			

	<p>Animals including Humans Key vocab – head, nose, ear, shoulder, arm, elbow, wrist, hand, back, chest, hip, leg, knee, ankle, foot, sight, smell, touch, taste, hearing, fish, mammals, birds, wing, beak, tail, fin</p> <p>Seasons Key Vocab - season, spring, summer, autumn, winter, month, year, day, night, weather, cold, hot, warm, hibernation, nocturnal</p>	<p>Changing Materials Key Vocab – heating, freezing, melting, changing, shape</p> <p>Light and shadows Key Vocab – light, dark, shadow, change, shape, bright, dull, big, small</p>	<p>Plants Animals Including Humans</p> <p>Key Vocab - Trees, plants, flowers, vegetables, fruit, grow, water, change, seeds, life cycle, baby, adult</p> <p>Forces Materials Animals including Humans</p> <p>Key Vocab – push, pull, gravity, wind, spin, spring, bounce Milk, feeding, growing, nutrition Sink, float, heavy, light, hard, soft, soak</p>
	<p><b>Why this and why now?</b></p> <p>Autumn provides rich, real-world examples, autumn is full of visible plant changes: observing seasonal change, also seeds, nuts, berries and cones falling, great for discussing plant parts as roots can become visible as plants die back. -world examples, autumn is full of visible plant changes: observing seasonal change</p> <p>Healthy living links support early-year PSHE themes healthy eating, classroom routines, talking about healthy food choices understanding the role of exercise.</p>	<p><b>Why this and why now?</b></p> <p>Supports DT projects, building structures, making vehicles, requires children to make choices about materials, vocabulary (rigid, flexible, absorbent, strong), knowledge of properties, and experience testing materials right when they need it.</p>	<p><b>Why this and why now?</b></p> <p>The natural world is at its most active and visible, plants are in full growth, insects and minibeasts are abundant, birds and small animals are easy to observe, microhabitats like logs, bushes and long grass are thriving. There is a natural follow-on from plants learning earlier in the year, plants provide food and shelter.</p>
Y1/2	<p>Plants - Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>Animals, including humans - Notice that animals, including humans, have offspring which grow into adults</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>Plants Key Vocab – seeds, bulbs, bean, shoot, seedlings, healthy growth, light, water, temperature, germinate, seed dispersal, reproduce, lifecycle</p>	<p>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.</p> <p>Uses of everyday materials - Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p> <p>Everyday Materials Key Vocab – material, properties, brick, fabric, wood, plastic, glass, metal, rubber, paper, cotton, chalk, tin, leather, elastic, foil, property, solid, waterproof, absorbent,</p>	<p>Living things and their habitats - Explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>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</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food</p> <p>Living Things and Their Habitats Key Vocab – living, not living, alive, dead, used to be alive, never</p>

	Animals Including Humans Key Vocab – survival, water, air, food, reproduce, adult, baby, offspring, hygiene, health, diet, exercise, food groups, protein, carbohydrates, fruit, vegetables, fats, sugar, salt	opaque, transparent, flexible, twist, squash, bend, stretch, push, pull, roll, slide, bounce, suitable, natural, manmade	alive, habitat, minibeast, microhabitat, woodland, meadow, hedgerow, pond, beck  Living Things and Their Habitats Key Vocab – food chain, consumer, producer, predator, prey, herbivore, carnivore, herbivore, camouflage
	<b>Why here? Why now?</b> Starting the year with something conceptually familiar helps children transition smoothly into lower KS2 expectations while introducing more challenging content, pupils have already met this topic in KS1.  Sound is one of the first “big” physics ideas children meet in KS2. Teaching it early gives a strong foundation for later Y3/4 topics such as States of Matter (vibrations in particles), Electricity, or Forces and Magnets. It revisits and strengthens skills learned in KS1—making observations, asking questions, performing test.	<b>Why here? Why now?</b> Weather is more suitable for practical investigations as states of matter relies heavily on temperature dependent experiments. Temperatures begin to rise, making melting, evaporating, and condensation easier to observe naturally. <i>-dependent experiments.</i>  Positioned at this time of year provides authentic, first-hand examples for children to observe, making the learning far more concrete and memorable.	<b>Why here? Why now?</b> Electricity can pose abstract reasoning, and safety demands on pupils as a hands-on unit of work, it brings strong momentum and investigative work for the end of year. -on
<b>Year 3/4</b>	Animals, including humans - 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  Sound - 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.	States of matter - 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.  Living things and their habitats. - 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.	Electricity - 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 a lamp lights in a simple series circuit.  Recognise some common conductors and insulators, and associate metals with being good conductors.
	<b>Vocabulary</b> Functions, digestive system, humans, teeth, humans, food chains, producers, predators and prey  Sound, vibrating, vibrations, travel, ear, pitch, object, volume, fainter, source.	<b>Vocabulary</b> Materials, solids, liquids, gases, observe, materials, heated, cooled, measure, temperature, degrees Celsius (°C), evaporation, condensation, water cycle.	<b>Vocabulary</b> Appliance, electricity, simple series electrical circuit, cells, wires, bulbs, switches, buzzers, lamp, simple series circuit, switch, common, conductors, insulators, metals, conductors.

		Living things, grouped in a variety of ways, classification, keys, group, identify, environment.	
Year 4/5	<p><b>Why here? Why now?</b></p> <p>Forces is a core physics topic that underpins many later units e.g., electricity, mechanisms, Earth &amp; space, materials. As the days shorten, it gets darker earlier, supporting the unit Earth and Space, making skywatching activities more accessible - watching activities more accessible. which supports the curriculum focus on “observing over time”, and still be able to observe shadow investigations, sun position in the sky.</p>	<p><b>Why here? Why now?</b></p> <p>Electricity fits well after Forces and fits well before materials with conductors and insulators. Follows on from Y3/4 concepts of melting, evaporating, and condensation easier to observe natural as children move into filtration, dissolving and reversible and irreversible changes.</p>	<p><b>Why here? Why now?</b></p> <p>Follows on from Y3/4 concepts of melting, evaporating, and condensation as children move into filtration, dissolving and reversible and irreversible changes. Teaching changes in humans in the summer allows the opportunity to integrate PSHE and science without duplication and supports a coherent teaching sequence.</p> <p>Teaching living things and their habitats in the summer term offers the best real world biological experiences, as this relies heavily on observing living things, and the summer term provides this through abundant plant growth, visible insects and pollinators, birds nesting and rearing young.</p> <p>Children can see life cycles happening in real time, which dramatically improves understanding and engagement. This hands-on authenticity is much harder to create in other seasons. -on authenticity is much harder to create in autumn or winter.</p>
	<p>Forces - explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</p> <p>Earth and Space - describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>describe the movement of the Moon relative to the Earth</p> <p>describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky.</p>	<p>Electricity - 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.</p> <p>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.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>Properties and changes of material - 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</p> <p>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p>	<p>Properties and changes of material - Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>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</p> <p>Animals including humans - Describe the changes as humans develop to old age.</p> <p>Living things and their habitats - describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Describe the life process of reproduction in some plants and animals.</p>

		<p>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>demonstrate that dissolving, mixing and changes of state are reversible changes</p>	
	<p style="text-align: center;"><b>Vocabulary</b></p> <p>Earth, force, gravity, air resistance, water resistance and friction, mechanism, levers, pulleys and gears.</p> <p>Earth, planets, Sun, solar system, Moon, approximately, spherical, rotation, day and night.</p>	<p style="text-align: center;"><b>Vocabulary</b></p> <p>Electricity, appliance, electrical appliance, non-electrical appliance, battery power, main power, circuit, series, cell, battery, wire, bulb, switch, break in circuit, conductor, insulator, flows, device, components, complete, incomplete</p> <p>Materials, properties, hardness, solubility, transparency, conductivity (electrical and thermal), magnets</p> <p>Materials, dissolve, liquid, solution, substance, solution, solids, liquids and gases, mixtures, separated, filtering, sieving and evaporating, changes of state, reversible</p>	<p style="text-align: center;"><b>Vocabulary</b></p> <p>Materials, properties, hardness, solubility, transparency, conductivity (electrical and thermal), magnets</p> <p>Materials, dissolve, liquid, solution, substance, solution, solids, liquids and gases, mixtures, separated, filtering, sieving and evaporating, changes of state, reversible</p> <p>Life cycle, mammal, amphibian, insect, bird, process, reproduction, plants, animals.</p>
<b>Year 5/6</b>	<p style="text-align: center;"><b>Why here? Why now?</b></p> <p>Pupils arrive with prior knowledge by y5/6, children have already studied: pushes and pulls (ks1) magnets and magnetic materials (y3) friction basics (y3/4) so pupils are able to focus on: deeper comparisons, prediction using poles, classifying materials</p> <p>Animals including humans provides a strong foundation for later topics such as evolution &amp; inheritance, living things and their habitats, microorganisms it makes the biology curriculum coherent and progressive.</p>	<p style="text-align: center;"><b>Why here? Why now?</b></p> <p>Electricity fits well between two biology units in y5/6 placing electricity in spring ensures a strong conceptual break between two biology-heavy terms, balanced coverage of scientific disciplines across the year.</p> <p>Spring term offers the best cognitive timing for an abstract concept as evolution and inheritance are among the most abstract ideas in primary science. They require pupils to think about deep time, fossil evidence, variation within species, adaptation tackling these challenging concepts in spring maximises allows for opportunity to revisit in the summer term.</p>	<p style="text-align: center;"><b>Why here? Why now?</b></p> <p>Summer provides the best conditions for real life biological observation these units rely heavily on observing plants, animals, insects, and habitats offering the richest environment for this insects (bees, butterflies, beetles) are active, amphibians (frogs, newts) are easier to spot nearer water, microhabitats (logs, hedgerows, grass) can be explored safely this transforms the unit from theoretical learning into authentic, hands-on biology, which significantly improves understanding and retention.-life biological observation these units rely heavily on observing plants, animals, insects, and habitats offering the richest environment for this insects (bees, butterflies, beetles) are active, amphibians (frogs, newts) are easier to spot nearer water, microhabitats (logs, hedgerows, grass) can be explored safely this transforms the unit from theoretical learning into authentic, hands-on biology, which significantly improves understanding and retention.</p> <p>Summer provides the best natural conditions for light investigations the light unit relies heavily on outdoor observation and strong lighting conditions, summer term offers long daylight hours, more reliable sunshine, dry weather for outdoor experiments, strong contrast between light and dark areas this makes investigations clearer, more engaging, and more accurate.</p>

<p>Forces – Compare how things move on different surfaces notice that some forces need contact between 2 objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others</p> <p>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</p> <p>Describe magnets as having 2 poles predict whether 2 magnets will attract or repel each other, depending on which poles are facing</p> <p>Animals including Humans - Describe the changes as humans develop to old age.</p> <p>Animals including Humans - Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans</p>	<p>Electricity - Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches</p> <p>Use recognised symbols when representing a simple circuit in a diagram</p> <p>Evolution and Inheritance - Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p>	<p>Living Things and Their Habitats - Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Describe the life process of reproduction in some plants and animals.</p> <p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics.</p> <p>Light - Recognise that light appears to travel in straight lines.</p> <p>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.</p> <p>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.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>
<p style="text-align: center;"><b>Vocabulary</b></p> <p>Forces and Magnets Key Vocab – pull, push, strong, weak, force, contact, surface, friction, smooth, rough, resistance, magnetic, attract, repel, north pole, south pole</p> <p>Animals Including Humans Key Vocab – womb, foetus, embryo, gestation, baby, toddler, teenager, elderly, growth, development, puberty, infancy, childhood, adolescence, adulthood, prenatal, hormones</p> <p>Function circulatory system, heart, valve, blood vessel, tissue, organ, vein, artery, red blood cells, white blood cells, platelet, plasma, lungs, transport, oxygenated, deoxygenated.</p>	<p style="text-align: center;"><b>Vocabulary</b></p> <p>Electricity Key Vocab - lamp/bulb, cell, open switch, closed switch, buzzer, battery, volts. Voltage, voltmeter, ammeter, circuit, electricity, generate, dimmer, brighter</p> <p>Evolution and Inheritance Key Vocab – adaptation, adapt, change, evolution, fossils, evolve, inheritance, inherit, acquire, characteristic, reproduction, genetic, survival, environment, parents, offspring, siblings, identical</p>	<p style="text-align: center;"><b>Vocabulary</b></p> <p>Living Things and their Habitats Key Vocab - characteristic, classification key, classify, category, kingdom, Carl Linnaeus, taxonomist, organism, micro-organism, life process, reproduction, offspring,</p> <p>Light Key Vocab - light source, travels, straight line, angle of reflection, angle of incidence, periscope, spectrum, shadows, opaque, transparent, translucent</p>