St Antony's Science Curriculum - Overview

Curious, Loving, Independent, Creative, Knowledgeable

(Curriculum Drivers: Global Goals, Laudato Si', Catholic Social Teaching, Creativity)

Year	Autumn		Spring		Summer	
Nursery	**Enquiry Question/topic** **All About Me**		**Enquiry Question/topic** **People Who Help Us** **All about Growing**		**Enquiry Question/topic** **All about Clothes** **All about Toys**	
	Development Matters Explore materials with different properties. Explore natural materials, indoors and outside Explore and respond to different natural phenomena in their setting and on trips		Development Matters Use all their senses in hands on exploration of natural materials Explore how things work Talk about what they see, using a wide vocabulary Plant seeds and care for growing plants Understand the key features of the life cycle of a plant and an animal Begin to understand the need to respect and care for the natural environment and all living things		Development Matters Talk about the differences between materials and changes they notice Explore collections of materials with similar and/or different properties Explore and talk about different forces they can feel YR: Explore the natural world around them YR: Describe what they see, hear and feel whilst outside	

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	Vocabulary: **Humans**: grow, change, baby, toddler, child, adult, old person, smell, taste, touch, feel, hear, see, blind, deaf **Living things and their habitats:** Seasons, Winter, snow, natural, plant, animal, leaves, seeds, conkers, acorns, twigs, bark, shells, feathers, pebbles, stones, same, different, pattern **Sound**: sound, noise, loud, quiet, high, low, music, bang, blow, pluck, soft, hard, fast, slow, names of instruments		**Vocabulary:** **Life cycle**: egg, chick, bird, caterpillar, cocoon, chrysalis, butterfly, frog spawn, tadpole, froglet, frog, grow, change, die, names of animals and their young, fur, feathers, scales, tail, wings, beak, claws, paws, hooves, swim, walk, run, jump, jump, fly, patterns, spots, stripes **Plants**: plant, leaf, stem, trunk, branch, root, bark, flower, petal, seed, berry, fruit, vegetable, bulb, plant, hole, dig, water, weed, grow, shoot, die, dead, soil		**Vocabulary:** **Materials**: mix, stir, cook, hot, oven, microwave, change, burn, melt, hard, runny, set, freeze, freezer, cold, blended, hard, soft, bendy, stiff, wobbly, wood, plastic, paper, card, fabric **Electricity:** battery, plug, socket, electricity, wire, sound, light, move **Light:** light, torch, bulb, lamp, spotlight, shiny, bright, brighter, brightest, Sun, shine, glow, mirror **Forces:** object, float, sink, water, up, down, top, bottom, push, pull, magnet, spring, squash, bend, twist, stretch, turn, spin, smooth, rough, fast, slow	
Reception	**Enquiry Question/topic** **Ourselves and Our Family (Bodies and Senses)** **Light and Dark (Seasons, weather and Space)**		**Enquiry Question/topic** **People Who Help Us (Health and Safety, Forces)** **Food**		**Enquiry Question/topic** **Animals (Animals, insects and vertebrates)**	
	Stautory Framework for EYFS ELG: Explore the natural world around them. ELG: Describe what they see, hear and feel whilst outside. ELG: Children understand some important processes and changes in the natural world around them, including the seasons and changing states of matter		Stautory Framework for EYFS ELG: Recognise some environments that are different to the one in which they live Describe what they see, hear and feel whilst outside. ELG: They 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		Stautory Framework for EYFS ELG: Children explore the natural world around them, making observations and drawing pictures of animals and plants	

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			ELG: Make comments about what they have heard and ask questions to clarify their understanding ELG: Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps			
	Vocabulary: **Humans:** hair (black, brown, dark, light, blonde, ginger, grey, white, long, short, straight, curly), eyes (blue, brown, green, grey), skin (black, brown, white),big/tall, small/short, bigger/smaller, baby, toddler, child, adult, old person, old, young, brother, sister, mother, father, aunt, uncle, grandmother,grandfather, cousin, friend, family, boy, girl, man, woman **Seasons:** spring, summer, autumn, winter, seasons, sunny, cloudy, hot, warm, cold, shower, raining, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, windy, rainbow, animals, young, plants, flowers		**Vocabulary:** **Space:** Sun, Moon, Earth, star, planet, sky, day, night, space, round, light, heavy, fall, bounce, float, rise, fall, air **Light:** Sun, sunny, light, shadow, shady, clouds, torch, see-through, non-see through, source, light source **Materials:** ice, water, frozen, icicle, snow, melt, wet, cold, slippery, smooth, big, bigger, biggest, smaller, smaller, smallest, hard, soft, bendy, rigid, wood, plastic, paper, card, metal, strong, weak, hot, apply heat, waterproof, soggy, not waterproof, best, change, change back		**Vocabulary:** **Sound:** sound, noise, listen, hear, music, voices, bird song, traffic, sirens, thunder, high, low, loud, quiet, soft, volume, crackle, thunder, hum, buzz, roar **Animals:** names of animals, live, on land, in water, jungle, desert, North Pole, South Pole, sea, hot, cold, wet, dry, snow, ice **Living things and their habitats**: plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting environment e.g. beach, forest **Forces:** float, sink, up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest, wind, air, water, blow	

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Year 1	**Enquiry Question/topic** **Seasonal changes** **Animals including Humans 1 (All About Me)**		**Enquiry Question/topic** **Seasons-Spring*** revisit according to seasonal changes **Exploring Everyday Materials 1** **Animals including Humans (All About Animals)**		**Enquiry Question/topic** **Seasons-Summer*** revisit according to seasonal changes **Plants** **Exploring Everyday Materials 2**	
	NC Programme of Study: • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense		NC Programme of Study: • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies • 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 • 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		NC Programme of Study: • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies • 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 • 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	

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	Vocabulary: **Seasonal changes** Weather (sunny, rainy, windy, snowy etc.) • Seasons (winter, summer, spring, autumn) • Sun, sunrise, sunset, day length **Animals:** Body parts - head, arm, leg, elbow, torso, stomach, waist, hip thigh, finger, shin, toe, foot, wrist, armpit, neck, shoulder, throat, knee Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue		**Vocabulary:** **Materials**: Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through **Animals**: Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves • Names of animals experienced first-hand from each vertebrate group		**Vocabulary:** **Plants:** leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud. Names of trees in the local area (oak, horse chestnut, ash, elm, maple) Names of garden and wild flowering plants in the local area (dandelion, daffodil, daisy, tulip, crocus) **Materials:** Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through	
	Outcomes: Lesson 1: Understand there are four seasons Lesson 2: Understand the changes that take place in autumn Lesson 3: Understand the changes that take place in winter Lesson 4: Understand the changes that take place in spring Lesson 5: Understand the changes that take place in summer Lesson 6: Investigate how you can measure rainfall Lesson 7: Discover the basic parts of the human body Lesson 8: Learn about eyes and sight Lesson 9: Learn about ears and hearing Lesson 10: Explore the tongue and taste Lesson 11: Explore the sense of touch		**Outcomes:** Lesson 1: Identify and name a variety of everyday materials Lesson 2: Distinguish between an object and the material it is made from Lesson 3: Describe the properties of everyday materials Lesson 4: Identify objects that are natural and those that are manmade Lesson 5: Predict and identify if an object will float or sink Lesson 6: Explore which materials are best for different objects Lesson 7: Discover animal families Lesson 8: Learn about the differences between mammals and birds Lesson 9: Learn about the differences Between amphibians, reptiles and fish Lesson 10: Discover the types of food living things eat Lesson 11: Explore the difference between		**Outcomes:** Lesson 1: Understand that seeds grow into plants Lesson 2: Identify the basic parts of a plant and tree Lesson 3: Understand that different plants can grow in the same environment Lesson 4: Know the difference between deciduous and evergreen trees Lesson 5: Know that fruit trees and vegetables are varieties of plants Lesson 6: Record the growth of a plant Lesson 7: Build a structure strong enough to withstand wind Lesson 8: Build a waterproof structure Lesson 9: Understand the properties of glass and its uses Lesson 10: Understand that materials are used to create a variety of furniture Lesson 11: Explore a variety of fabrics and understand their different properties	

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	Lesson 12: Discover how your nose smells **Working Scientifically:** • Perform simple tests • Use their observations and ideas to suggest answers to questions • Gather and record data to help in answering questions. • Observe closely, using simple equipment • Identify and classify		wild animals and pets Lesson 12: Explain the characteristics of an animal **Working Scientifically:** • Asking simple questions and recognise that they can be answered in different ways • Perform simple tests • Use their observations and ideas to suggest answers to questions • Gather and record data to help in answering questions. • Observe closely, using simple equipment • Identify and classify		Lesson 12: Explain the uses of materials and why they are suitable **Working Scientifically:** • Asking simple questions and recognise that they can be answered in different ways • Perform simple tests • Use their observations and ideas to suggest answers to questions • Gather and record data to help in answering questions. • Observe closely, using simple equipment • Identify and classify	

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Year 2	**Enquiry Question/topic** **Everyday materials** **Plants**		**Enquiry Question/topic** **Living things and their Habitat** **Living Things and their Habitat around the world**		**Enquiry Question/topic** **Animals including humans -Growth** **Animals including humans – Life cycles**	
	NC Programme of Study: • 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 microhabitats • 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		NC Programme of Study: • 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 • 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 microhabitats		NC Programme of Study: • 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 • notice that animals, including humans, have offspring which grow into adults • 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	
	Vocabulary: **Living things in their habitat** •Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed •Names of local habitats e.g. pond, woodland etc.		**Vocabulary:** **Plants** Year 1 plus: light, shade, sun, warm, cool, water, grow, healthy **Living things in their habitat**		**Vocabulary:** **Animals including humans** Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), **Materials** Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard	

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	•Names of micro-habitats e.g. under logs, in bushes etc. **Animals including Humans** exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples – meat, fish, vegetables, bread, rice, pasta)		•Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed •Names of local habitats e.g. pond, woodland etc. •Names of micro-habitats e.g. under logs, in bushes etc.		Properties of materials – as for Year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing bend/bending, stretch/stretching	
	Outcomes: Lesson 1: Explore the differences between things that are living, dead and things that have never been alive Lesson 2: Identify and name a variety of plants and animals in a microhabitats Lesson 3: Design a suitable microhabitat where living things could survive Lesson 4: Find out what animals eat to survive in their habitats Lesson 5: Understand a food chain Lesson 6: Understand the journey food makes from the farm to the supermarket Lesson 7: Describe the needs of Animals for survival Lesson 8: Describe the needs of humans, for survival Lesson 9: Explore the importance of eating the right food Lesson 10: Describe what a healthy, balanced diet looks like Lesson 11: Investigate the impact of exercise on our bodies Lesson 12: Investigate the importance of hygiene		**Outcomes:** Lesson 1: Know the difference between seeds and bulbs Lesson 2: Design an experiment to find out what plants need to grow temperature in order to grow well Lesson 3: Describe what plants need to grow and stay healthy Lesson 4: Describe the life cycle of a plant Lesson 5: Observe and record the growth of plants over time Lesson 6: Understand that plants adapt to suit their environment Lesson 7: Learn about habitats Lesson 8: Appreciate that environments are constantly changing Lesson 9: Explore the rainforest and its problems Lesson 10: Describe life in the ocean Lesson 11: Explore the Arctic and Antarctic habitat Lesson 12: Create a model of a habitat		**Outcomes:** Lesson 1: Order the stages of the human life cycle Lesson 2: Describe the stages of a human life cycle Lesson 3: Identify the offspring and parent of an animal Lesson 4: Explore the life cycle of a chicken Lesson 5: Describe the life cycle of a butterfly Lesson 6: Explore the life cycle of a frog Lesson 7: Identify different materials and their uses Lesson 8: Understand how to select the right materials to build a bridge Lesson 9: Explore and test the stretchiness of materials Lesson 10: Understand that materials can change their shape by twisting, bending, squashing or stretching Lesson 11: Find out about Charles Macintosh and explore how materials are suitable for different purposes Lesson 12: Discover which materials change shape when making a road with John McAdam	

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	Working Scientifically: • Observe closely, using simple equipment • Perform simple tests • Identify and classify • Use their observations and ideas to suggest answers to questions • Gather and record data to help in answering questions. • Take measurements and record in the form of a graph		**Working Scientifically:** • Observe closely, using simple equipment • Perform simple tests • Identify and classify • Use their observations and ideas to suggest answers to questions		**Working Scientifically:** • Asking simple questions and recognise that they can be answered in different ways • Observe closely, using simple equipment • Perform simple tests • Identify and classify • Use their observations and ideas to suggest answers to questions • Gather and record data to help in answering questions.	
Year 3	**Enquiry Question/topic** **Rocks** **Animals including humans**		**Enquiry Question/topic** **Forces and Magnets** **Scientific Enquiry**		**Enquiry Question/topic** **Plants** **Light**	
	NC Programme of Study: • 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 • 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		NC Programme of Study: • 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		NC Programme of Study: • explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal • 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 • 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	

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	muscles for support, protection and movement				• 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	
	Vocabulary: **Rocks and soil** Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil **Animals including Humans** Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine		**Vocabulary:** **Forces and Magnets** 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 **Scientific enquiry** Scientific investigation, prediction, plausible, record, results, data, table, graph, conclusion, evidence, explanation, compare enquiry		**Vocabulary:** **Plants** Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal) transpiration, photosynthesis, carbon dioxide pollination, dispersal, xylem, phloem glucose **Light** Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous	
	Outcomes: Lesson 1: Explore the formation and properties of igneous rocks Lesson 2: Explore the formation and properties of sedimentary and metamorphic rocks Lesson 3: Weathering and the suitability of rocks for different purposes Lesson 4: Explore how water contributes to the weathering of rocks Lesson 5: Understand how fossils are		**Outcomes:** Lesson 1: Explore contact and noncontact forces Lesson 2: Compare how things move on different surfaces Lesson 3: Explore different types of magnets Lesson 4: Explore the properties of magnets and everyday objects that are magnetic Lesson 5: Understand that magnetic forces can act at a distance Lesson 6: Explore the everyday uses of magnets Lesson 7: How can a solar oven be made more effective: posing questions and writing predictions		**Outcomes:** Lesson 1: Compare the effect of different factors on plant growth Lesson 2: Identify and describe the functions of different parts of a flowering plant and how they are used in photosynthesis Lesson 3: Investigate the way in which water is transported within plants Lesson 4: Explore the part that flowers play in the life cycle of flowering plants Lesson 5: Understand the pollination process and the ways in which seeds are dispersed	

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	formed Lesson 6: Explore different types of Soil Lesson 7: Explore the 5 key food groups Lesson 8: Learn about the nutrition in the food we eat Lesson 9: Learn about the different types of skeletons Lesson 10: Learn about the human skeleton Lesson 11: Learn about animals and their skeletons Lesson 12: Explore the role of muscles Trip to Natural History Museum? – to learn about rocks and fossils **Working Scientifically:** • Set up simple practical enquiries, comparative and fair tests • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Ask relevant questions and using different types of scientific enquiries to answer them • Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers		Lesson 8: How can a solar oven be made more effective: recording and presenting results Lesson 9: Cleaning coins: writing a method and carrying out a practical test Lesson 10: Cleaning coins: writing a conclusion Lesson 11: Making a cake: fair testing, controls and variables Lesson 12: Making a cake: scientific enquiry **Working Scientifically:** • Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Gather, record, classify and present data in a variety of ways to help in answering questions • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions or to support their findings. • Ask relevant questions and using different types of scientific enquiries to answer them • Set up simple practical enquiries, comparative and fair tests		Lesson 6: Compare the effect of different factors on plant growth Lesson 7: Identify the difference between light sources and non light sources Lesson 8: Explore the light that comes from the sun and how to stay safe Lesson 9: Discover how shadows are formed Lesson 10: Investigate how shadows change throughout the day Lesson 11: Explain how reflective surfaces help keep us safe Lesson 12: Investigate how you can change the size of a shadow **Working Scientifically:** • Set up simple practical enquiries, comparative and fair tests • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Use straightforward scientific evidence to answer questions or to support their findings. • Ask relevant questions and using different types of scientific enquiries to answer them	

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	• Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • Identify differences, similarities or changes related to simple scientific ideas and processes					
Year 4	**Enquiry Question/topic** **Living Things and their Habitats** **States of Matter** NC Programme of Study: • 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 • 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		**Enquiry Question/topic** **Animals including humans** **Sound** NC Programme of Study: • 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 • 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		**Enquiry Question/topic** **Electricity** **Living Things and their habitats- Conservation** NC Programme of Study: • 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 • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	

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			• recognise that sounds get fainter as the distance from the sound source increases		• recognise that environments can change and that this can sometimes pose dangers to living things	
	Vocabulary: **Living things and their Habitats** Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate **States of Matter** Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle		**Vocabulary:** **Animals including Humans** Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain **Sound,** source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation		**Vocabulary:** **Electricity** Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol Sound **Living things in their habitats - conservation** Ecosystem, Northern Hemisphere, Southern Hemisphere, migrate, monsoon, rainforest, deforestation, drought, biodiversity, recycling, fossil fuels, pollution, greenhouse gases, emissions, climate change chemical, contaminate, conserve, water treatment plant, sewage	
	Outcomes: Lesson 1: Explore different habitats Lesson 2: Research a habitat Lesson 3: Explore how animals can be classified Lesson 4: Create a classification key Lesson 5: Explore and classify pond Plants Lesson 6: Understand how fish are different from amphibians and reptiles Consider a local trip to Epping Forest, Woodland area in Woodford green, Epping Forest Field Centre (pond dipping)		**Outcomes:** Lesson 1: Identify the organs in the digestive system Lesson 2: Describe the functions of the main organs in the digestive system Lesson 3: Identify the types of human teeth and their functions Lesson 4: Investigate the effects of different liquids on the teeth Lesson 5: Understand food chains Lesson 6: Explore food webs Lesson 7: Identify how sounds are made Lesson 8: Explore how vibrations from sounds travel through a medium to the ear Lesson 9: Explore sound insulation Lesson 10: Explore volume		**Outcomes:** Lesson 1: Explore electrical appliances and electrical safety Lesson 2: Learn about electrical components in a series circuit Lesson 3: Investigate electrical circuits Lesson 4: Explore conductors and insulators Lesson 5: Learn about electrical switches Lesson 6: Investigate how electrical components can change within a circuit Lesson 7: Describe ecosystems and how they are affected by changes in the seasons Lesson 8: Understand human impact on the environment through deforestation Lesson 9: Explore air pollution Lesson 10: Explore air pollution	

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	Lesson 7: Compare and group the 3 states of matter Lesson 8: Explore how particles behave in solids, liquids and gases Lesson 9: Investigate melting points Lesson 10: Explore freezing and boiling points Lesson 11: Explore evaporation and condensation Lesson 12: Understand the water cycle **Working Scientifically:** • Set up simple practical enquiries, comparative and fair tests • Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions or to support their findings. • Ask relevant questions and using different types of scientific enquiries to answer them • Report on findings from enquiries, including oral and written explanations, displays or		Lesson 11: Explore pitch Lesson 12: Explore sounds from near and from far **Working Scientifically:** • Set up simple practical enquiries, comparative and fair tests • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Ask relevant questions and using different types of scientific enquiries to answer them • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Identify differences, similarities or changes related to simple scientific ideas and processes • Use straightforward scientific evidence to answer questions or to support their findings.		Lesson 11: Understand water pollution Lesson 12: Explore methods that can be used to conserve water **Working Scientifically:** • Ask relevant questions and using different types of scientific enquiries to answer them • Set up simple practical enquiries, comparative and fair tests • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Identify differences, similarities or changes related to simple scientific ideas and processes	

St Antony's Science Curriculum - Overview

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	presentations of results and conclusions					
Year 5	**Enquiry Question/topic** **Properties of materials** **Changes of materials**		**Enquiry Question/topic** **Animals including humans** **Living things and their habitats**		**Enquiry Question/topic** **Forces** **Earth and Space**	
	NC Programme of Study: • 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		NC Programme of Study: • 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 • describe the changes as humans develop to old age • They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. [Non-statutory]		NC Programme of Study: • 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 • 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	

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	usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda					
	Vocabulary: **Properties of materials** Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material		**Vocabulary:** **Living things and their habitats** Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual plantlets, runners, bulbs, cuttings, **Animals including humans** Puberty – the vocabulary to describe sexual characteristics Adolescence, hormone, growth		**Vocabulary:** **Forces** Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears **Earth and Space** Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets	
	Outcomes: Lesson 1: Exploring properties of materials Lesson 2: Explore thermal conductors and thermal insulators Lesson 3: Explore the hardness of materials Lesson 4: Discover materials that become soluble in water Lesson 5: Investigate the solubility of materials Lesson 6: Explore how mixtures could be separated by filtering, sieving, evaporating or magnets Lesson 7: Use evaporation to recover the solute from a solution Lesson 8: Recognise and describe reversible changes Lesson 9: Observe chemical reactions and describe how we know new materials are made Lesson 10: Investigate rusting reactions Lesson 11: Investigate burning reactions		**Outcomes:** Lesson 1: Identify the key stages of a mammal's life cycle Lesson 2: Explore the gestation periods of mammals Lesson 3: Learn about foetal development Lesson 4: Investigate the hand span of different aged children Lesson 5: Learn about the changes experienced during puberty Lesson 6: Describe the changes humans may experience during adulthood and old age Lesson 7:Learn about asexual reproduction Lesson 8: Learn about asexual reproduction Lesson 9: Describe the life cycles of a mammal, bird and reptile Lesson 10: Describe the life cycles of an insect and amphibian Lesson 11: Know about the life and work of Sir David Attenborough Lesson 12: Know about the life and work of Dame Jane Goodall		**Outcomes:** Lesson 1: Explore gravity and the life and work of Isaac Newton Lesson 2: Examine the connection between air resistance and parachutes Lesson 3: Explore factors which affect an object's ability to resist water Lesson 4: Investigate the effects of friction on different surfaces Lesson 5: Investigate mechanisms - levers and pulleys Lesson 6: Investigate mechanisms - gears Lesson 7: Describe Nicolaus Copernicus' ideas about planetary motion Lesson 8: Describe the movement of Earth in space Lesson 9: Learn about gravitational force Lesson 10: Describe the characteristics of the planets in our solar system Lesson 11: Describe the Big Bang Theory Lesson 12: Explore what causes the different phases of the Moon	

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	Lesson 12: Investigate chemical reactions - acids and bicarbonate of soda **Working Scientifically:** Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate 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 Identify scientific evidence that has been used to support or refute ideas or arguments		**Working Scientifically:** 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 Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary		**Working Scientifically:** Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Use test results to make predictions to set up further comparative and fair tests 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 Identify scientific evidence that has been used to support or refute ideas or arguments	
Year 6	**Enquiry Question/topic** **Evolution and inheritance** **Animals including humans**		**Enquiry Question/topic** **Living things and their habitats** **Electricity**		**Enquiry Question/topic** **Light** **Looking after our environment**	
	NC Programme of Study: • 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		NC Programme of Study: • 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 • recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function		NC Programme of Study: • 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	

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	• identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • describe the ways in which nutrients and water are transported within animals, including humans		• 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		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	
	Vocabulary: **Evolution and Inheritance** Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils **Animals including humans** Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle		**Vocabulary:** **Living things and their habitats** Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering **Electricity** Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage		**Vocabulary:** **Light** As for Year 3 - Light, plus straight lines, light rays **Our environment** Weather, climate, prevent global warming, climate change recycle, landfill, rubbish biodegrade, council net zero renewable, non renewable greenhouse gases, emissions species sensitive, natural disaster, habitat vulnerable	
	Outcomes: Lesson 1: Explain what fossils can tell us Lesson 2: Explain how adaptations help animals and plants survive Lesson 3: Describe the process of natural selection Lesson 4: Explain why animals can look different to their parents		**Outcomes:** Lesson 1: Classify living things Lesson 2: Explore the kingdoms of life Lesson 3: Describe the work of Carl Linnaeus Lesson 4: Identify different classes of vertebrates Lesson 5: Explore soil habitats Lesson 6: Describe different types of fungi and yeast		**Outcomes:** Lesson 1: Explain how light travels in a straight line and shadows are formed Lesson 2: Compare materials of different transparencies Lesson 3: Describe how lenses can be used Lesson 4: Show white light is a mixture Lesson 5: Explain how water can bend light Lesson 6: Investigate light colour mixing	

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	Lesson 5: Describe the process of genetic modification Lesson 6: Explore the work of palaeontologist Mary Anning Lesson 7: Understand the function of the heart and its role in the circulatory system Lesson 8: Identify and compare blood vessels Lesson 9: Explore blood Lesson 10: Learn how the body transports water and nutrients Lesson 11: Investigate what affects your heart rate Lesson 12: Learn about the impact of drugs and alcohol on the body **Working Scientifically:** • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Identify scientific evidence that has been • used to support or refute ideas or arguments • 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		Lesson 7: Describe the parts of an electric circuit Lesson 8: Explore voltage and its effect on an electrical circuit Lesson 9: Apply knowledge to identify and correct problems in a circuit Lesson 10: Investigate what affects the output of a circuit Lesson 11: Build a set of traffic lights Lesson 12: Apply knowledge of conductors and insulators **Working Scientifically:** • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Use test results to make predictions to set up further comparative and fair tests • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Take measurements ,using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • 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 • Identify scientific evidence that has been used to support or refute ideas or arguments		Lesson 7 Learn about climate change Lesson 8: Explore ways to reduce how much rubbish is sent to landfill Lesson 9: Explore ways to reduce energy consumption Lesson 10: Explore what happens when fuels are burnt Lesson 11: Explore the outcomes of COP26 Lesson 12: Compare data associated with the weather **Working Scientifically:** • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • Take measurements ,using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Use test results to make predictions to set up further comparative and fair tests • 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 • Identify scientific evidence that has been used to support or refute ideas or arguments	