Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

	EYFS	How this is achieved in EYFS	Key Vocabulary to be developed in EYFS		Science KS1 Link
Specific Area of Learning Understanding of the World	Early Learning Goals that link most closely to the Science National Curriculum. ELG : The Natural World Explore the natural world around them, making observations and drawing pictures of animals and plants. ELG: PSED - Managing Self Manage own basic hygiene and personal needs including dressing, going to the toilet, and understanding the importance of healthy food choices.	High Quality Texts which introduce concepts to children through stories. Discussions around snack and lunchtime of the importance of healthy food choices. Naming body parts through songs. Correct naming of body parts. Talking about pets at home. Exploring minibeasts and recording observations.	exercise healthy wash toothbrush tooth / teeth body head bones skeleton family	animal human mammal bird fish amphibian insect lifecycle nocturnal	Animals, including humans
	ELG 14: The Natural World 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.	Going on walks in the school grounds to observe the local environment and to compare and learn about the seasons. Taking photographs to compare seasons and discuss. Planting and growing bulbs, seeds and plants. Creating and observing minibeast hotels in the woods. Making boats to explore best materials. Water tray activities to explore water, ice and materials that float and sink.	lifecycle plant seed grow roots flower material wood plastic glass float	seasons Autumn Winter Spring Summer change weather sink liquid solid	Plants Y1 : Seasonal Changes. Everyday materials. Y2: Living things and their habitats. Uses of everyday materials.
Scientific Vocabulary – scientist, sort, observation, identify, compare, group, investigate, test, evaluate					

Science Knowledge and Skills Progression

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Key Stage 1	Year 1	Year 2
Everyday Materials Knowledge	• 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 **KEY AREAS:** **Name. Describe and sort everyday materials based on their properties**.	• 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 **KEY AREAS: What can materials be used for and what changes can happen to them.**
Everyday Materials *Vocabulary*	*Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, flexible, waterproof, absorb, absorbent, breaks/tears, rough, smooth, shiny, dull, transparent, opaque*	*Artificial, ceramic, brittle, durable, extracted, inflexible, fabric, reflective, Manufactured, rigid, natural, translucent, metal, magnetic, dull, plastic, wood transparent, waterproof, clay, rock, shiny, fabric, soft, rough, smooth squashing, bending, stretching, twisting, coins, cans, cars, matches, floors, tables, doors, windows, glasses/spectacles*
Seasonal Changes *Knowledge*	• observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies **KEY AREAS:** **Observe weather and changes across seasons**	
Seasonal Changes Vocabulary	*sun, rain, snow, cloud, day, night, dawn, month, dusk, season, mild, spring, rotate, summer, soaked, autumn, weather, sunshine, temperature.*	

Science Knowledge and Skills Progression

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Key Stage 1	Year 1	Year 2
Plants ***Knowledge***	• 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 **KEY AREAS:** **Name basic parts—identify common 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 **KEY AREAS:** **Seed/bulb grow into plants, keeping plants healthy.**
Plants ***Vocabulary***	*plant, tree, fruit, flower, roots, leaf, garden, living, grow, bud, nutrients, trunk, stem, branch, deciduous, bark, evergreen, seed, wild, daisy, oak, holly*	*wither, shrivelled, germination, dormant, perennial, mature, carbon dioxide, bulb, glucose, anchor, clone, sustain*
Animals Inc Humans ***Knowledge***	• 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 **KEY AREAS:** **To understand what an animal is, to be able to recognise characteristics of different animals and to be able to explain why humans are animals.**	• 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 **KEY AREAS:** **How animals change, what they need to survive and the importance of exercise, food hygiene.**
Animals Inc Humans ***Vocabulary***	*living, non-living, alive, not-alive, humans, animals, fish, amphibians, birds, mammals, sense, eye, sight, see, ear, nose, smell, touch, taste, tongue, tall, taller, tallest, small, smallest, smaller than, like, similar to, different from blood, mammal, senses, amphibian, young, reptile, feathers, herbivore, fur, carnivore, scales, omnivore*	*move, grow, growth, reproduce, feed, babies, toddlers, adults vegetables, bread, sweet, salty, water, air/oxygen, exercise, fruit, rice, milk, meat, diet , cheese variety, germ, healthy, balanced, unhealthy, medicines, safety, packaging, healthy, hygiene, survive, larva, exercise, pupa, heart, vertebrates, lungs, invertebrates, metamorphosis*

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Key Stage 1	Year 1	Year 2
Living things and Habitats ***Knowledge***		• 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 • 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 **KEY AREAS:** • **Characteristics of living things, location of living things and how living things are connected.**
Living things and Habitats ***Vocabulary***		*habitat, animal, plant, living, thrive, oxygen, depend, nutrition, producer, respiration, consume, sensitivity, prey, reproduction, predator, excretion, grow, growth, produce, seed, bulb, water, light, food, germination, survival/survive, healthy.* *names for range of plants; daisy, dandelion, oak* *plant related vocabulary with different meanings in other contexts; shoot, fruit, earth, table* *expressions to describe location; within, under, next to*

Science Knowledge and Skills Progression

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Working Scientifically

KS1 children are taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content :

- **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**

Specific Skills	Year One	Year 2
Asking and answering questions	Use everyday language/begin to use simple scientific words to ask or answer a scientific question	Suggest ideas, ask simple questions and know that they can be answered/investigated in different ways including simple secondary sources, such as books and video clips.
Making predictions	Begin to say what might happen in an investigation.	Begin to make predictions.
Making observations	Observe objects, materials and living things and describe what they see.	Observe something closely and describe changes over time.
Equipment and measurement	Use simple, non standard equipment and measurements in a practical task.	Use simple equipment, such as hand lenses or egg timers to take measurements, make observations and carry out simple tests.
Identifying and Classifying	Sort and group objects, materials and living things, with help, according to simple observational features.	Decide, with help, how to group materials, living things and objects, noticing changes over time and beginning to see patterns.
Engaging in investigations	Follow instructions to complete a simple test individually or in a group.	Do things in the correct order when performing a simple test and begin to recognise when something is unfair.
Recording and reporting findings	Begin to record simple data. Talk about their findings and explain what they have found out.	Gather data, record and talk about their findings, in a range of ways, using simple scientific vocabulary.
Drawing conclusions	Explain, with help, what they think they have found out.	Use simple scientific language to explain what they have found out.
Analysing Data	Use every day or simple scientific language to ask and/or answer a question on given data.	Identify simple patterns and/or relationships using simple comparative language.
Working scientifically vocabulary	*Experience, observe, changes, patterns, grouping, sorting, classifying, compare, identify (name), data, measure, record, equipment, questions, test, investigate, explore magnifying glass / hand lens, same, different*	

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Key Stage 2	Year 3&4 (Two Year Cycle)	Year 5	Year 6
Rocks ***Knowledge*** **(Cycle B)**	• 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 **KEY AREAS:** **Types of rocks, how they are formed, what makes soil, how are fossils formed.**		
Rocks ***Vocabulary*** **(Cycle B)**	*Cemented, fossil, compacted, igneous, decay, magma, prehistoric, metamorphic, soil, minerals, transform, sedimentary, extinct, imprint, palaeontologist, preserve, process, rocks, sediments, drainage, particles, permeable, nonpermeable, sand*		

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Key Stage 2	Year 3&4 (Two Year Cycle)	Year 5	Year 6
Animals Inc Humans ***Knowledge***	Cycle A • 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 **KEY AREAS:** **What effect does the food we eat have on us. Skeletons and muscles** Cycle B • 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 KEY AREAS: Basic function of digestive system. Teeth. Food chains.	• Describe the changes as humans develop to old age • know the changes experienced in puberty • research the gestation periods of other animals and compare them with humans; by finding out and recording the length and mass of a baby as it grows **KEY AREAS:** **How humans change with age**	• 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 **KEY AREAS:** **Human circulatory system. Exercise, drugs and lifestyle. Water transportation.**
Animals Inc Humans ***Vocabulary***	*Minerals, biceps, skeleton, triceps, skull, vertebrae, Voluntary, vitamins, involuntary, proteins, nerves, Carbohydrates* *Expel, incisor, compact, canine, digestion, molar, acid, enzyme, stomach, saliva, intestines, peristalsis, mouth, tongue, teeth, oesophagus, abdomen, body, bowel, digestion, digestive system, eat, excrete, food, intestines, liquids, nutrients, organ, processes, saliva, solids, stomach, molar, tooth decay, plaque, disease*	*chronology, chronological, adolescence, diverse, puberty, unique, gestation, generation, embryo, mature, foetus, equipped, womb expectant, expectancy* *physical, physically* *emotion, emotional, emotionally*	*skeleton, muscles, digestion, nutrition, oxygen, cell, plasma, chamber, platelet, system, artery, circulation, capillary, vessel, vein, clot, ventricle, cardiac, cardiologist, cardiogram* *oxygenate, circulation, digestion, de-oxygenate, filter, kidney, urine, expel, bladder, substance, function, excretion, toxin, transform, nutrient, renal, urethra, ureter*

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Key Stage 2	Year 3&4 (Two Year Cycle)	Year 5	Year 6
Plants ***Knowledge***	Cycle B • 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 KEY AREAS: What a plant needs to grow; nutrition and water transportation. Life cycle of plants .		
Plants ***Vocabulary***	*thrive, absorb, stem, nutrients, perennial, germination adapt, transpiration, essential, stoma, glucose, pollination,* *transport, stamen, variety, pistil, vital, photosynthesis*		

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Key Stage 2	Year 3&4 (Two Year Cycle)	Year 5	Year 6
Light ***Knowledge***	Cycle B • 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 a solid object • find patterns in the way that the size of shadows change **KEY AREAS:** **Need for light to see. How shadows are formed**.	•	• 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 **KEY AREAS:** **Properties of light, refraction, reflection, shadows and colour.**
Light ***Vocabulary***	*Light, materials, opaque, shiny, absence, constant, cast (shadow), impenetrable, independent, reflect, illuminate, shadow, translucent, source (light*		*Impurity, refraction, emit, incidence, absorb, spectrum, constituent, prism, filter, lux, pigment, vision, visible, invisible, kaleidoscope, refract, caliginous, caliginosity diffuse*

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Key Stage 2	Year 3&4 (Two Year Cycle)	Year 5	Year 6
Sound ***Knowledge***	Cycle A • 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 **KEY AREAS:** **How sound is made, travels.** **Pitch and volume.**		
Sound ***Vocabulary***	*Produce, vibrate, property, pitch, source, volume,* *Frequent, medium, regular, vacuum, affect, sound wave*		•

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Key Stage 2	Year 3&4 (Two Year Cycle)	Year 5	Year 6
Forces and Magnets ***Knowledge***	Cycle A • 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 **KEY AREAS:** **Contact forces and friction, non contact forces, magnetic forces.**	• 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 **KEY AREAS:** **Gravity, air/water resistance, friction. Levers, pulleys and gears**	•
Forces and Magnets ***Vocabulary***	*Materials, properties, physical, metaconsequence, magnet* *Contact, resistance, force, friction, attract, repel, north, pole, south, magnetic field, non-magnetic, attraction, repulsion, size, metal, iron, copper aluminium, attract, repel, magnetic, direction, push, pull, balanced, unbalanced*	*Force, magnetism, attract, repel, friction, resistance* *Pulley, reaction, gear, advantage, pivot, displace, fulcrum,* *Weight, lever, mass, upthrust, static, constant, inhibitor*	

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Key Stage 2	Year 3&4 (Two Year Cycle)	Year 5	Year 6
Materials **Knowledge**	Cycle A • 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 **KEY AREAS:** **Solids, Liquids, gases** **Change state: melting,evaporation,condensation.**	• 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 • reversible, including changes associated with burning and the action of acid on bicarbonate of soda **KEY AREAS:** **Properties, mixtures and solutions. Separation of materials. Reversible and irreversible changes.**	
Materials **Vocabulary**	*heat, cool, temperature, change, freeze compare, materials, properties, permanent, evaporate, particle, condense, solid, melt, liquid, matter, gas, state, vapour*	*Property, atom, particle, molecule, separate, Chemical (changes), combine, physical (changes), Recover, reversible, comparative, reaction*	•

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Key Stage 2	Year 3&4 (Two Year Cycle)	Year 5	Year 6
Living things and their habitats ***Knowledge***	Cycle A • 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 **KEY AREAS:** **Group living things, use classification keys.** **Change in environment can threaten life.**	• 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. **KEY AREAS:** **Animal - different life cycles, reproduction in plants and animals**	• 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 **KEY AREAS:** **Classifications including microorganisms, plants and animals.**
Living things and their habitats ***Vocabulary***	*habitat, micro-habitat, depend, organism, reproduction classification, vertebrate, environment, invertebrate, interdependence, biotic, interact, ecosystem, beneficial, species, hierarchy, niche*	*pupa, larva, reproduction, pollinate, pollination deduce, embryo, process, sexual, re-form, metamorphosis, transform, incubate, adolescence, biochemical contrast,fertilisation, entomology diversity*	*Environment, vertebrate, invertebrate, interdependence Ecosystem, characteristic, fungus, arthropod, specific, Taxonomy, categorise, kingdom, organised, primitive Phylum, hierarchy, genus, entomology, entomologist*

Science Knowledge and Skills Progression

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Key Stage 2	Year 3&4 (Two Year Cycle)	Year 5	Year 6
Electricity ***Knowledge***	• 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 **KEY AREAS:** **simple circuits, switches ,conductors and insulators.**	•	• 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 **KEY AREAS:** **Build and represent circuits. Diagnose effects of changing circuit components and batteries.**
Electricity ***Vocabulary***	*Perimeter, complete, completion, recharge, associate, component, identify, electrical insulator, portable electrical conductor, effect, circuit, appliance,* *Series, electricity, plug, circuit, loop, plug socket, bulb, danger, bulb holders, dangerous, buzzer, battery, switch, connection, mains, wire, break, bright, brighter, less bright, a precautions, safety,*		*circuit/circuitous, current, conduct/conductor, insulate/insulator/insulation, component, consequence, neutron, systematic, electron, represent, terminal, source, series, generate, voltage, parallel circuit, semi-conductor, electromagnet, electromagnetism*

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Key Stage 2	Year 3&4 (Two Year Cycle)	Year 5	Year 6
Evolution & Inheritance **Knowledge**			• 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 **KEY AREAS:** • **biological changes over time, theories of evolution**
Evolution & Inheritance **Vocabulary**			*vary, variation, reproduce, reproduction, descend, descendent, diverse, diversity, diversify, characteristic, evolve, adaptation, survival, acquire, species, theory, clone, modify, inherit, generation, fossil, gene, generation, genetic, biological, biodiversity*

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Key Stage 2	Year 3&4 (Two Year Cycle)	Year 5	Year 6
Earth & Space *Knowledge*		• 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 **KEY AREAS: Movement Earth, planets & moon. Night and day and seasons.**	•
Earth & Space *Vocabulary*		*Anticlockwise, hemisphere, equinox, luminous, orbit, star, moon, phenomenon, axis, attraction, gravity crescent, gravitational, relative, waxing, apparent, waning, elliptical, cosmology*	•

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Working Scientifically

During years 3 and 4, pupils are 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.**

Specific Skills	Year 3	Year 4
Asking and answering questions	Use ideas to pose questions, independently, about the world around them.	Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. Answer questions using straight forward scientific evidence.
Making predictions	Make predictions and begin to give a reason.	Make predictions and give a reason using simple scientific vocabulary.
Making observations	Make decisions about what to observe during an investigation.	Make systematic and careful observations.
Equipment and measurement	Take accurate measurements using standard units.	Take accurate measurements using standard units and a range of equipment, including thermometers and data loggers.
Identifying and Classifying	Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships.	Identify similarities/differences/changes when talking about scientific processes. Use and begin to create simple keys.
Engaging in investigations	Discuss enquiry methods and describe a fair test.	Make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables.
Recording and reporting findings	Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts.	Choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations).
Drawing conclusions	Draw, with help, a simple conclusion based on evidence from an enquiry or observation.	Use recorded data to make predictions, pose new questions and suggest improvements for further enquiries.
Analysing Data	Gather, record and use data in a variety of ways to answer a simple question.	Identify, with help, changes, patterns, similarities and differences in data to help form conclusions. Use scientific evidence to support their findings.
Working scientifically vocabulary	Develop, enquiry, practical enquiry, fair test, comparative test, relationships, conclusion, accurate, thermometer, data logger, estimate, data, diagram, key (identifying), table, chart, bar chart, results, predictions, explanation, reason, similarity, difference, question, evidence, information, findings, criteria, values, properties, characteristics	

Science Knowledge and Skills Progression

In Jesus' footsteps we will grow in grace and knowledge

Working Scientifically

- During years 5 and 6, pupils are taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:
- 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
- using test results to make predictions to set up further comparative and fair tests
- 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
- identifying scientific evidence that has been used to support or refute ideas or arguments.

Specific Skills	Year 5	Year 6
Asking and answering questions	Raise different types of scientific questions, and hypotheses.	Pose/select the most appropriate line of enquiry to investigate scientific questions.
Making predictions	Make predictions and give a reason using scientific vocabulary	Make predictions and give a reason using scientific vocabulary. Base predictions on findings from previous investigations.
Making observations	Plan and carry out comparative and fair tests, making systematic and careful observations.	Make their own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests.
Equipment and measurement	Take measurements using a range of scientific equipment with increasing accuracy and precision.	Choose the most appropriate equipment in order to take measurements, explaining how to use it accurately. Decide how long to take measurements for, checking results with additional readings.
Identifying and Classifying	Use and develop keys to identify, classify and describe living things and materials.	Identify and explain patterns seen in the natural environment.
Engaging in investigations	Plan a range of science enquiries, including comparative and fair tests.	Select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why, in a variety of comparative and fair tests.
Recording and reporting findings	Record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, bar and line graphs and models.	Choose the most effective approach to record and report results, linking to mathematical knowledge.
Drawing conclusions	Use a simple mode of communication to justify their conclusions on a hypothesis. Begin to recognise how scientific ideas change over time.	Identify validity of conclusion and required improvement to methodology. Discuss how scientific ideas develop over time.
Analysing Data	Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.	Identify and explain causal relationships in data and identify evidence that supports or refutes their findings, selecting fact from opinion.
Working scientifically vocabulary	Variables, evidence, justify, accuracy, precision, scatter graphs, bar graphs, line graphs, argument (science), causal relationship	