OUR LADY OF LOURDES
CATHOLIC MULTI-ACADEMY TRUST

Our Science Intent

	Year											
Term	F1		F2		1		2	3	4	5	6	
Advent	KUW Family Sense, body parts, my school, keeping healthy	The four Seasons	Animals	The four Seasons	Human Body	The four Seasons	Animals including Humans	Animals Including Humans	Teeth	Animals Including Humans	Living things and Inheritance	
							Floating and Sinking	Forces and magnets	Digestion	Forces	Circulatory System	
Lent	Materials		Properties of Materials		Everyday materials		Materials	Rocks and Soils	Sound	Micro Organisms	Evolution	
	Plants and Animals		Plants		Properties of Materials		Changing materials	Light and Dark	States of Matter	Earth Moon and Sun	Light	
Pentecost	Living things and the Environment		Life Cycles		Plants		Plants	Plants	Electricity	Materials- dissolving and mixing	Electricity	
	Animal Life cycles		Floating and sinking		Animals		Loving things and their Habitats	Nutrition	Living Things	Plants		
Discipline	Biology				Physics				Chemistry			

Year 1 Science

Advent 1 **Human Body**	Over the Year Seasonal Changes	Lent 1 **Everyday Materials**	Lent 2 **Properties of Materials**	Pentecost 1 **Plants**	Pentecost 2 **Animals**
Pupils will know: • the name of the basic parts of the human body • which part of the body is associated with each of the five senses • how to use the five senses.	**Pupils will know:** • the names of the four seasons • the changes that occur across the four seasons • the weather associated with the seasons and how day length varies	**Pupils will know:** • how to distinguish between an object and the material from which it is made • the name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock and how to identify them • how to describe the properties of everyday materials. • the differences between opaque and transparent	**Pupils will know:** • how to compare and group together a variety of everyday materials on the basis of their simple physical properties • how to identify materials that are magnetic • the simple physical properties of a variety of everyday materials • the difference between waterproof and absorbent	**Pupils will know:** • the names a variety of common wild and garden plants, including deciduous and evergreen trees and how to identify them • the basic structure of a variety of common flowering plants, including trees, i.e. roots, trunk, stem, leaves, petal and how to identify and describe them • the changes in trees throughout the four seasons and how to observe them	**Pupils will know:** • and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • how to classify animals into categories • and name a variety of common animals that are carnivores, herbivores and omnivores • the different diets and characteristics of different animals and describe them • the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) and describe and compare them
Vocabulary					
Eyes, ears, mouth, tongue, hands, skin, touch; smell; taste; sight; hear; senses; human body	Autumn; winter; spring; summer; seasons; weather; month; year	Material; (material names) opaque; transparent; hard soft, bendy, stiff, rough, smooth	Material; opaque; transparent; magnetic; non-magnetic; waterproof	Deciduous; evergreen; trunk; leaves; branches; roots; stem; petals; flower	Amphibian; reptile; bird; mammal; diet; teeth; carnivore; omnivore; herbivore; protection; camouflage; prey; predator;

Investigations					
	What is the weather like?	**What can our hands do?** **Why do we have two eyes?** **Which material will make the best curtains?** **Are all metals magnetic?** **Which material will make an umbrella**		**Are all leaves the same?**	**What is camouflage for?**
Working Scientifically					
Pupils will know how to: • Ask simple questions and recognise that they can be answered in different ways • Observe closely, using simple equipment perform simple tests • Gather and record data to help in answering questions • Identify and classify Use their observations and ideas to suggest answers to questions	**Pupils will know how to:** • Ask simple questions and recognise that they can be answered in different ways • Observe closely, using simple equipment perform simple tests • Gather and record data to help in answering questions • Identify and classify Use their observations and ideas to suggest answers to questions	**Pupils will know how to:** • Ask simple questions and recognise that they can be answered in different ways • Observe closely, using simple equipment perform simple tests • Gather and record data to help in answering questions • Identify and classify Use their observations and ideas to suggest answers to questions	**Pupils will know how to:** • Ask simple questions and recognise that they can be answered in different ways • Observe closely, using simple equipment perform simple tests • Gather and record data to help in answering questions • Identify and classify Use their observations and ideas to suggest answers to questions	**Pupils will know how to:** • Ask simple questions and recognise that they can be answered in different ways • Observe closely, using simple equipment perform simple tests • Gather and record data to help in answering questions • Identify and classify Use their observations and ideas to suggest answers to questions	**Pupils will know how to:** • Ask simple questions and recognise that they can be answered in different ways • Observe closely, using simple equipment perform simple tests • Gather and record data to help in answering questions • Identify and classify Use their observations and ideas to suggest answers to questions
Vocabulary					
Scientifically, predict, test, equipment, observe, accurate, results, method, variable, record, observe, ask/answer questions, describe, changes, patterns, grouping, sorting, compare, same, different, identify (name), measure, record results, drawing, picture, table, tally chart, pictogram, block chart, Venn diagram, test, investigate, equipment, magnifying glass, hand lens, ruler, tape measure, metre stick, pipette, syringe, spoon					

Year 2 Science

Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
Animals including humans	**Floating and Sinking**	**Materials** (Chemistry)	**Living things and habitats**	**Changing Materials**	**Plants**
Pupils will know: • that animals, including humans, have offspring which grow into adults • that animals including humans have life cycle and change as they grow • the basic needs of animals, including humans, for survival (water, food and air) • the importance for humans of exercise, eating the right amounts of different types of food, and hygiene • the effects exercise has on the human body	**Pupils will know:** • the definition of floating and sinking. • which objects float and which sink. • why objects float and sink • how to plan an investigation to investigate which objects float and which sink. • how to make predictions about which objects will float and sink. • how to record which objects float and which sink. how to explain results of floating and sinking investigation.	**Pupils will know:** • a range of different materials. • the type of material which everyday objects are made from. • why materials are used for specific purposes e.g. wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. • the difference between manmade and natural materials. how to plan an investigation which investigates the best material to make a bouncy ball from.	**Pupils will know:** • the difference between things that are living, dead, and things that have never been alive. • that most living things live in habitats to which they are suited. • that different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each other • the names of a variety of plants and animals in their habitats. • what a micro-habitat is. • what a food chain is and be able to explain how animals obtain their food.	**Pupils will know:** • That some materials melt when heated. • That some materials will harden when cooled. • That some objects and materials can be changed by squashing, bending, twisting, stretching, heating, cooling, mixing. • That some materials do not mix. • The recycling process and how some materials are changed.	**Pupils will know:** • the basic structure of a plant i.e. flower, petal, stem, leaf, fruit, root. • the role of each part of the plant. • how seeds and bulbs grow into mature plants. • that plants need water, light and a suitable temperature to grow and stay healthy. • things that are living, dead and never lived. • the life cycle of a plant i.e. seed, young plant, mature plant, flower, fruit. • what germination means. • the stages of germination and be able to order them.
Vocabulary					

Lifecycle; exercise; diet; balanced; hygiene; food; offspring; survival; adult; hydrated; reproduce; healthy	Float, sink, absorbent, non-absorbent, waterproof, water, liquid, solid, hollow, buoyancy.	Solid; rough; smooth; waterproof; transparent; strong; opaque; rigid; glue; natural; stickier; absorbent; consistency; flexible; squashing, bending, twisting, stretching, heating, suitable, purpose, man-made	Life cycle; minibeast; invertebrates; food chain; habitat; micro-habitat; prey; predator; source; consumer; energy; survival; diet; hygiene; camouflage; exercise	Melt, heat, cool, solid, liquid, mixing, freeze, solidify, inventor, inventions, irreversible, reversible, recycle, squashing, twisting, stretching.	Leaf; stem; roots; petals; flowers; light; soil; water; seed; bulb; plant; temperature; healthy; germination; scattered; life cycle; photosynthesis; energy; mature.
Investigations					
How do germs spread? **Why should we exercise?**		**Do all balls bounce?** **Which stuff is sticker?** **Which materials don't mix?** **Which materials float?**		**How do materials change when heated and cooled?**	**Can seeds grown anywhere?** **What does grass need to grow?**
Working Scientifically					
Pupils will know how to: • Ask simple questions, recognising that they can be answered in differently. • Make observations using simple equipment. • Perform a simple test. • Know what a variable is. • Perform a fair test. • Identify and classify animals, habitats and food. • Use observations and ideas to suggest answers to questions. Gather and record data accurately	**Pupils will know how to:** • Ask simple questions, recognising that they can be answered in differently. • Make observations using simple equipment. • Perform a simple test. • Know what a variable is. • Perform a fair test. • Identify and classify materials based on their properties. • Use observations and ideas to suggest answers to questions. Gather and record data accurately.	**Pupils will know how to:** • Ask simple questions, recognising that they can be answered in differently. • Make observations using simple equipment. • Perform a simple test. • Know what a variable is. • Perform a fair test. • Identify and classify materials based on their properties. • Use observations and ideas to suggest answers to questions for suitability. Gather and record data accurately	**Pupils will know how to:** • Ask simple questions, recognising that they can be answered in differently. • Make observations using simple equipment. • Perform a simple test. • Know what a variable is. • Perform a fair test. • Identify and classify animals and living things. • Use observations and ideas to suggest answers to questions. Gather and record data accurately	**Pupils will know how to:** • Ask simple questions, recognising that they can be answered in differently. • Make observations using simple equipment. • Perform a simple test. • Know what a variable is. • Perform a fair test. • Identify and classify changes. • Use observations and ideas to suggest answers to questions. Gather and record data accurately.	**Pupils will know how to:** • Ask simple questions, recognising that they can be answered in differently. • Make observations using simple equipment. • Perform a simple test. • Know what a variable is. • Perform a fair test. • Identify and classify things. • Use observations and ideas to suggest answers to questions. Gather and record data accurately.

Vocabulary

Scientifically, predict, simple, perform, test, equipment, observe, accurate, results, method, variable, accurate, gather, record, classify, identify.

observe, ask/answer questions, describe, changes, patterns, grouping, sorting, compare, same, different, measure, data,

record results, present, drawing, picture, table, tally chart, pictogram, block chart, Venn diagram,

test, investigate, equipment, magnifying glass, hand lens, ruler, tape measure, metre stick, pipette, syringe, spoon

Year 3 Science

Advent 1 **Animals including Humans**	Advent 2 **Forces and Magnets**	Lent 1 **Rocks and Soils**	Lent 2 **Light and Dark**	Pentecost 1 **Plants**	Pentecost 2 **Nutrition**
Pupils will know: • that animals and humans need the right types of nutrition • that animals get their nutrition from food • how to identify that humans and some other animals have skeletons and muscles for support, protection and movement	**Pupils will know:** • that there are different forces acting on objects • how to notice that some forces need contact between two objects, but magnetic forces can act at a distance • how to observe how magnets attract or repel each other and attract some materials and not others • how to compare and group together a variety of everyday materials on the basis on whether they are attracted to a magnet, and	**Pupils will know:** • a different range or rock types • how to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • how to describe in simple terms how fossils are formed • how different types of natural rock are made • how to recognise that soils are made from rocks and organic matter	**Pupils will know:** • how to recognise that they need light in order to see things and that the dark is the absence of light • how to notice that light is reflected from surfaces • how to recognise that light from the sun can be dangerous and that there are ways to protect their eyes • how to recognise that shadows are formed when the light from a light source is blocked by a solid object	**Pupils will know:** • how to identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • how to 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 • how to investigate the way in which water is transported within plants • how to explore the part that flowers play in the life	**Pupils will know:** • how to identify how animals, including humans, get nutrition from what they eat • what are the right types and amount of nutrition • that they cannot make their own food; they get nutrition from what they eat

	identify some magnetic materials • how to describe magnets as having two poles • how to predict whether two magnets will attract or repel each other, depending on which poles are facing how things move on different surfaces		• how to find patterns in the way that the size of shadows changes	cycle of flowering plants, including pollination, seed formation and seed dispersal	
Vocabulary					
skeleton; bones; invertebrate; vertebrate; support; protection; movement	Pole; force; magnetic; magnetism; attract; repel; force; force meter; gravity; natural	Compression; fossil; metamorphic; sedimentary; humus; topsoil; parent material; bedrock	Shadow; source; opaque; transparent; reflector; natural	Germination; pollination; dispersal; life cycle; attract; fertilisation; reproduction	starch; carbohydrates; fats; oils; dairy; protein; balanced; nutrition; energy; omnivore; carnivore; herbivore; consumer; predator; producer; prey
Investigations					
What are our joints for? **Which is the juiciest fruit?** **How clean are your hands?**	**Can you block magnetism?** **How mighty are magnets?**		**Why do shadows change?** **Why do cat's eyes glow at night?**	**Where does the water go?** **Do plants have legs?** **Are mushrooms deadly?**	
Working Scientifically					
Pupils will know how to: • how to ask relevant questions and use different types of	**Pupils will now how to:** • how to ask relevant questions and use different types of	**Pupils will know how to:** • how to ask relevant questions and use different types of	**Pupils will know how to:** • how to ask relevant questions and use different types of	**Pupils will know how to:** • how to ask relevant questions and use different types of	**Pupils will know how to:** • how to ask relevant questions and use different types of

scientific enquiries to answer them • how to set up simple practical enquiries, comparative and fair tests • how to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • how to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • how to gather, record, classify and present data in a variety of ways to help in answering questions • how to identify differences, similarities or changes related to simple scientific ideas and processes • how to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • how to use straightforward scientific evidence to	scientific enquiries to answer them • how to set up simple practical enquiries, comparative and fair tests • how to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • how to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • how to gather, record, classify and present data in a variety of ways to help in answering questions • how to identify differences, similarities or changes related to simple scientific ideas and processes • how to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • how to use straightforward scientific evidence to	scientific enquiries to answer them • how to set up simple practical enquiries, comparative and fair tests • how to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • how to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • how to gather, record, classify and present data in a variety of ways to help in answering questions • how to identify differences, similarities or changes related to simple scientific ideas and processes • how to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • how to use straightforward scientific evidence to	scientific enquiries to answer them • how to set up simple practical enquiries, comparative and fair tests • how to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • how to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • how to gather, record, classify and present data in a variety of ways to help in answering questions • how to identify differences, similarities or changes related to simple scientific ideas and processes • how to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • how to use straightforward scientific evidence to	scientific enquiries to answer them • how to set up simple practical enquiries, comparative and fair tests • how to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • how to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • how to gather, record, classify and present data in a variety of ways to help in answering questions • how to identify differences, similarities or changes related to simple scientific ideas and processes • how to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • how to use straightforward scientific evidence to	scientific enquiries to answer them • how to set up simple practical enquiries, comparative and fair tests • how to make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • how to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • how to gather, record, classify and present data in a variety of ways to help in answering questions • how to identify differences, similarities or changes related to simple scientific ideas and processes • how to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • how to use straightforward scientific evidence to

answer questions or to support their findings how to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	answer questions or to support their findings how to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	answer questions or to support their findings how to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	answer questions or to support their findings how to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	answer questions or to support their findings how to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	answer questions or to support their findings how to use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

Vocabulary

practical work, fair testing, relationships, accurate, thermometer, data logger, stopwatch, timer, estimate, data, diagram, identification key, chart, bar chart, prediction, similarity, difference, evidence, information, findings, criteria, values, properties, characteristics, conclusion, explanation, reason, evaluate, improve

Year 4 Science

Advent 1 **Teeth**	Advent 2 **Digestion**	Lent 1 **Sound**	Lent 2 **States of Matter**	Pentecost 1 **Electricity**	Pentecost 2 **Living Things**
Pupils will know: • the different types of teeth in humans. • the simple function of the teeth in humans. • the different parts of the tooth • what plaque is and how this causes tooth decay.	• the parts of the human digestive system. • the simple functions of the basic parts of the human digestive system. • the functions of the organs in the human digestive system.	**Pupils will know:** • how sounds are made. • how sound travels from the source to ears. • the place of vibration in hearing. • the correlation between pitch and the object producing the sound. • what happens to a sound as it travels away from its source. • the patterns between the volume of a sound and the	**Pupils will know:** • what different states of matter (solid, liquid, gas) are • how some materials change state • some materials change state when they are heated or cooled • how to measure the temperature at which changes occur in degrees Celsius (°C). • what the water cycle is.	**Pupils will know:** • the dangers of electricity • common appliances that run on electricity. • the basic components including: cells, wires, bulbs, switches, and buzzers of a simple circuit. • How to construct a simple series circuit • whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a	**Pupils will know:** • the characteristics of living things • classification keys are used to group living things • how to create classification keys to group, identify and name a variety of living things. • some habitats that contain smaller

		strength of the vibrations that produced it. that sounds get fainter as the distance from the sound source increases.	• and explain the part played by evaporation and condensation in the water cycle.	complete loop with a battery. • that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • some common conductors and insulators, and associate metals with being good conductors	habitats within them. • environments can change. • how changes to an environment could endanger living things.
Vocabulary					
Incisor; molar; premolar; canine; filling; tooth decay; plaque Mouth, saliva,	Mouth, saliva, oesophagus, stomach, acid, digestive enzymes, small intestine, nutrients, large intestine, rectum	Vibration; sound waves; waves; pitch; soundproof; volume	Solid; liquid; gas; particles; melting; freezing; heating; cooling; viscosity; water cycle; precipitation; condensation; evaporation; collection	Conductor, insulator, current, cell, battery, wire, bulb, motor, buzzer, circuit	Vertebrate; invertebrate; mammal; amphibian; fish; reptile; bird; environment
Investigations					
What is spit for? **How do different liquids affect teeth?**	**How clean are your hands?** **How does yeast work?**	**How far can sound travel?** **Can we block sound?**	**Where does water go?** **Are all liquids runny?**	**What conducts electricity?** **How do plugs work?**	**How does pollution affect habitat?** **What type of litter attracts animals?**

How does toothpaste affect teeth? **How much sugar is in drinks?**				**Can you make a circuit from play dough**	
Working Scientifically					
Pupils will know how to: • Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Gather, record, classify and present data in a variety of ways to help in answering questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Report on findings from enquiries, including oral and written explanations, displays	**Pupils will know how to:** • Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Gather, record, classify and present data in a variety of ways to help in answering questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Report on findings from enquiries, including oral and written explanations, displays	**Working Scientifically** **Pupils will know how to:** • Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Gather, record, classify and present data in a variety of ways to help in answering questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Report on findings from enquiries, including oral and written explanations, displays	• Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Gather, record, classify and present data in a variety of ways to help in answering questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	**Pupils will know how to:** • Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Gather, record, classify and present data in a variety of ways to help in answering questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Report on findings from enquiries, including oral and written explanations, displays	**Pupils will know how to:** • Ask relevant questions and use different types of scientific enquiries to answer them. • Set up simple practical enquiries, comparative and fair tests. • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Gather, record, classify and present data in a variety of ways to help in answering questions. • Identify differences, similarities or changes related to simple

or presentations of results and conclusions. • Use straightforward scientific evidence to answer questions or to support their findings. • Use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. • Make a prediction and give a reason for this. • Identify the differences, similarities and changes related to an enquiry	or presentations of results and conclusions. • Use straightforward scientific evidence to answer questions or to support their findings. • Use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. • Make a prediction and give a reason for this. Identify the differences, similarities and changes related to an enquiry	or presentations of results and conclusions. • Use straightforward scientific evidence to answer questions or to support their findings. • Use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. • Make a prediction and give a reason for this. Identify the differences, similarities and changes related to an enquiry	• Use straightforward scientific evidence to answer questions or to support their findings. • Use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. • Make a prediction and give a reason for this. Identify the differences, similarities and changes related to an enquiry	or presentations of results and conclusions. • Use straightforward scientific evidence to answer questions or to support their findings. • Use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. • Make a prediction and give a reason for this. Identify the differences, similarities and changes related to an enquiry	scientific ideas and processes. • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Use straightforward scientific evidence to answer questions or to support their findings. • Use results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions. • Make a prediction and give a reason for this. Identify the differences, similarities and changes related to an enquiry

Vocabulary

practical work, fair testing, relationships, accurate, thermometer, data logger, stopwatch, timer, estimate, data, diagram, identification key, chart, bar chart, prediction, similarity, difference, evidence, information, findings, criteria, values, properties, characteristics, conclusion, explanation, reason, evaluate, improve

Year 5 Science

Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
Animals including Humans	**Forces**	**Micro-Organisms**	**Earth Sun and Moon**	**Materials-Dissolving and Mixing**	**Plants**

Pupils will know: • the life process of reproduction in some animals • the changes as humans develop from birth to old age. • the differences in the life cycles of a mammal, an amphibian, an insect and a bird • the differences in the life cycles of a mammal, an amphibian, an insect and a bird • the differences in gestation of some mammals the differences in life expectancy of mammals	**Pupils will know:** • how different forces work • that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • the effects of air resistance, water resistance and friction, that act between moving surfaces some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	**Pupils will know:** • bacteria, viruses and fungi are three different types of microbes. • microbes are found everywhere • some microbes can help keep us healthy. • some microbes can be put to good use. • infection can spread through sneezing and coughing	**Pupils will know:** • the movement of the Earth, and • other planets, relative to the Sun • the movement of the Moon relative to the Earth • the Sun, Earth and Moon as approximately spherical bodies • how to use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. • the key properties of the planets in the Milky way system the solar system includes meteors and asteroids	**Pupils will know:** • To compare and group together everyday materials on the basis of their properties • some materials will dissolve in liquid to form a solution • how to recover a substance from a solution • how to use knowledge of solids, liquids and gases to decide how mixtures might be separated • and be able to demonstrate that dissolving, mixing and changes of state are reversible changes • some changes result in the formation of new materials, and that this kind of change is not usually reversible	**Pupils will know:** • the life process of reproduction in some plants • plants produce flowers which have male and female organs. • seeds are formed when pollen from the male organ fertilises the ovum (female). • insects pollinate some flowers and how this is done • seeds can be dispersed in a variety of ways. • the process of germination in a plant lifecycle • the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal
Vocabulary					
Amphibian, mammal, human, young, old age pensioner, toddler, teenager	Force; air resistance; water resistance; buoyancy; load; gravity; up thrust; exert	micro-organisms; fungi; bacteria; viruses	Orbit; elliptical; crater; lunar; phase; satellite; axis; solar system; universe	Dissolve; soluble; solute; insoluble; solution; reversible; irreversible; suspension; state; material	Pollination; pollinator; fertilisation; reproduction; germination; leaf; stem; roots; petals; light; soil; water; seed; bulb; temperature
Investigations					

Do we slow down as we get older?	How do levers help us? Why are zip wires so fast?		Is the Earth round? Why do planets have craters?	Can you clean water? Will it erupt?	What affects germination?
Working Scientifically					
Pupils will know how to: • 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 • 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 use test results to make predictions to set up further comparative and fair tests	**Pupils will know how to:** • plan different types of scientific enquiries to answer questions, including recognising and • control variables where necessary • take 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Vocabulary
variables, independent variable, dependent variable, control variable, evidence, justify, argument (science), causal relationship, accuracy, precision, scatter graphs, bar graphs, line graphs, force mete

Year 6 Science

Advent 1 **Living things and Inheritance**	Advent 2 **Circulatory System**	Lent 1 **Evolution and Adaptation**	Lent 2 **Light**	Pentecost 1 **Electricity**	Pentecost 2
Pupils will know: • 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 • reasons for classifying plants and animals based on specific characteristics	• **Pupils will know:** • the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • the impact of diet, exercise, drugs and lifestyle on the way their bodies function. the ways in which nutrients and water are transported within animals, including humans	**Pupils will know:** • that living things have changed over time • fossils provide information about living things that inhabited the Earth millions of years ago • that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.	**Pupils will know:** • light appears to travel in straight lines • that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes	**Pupils will know:** • how to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches	**Pupils will know:** •

the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification		• how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution • <u>Living Things</u> • how animals are adapted to suit their environment • how the Earth and living things have changed over time • how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution (building on and applying knowledge from Advent 1) •	• how to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	• the recognised symbols used when representing a simple circuit in a diagram.	
Vocabulary					
Antarctic; Arctic; freeze; habitat; biodiversity; ecosystem; dense; insulate; inhibit Insulate, warm, blubber, fat, fur, adaptation, Interdependent, rely, food source, consumer, predator, food chain, energy, sun	Blood, red blood cells, white blood cells, plasma, platelets, defend, protect, transport, oxygen, nutrients, water, Circulatory system, heart, lungs, blood, blood vessels, oxygenated, deoxygenated,	Adaptation; artificial selection; DNA; evolution; extinct; fossil; selective breeding; inheritance; natural selection; species; trait Adaptation; artificial selection; DNA; evolution; extinct; fossil; selective breeding; inheritance; natural selection; species; trait; dominant; recessive; classification; gene; inherit; arch; chromosome; characteristic; classify; genetic; molecule; fingerprint; loop;	Eye ball, cornea, pupil, iris, lens, focus, information, Protect, retina, optic nerve, reflect, dilate, contract, bigger, smaller, dim, bright Light, wave. Ray, beam, straight line, light source, reflect light, fibre optic, zig zag, bounce, Charles Kao	Optical; voltage; cladding; transmit; circuit; internal reflection; optical fibres. Series circuit, current, cell, battery, wire, bulb, motor, buzzer, circuit, voltage	

Investigations					
	How does blood flow? What can your heart rate tell you?	Why are things classified? Why is holly prickly? Why do birds have different beaks? Can we slow cooling down? How do animals stay warm?	Can we see through it?	Can fruit light a bulb? Can you turn a light bulb down?	
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