Saint Joseph's Catholic Primary Voluntary Academy

Science Curriculum

2025-2027

Cycle A and B

19.08.25 SB

What do we want for our pupils?

Intent

Science teaching at St Joseph's Catholic Voluntary Academy aims that all children transition to Year 7 with skills, knowledge and understanding through our encouragement for them to have a sense of awe and wonder about the world around them and our celebration of their inquisitive minds. Through a wide range of purposeful, planned and structured learning opportunities from the moment children enter our school, they will acquire specific skills and subject knowledge to gain an understanding of scientific processes and an understanding of the purpose and implication of biology, chemistry and physics in every aspect of their daily life, stages of education and future life experiences.

Science in our school will harness the natural curiosity, a strong understanding of the world around them, whilst acquiring specific skills and knowledge to help them think scientifically, to gain an understanding of scientific processes and also an understanding of the uses and implications of science, today and for the future. Topics, such as plants, are taught in Early Years and Key Stage one and studied again in further detail throughout Key Stage Two. This model allows children to build upon their prior knowledge and increases their enthusiasm for the tasks, whilst embedding this procedural knowledge into the long-term memory. All children are encouraged to develop and use a range of skills including observations, planning and investigations, as well as being encouraged to question the world around them and become independent learners in exploring possible answers for their scientific based questions. Specialist vocabulary for topics is taught and built up, and effective questioning to communicate ideas is encouraged. Concepts taught should be reinforced firstly by practical methods alongside creative learning and oracy when possible, so that pupils learn to use a variety of approaches to answer relevant scientific questions.

Implementation

The areas of the curriculum are timetabled to provide progression and challenge throughout the school. Most of the learning about science will be carried out through the use of first-hand practical experiences, this will be backed up with the use of appropriate secondary sources, such as books, photographs and videos. Work in science will be evidenced through written work, photographs and discussions. Science at St Joseph's is delivered once per week, using the 'Maestro' curriculum to support the learning.

Science teaching at St Joseph's Catholic Voluntary Academy aims to ensure that all pupils know and understand:

- a developing scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- a developing understanding of the nature, processes and methods of science through different types of investigations that help them to answer scientific questions about the world around them
- the scientific knowledge required to understand the uses and implications of science, today and for the future.

What is our goal?

Impact

Children will achieve age related expectation in science for the end of their cohort year. This will be moderated and examples of WT, EXP and GDS will be shared.

- Gain a wider variety of skills linked to both scientific knowledge and understanding, and scientific enquiry/investigative skills.
- Have a richer vocabulary which will enable children to articulate their understanding of taught concepts.
- Have high aspirations, which will see them through to further study, work and a successful adult life.
- Have a general knowledge of biology, chemistry and physics which will allow them to make sense of the world around them, enabling them to take on further learning and acquire new skills.
- Become 'scientists' with a love and understanding of science.

Assessment in Science

Formative assessment is carried out constantly within the lessons, through questioning and discussion to check the children's understanding. Marking in science books links to basic skills to promote a high standard of spelling, punctuation and grammar across the curriculum. Marking also links to factual knowledge as well as their understanding and summarisation of the tasks. Retrieval quizzes and quick questions are used in every lesson to help children retain knowledge. This also enables children to assess their own learning and identify targets for their future work. In turn, this supports teachers in providing feedback for children's work.
Summative assessment is carried out termly to indicate if a child is working towards, at or above the age-related expectations.

NATIONAL CURRICULUM			
In KS1 pupils are taught:		CYCLE A Y1&2	CYCLE B Y1&2
Y1 BIOLOGY Plants	identify and name a variety of common wild and garden plants, including deciduous and evergreen trees identify and describe the basic structure of a variety of common flowering plants, including trees.		Pentecost 1 and Pentecost 2 Structure of plants and trees
Y1 BIOLOGY Animals, including humans	identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores, herbivores and omnivores Science – key stages 1 and 2 8 Statutory requirements 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.		Lent 1 and Lent 2 Types of common animals and human senses
Y1 CHEMISTRY Everyday Materials	distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties.		Advent 1 and Advent 2 Physical Properties
Y1 Seasonal Changes	observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies.		Throughout the year
Y2 BIOLOGY Living things and their habitats	explore and compare the differences between things that are living, dead, and things that have never been alive identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other identify and name a variety of plants and animals in their habitats, including micro habitats describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	Advent 1 and Advent 2 Food Chains	
Y2 BIOLOGY 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.	Pentecost 1 Growth of seeds and bulbs	
Y2 BIOLOGY Animals, including humans	notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	Lent 1 and Lent 2 Basic needs for survival and life cycle	
Y2 CHEMISTRY Everyday Materials	identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Pentecost 2 Uses of Everyday Materials	

NATIONAL CURRICULUM			
In KS2 pupils are taught:		CYCLE A Y3&4	CYCLE B Y3&4
Y3 BIOLOGY Plants	• 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.	Pentecost 1 Nutrition and Reproduction	
Y3 BIOLOGY Animals, including humans	• 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.	Lent 1 and Lent 2 Nutrition and the skeletal System	
Y3 CHEMISTRY Rocks	• 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.		Advent 2 Rocks
Y3 CHEMISTRY Light	• recognise that they need light in order to see things and that dark is the absence of light • notice that light is reflected from surfaces • recognise that light from the sun can be dangerous and that there are ways to protect their eyes • recognise that shadows are formed when the light from a light source is blocked by an opaque object • find patterns in the way that the size of shadows change.		Pentecost 2 Shadows
Y3 PHYSICS Forces and Magnets	• compare how things move on different surfaces • notice that some forces need contact between two 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 two poles • predict whether two magnets will attract or repel each other, depending on which poles are facing.		Advent 1 Forces and Magnets
Y4 BIOLOGY Living things and their habitat	• 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.	Lent2 Group and Classifying	
Y4 BIOLOGY Animals, including humans	• describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey.	Lent 1 Teeth, digestive system and food chains	

Y4 CHEMISTRY States of Matter	• compare and group materials together, according to whether they are solids, liquids or gases • observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Advent 2 States of Matter	
Y4 PHYSICS Sound	• identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases.	Advent 1 Sound	
Y4 PHYSICS Electricity	• identify common appliances that run on electricity • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors.	Pentecost 1 and Pentecost 2 Circuits, conductors and insulators	

NATIONAL CURRICULUM			
	In KS2 pupils are taught:	CYCLE A Y5&6	CYCLE B Y5&6
Y5 BIOLOGY All living things and their habitat	• 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.		Lent 1 Life cycles and reproduction
Y5 BIOLOGY Animals, including humans	• describe the changes as humans develop to old age.		Lent 2 Human Changes
Y5 CHEMISTRY Properties and changes of materials	• 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.		Pentecost 1 and Pentecost 2 Properties and Changes of Materials
Y5 PHYSICS Earth and Space	• 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.		Advent 1 Earth and Space
Y5 PHYSICS 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		Advent 2 Forces
Y6 BIOLOGY Living things and their habitat	• 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.	Pentecost 2 Classification	

Y6 BIOLOGY Animals, including humans	• identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • 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.	Lent 1 and Lent 2 Circulatory System, nutrition and healthy living	
Y6 BIOLOGY Evolution and inheritance	• recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	Pentecost 1 Evolution and Inheritance	
Y6 PHYSICS Light	• 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.	Advent 1 Light	
Y6 PHYSICS Electricity	• 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.		Advent 2 Electricity

Science Curriculum

2025-2026

CYCLE A

A	Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
FS1 And FS2	Signs of Autumn	Signs of Winter	Natural Environment and Wild Animals	Body parts	Materials	Animals
Y1 and Y2	Biology: Living Things and their Habitats *Food chains*		Biology: Animals, including Humans *Basic needs for survival and life cycle*		Biology: Plants *Growth of seeds and bulbs*	Chemistry: Uses of Everyday Materials
Y3 and Y4	Physics: Sound	Chemistry: States of Matter	Biology: Animals, including humans *Teeth, digestive system and food chains*	Biology: Living Things and their Habitats *Grouping and Classifying*	Physics: Electricity *Circuits, conductors and insulators*	
Y5 and Y6	Physics: Light	Physics: Electricity	Biology: Animals including humans *Circulatory System, nutrition and healthy living*		Biology: Evolution and Inheritance	Biology: Living things and their Habitats *Classification*

CYCLE A

YEAR ONE AND YEAR TWO*

BIOLOGY: **LIVING THINGS AND THEIR HABITATS** **ADVENT 1 and ADVENT 2**	BIOLOGY: ANIMALS, INCLUDING HUMANS LENT 1 and Lent 2

Working scientifically:

Year 2

- Ask simple questions and recognise that they can be answered in different ways.
- Perform simple tests.
- Observe closely using simple equipment.
- Identify and classify things they observe.
- Gather and record data to help in answering questions.
- Use their observations and ideas to suggest answers to questions.

Year 1

- Ask simple questions.
- Perform simple tests, with support.
- Observe using simple equipment.
- Identify and group things they observe, with support.
- Gather and record simple data.
- Use their observations and ideas to suggest answers to questions, with support.

NATIONAL CURRICULUM

Biology – Living Things and Their Habitats	Biology – Animals, Including Humans
Pupils should be taught to: Year 2 (NC - only) • 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	Pupils should be taught to: Year 2 • 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 Year 1 – Links 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.

Knowledge and Understanding:

L1

- To know that things are living, dead or never been alive.
- To know that things are living, dead or never been alive with support.

L2

- To know that most living things live in a habitat to which they are suited.
- To know that most living things live in a habitat to which they are suited with support.

L3

- To know that plants and animals in a habitat can be identified.
- To know that plants and animals in a habitat can be identified with support.

L4

- To know that a microhabitat is a small area which differs from the surrounding habitat.
- To know that a microhabitat is a small area which differs from the surrounding habitat with support.

L5

- To know that animals need food, water, air and shelter to survive.
- To know that animals need food, water, air and shelter.

L6

- To know that Richard Sidney Richmond Fitter was a naturalist and conservationist.
- To know who Richard Sidney Richmond Fitter was.

L7

- To know that a wormery is a way of recycling kitchen waste to make compost.
- To know what a wormery is.

L8

- To know that living things depend on one another for food.
- To know that living things depend on one another for food with support.

L9

- To know that prey animals have different ways to avoid capture by predators.
- To know that prey animals can avoid capture by predators.

L10

Knowledge and Understanding:

L1

- To know that humans change as they grow. To identify the different stages of development
- To know that humans change as they grow.

L2

- To know that the life cycle of a chicken has four stages. To be able to identify the four stages
- To know that the life cycle of a chicken has four stages.

L3

- To know that the life cycle of a frog has four stages. To be able to describe the four stages.
- To know that the life cycle of a frog has four stages.

L4

- To know that the life cycle of a butterfly has four stages. To be able to describe the four stages
- To know that the life cycle of a butterfly has four stages.

L5

- To know that the life cycle of a mouse has three stages. To be able to describe the three stages.
- To know that the life cycle of a mouse has three stages.

L6

- To know that many animals behave differently in different seasons in the UK. To explain the different ways animals behave during the different seasons.
- To know that many animals behave differently in different seasons in the UK.

L7

- To know that humans need different things to keep them alive. To explain why we need these different things to keep alive.
- To know that humans need different things to keep them alive.

L8

- To know that exercise is important to keep healthy. To describe different ways we can exercise to keep healthy.
- To know that exercise is important to keep healthy.

L9

- To know that a balanced diet is important to stay healthy. To explain

• To know that plants have adaptations that protect them from being eaten by animals. • To know that plants have adaptations that protect them. **L11** • To know that all habitats provide the support for all things that live there to survive. • To know that all habitats provide support. **L12** • To know that a bug hotel can be made to provide shelter for wildlife. • To know that a bug hotel can help wildlife.	the different components of a healthy diet. • To know that a balanced diet is important to stay healthy. **L10** • To know that hygiene is important. To explain what good hygiene is. • To know that hygiene is important. **L11** • To know that germs can spread. To explain how germs can spread. • To know that germs can spread.
Vocabulary: living, non-living, dead, movement, respiration, sensitivity, nutrition, excretion, reproduction, growth, habitat, food, air, oxygen, water, soil, temperature, plants, animals, interdependent, invertebrates, backbone, worms, molluscs, crustacean, insect, arachnid, myriapod, microhabitat, small, larger, rock pool, pond, hedgerow, logs, stones, variety, light, dark, damp, wet, dry, features, shelter, protection, survive, carnivore, herbivore, omnivore, nature reserves, naturalist, environment, conservation, identification, diversity, wormery, organic, waste, convert, compost, food chain, producer, consumer, predator, prey, plant, depend, camouflage, adaptation, attack, plant, adapt, adaptation, spine, thorn, hair, sting, chemicals, camouflage, food source, water source, , similarities, differences, natural, wildlife, biodiversity, spaces	**Vocabulary:** humans, animals, stages, life cycle, survival, exercise, diet, balanced, nutrition, hygiene, benefit, egg, hatch, hatchling, chick, chicken, offspring, reproduce, frogspawn, tadpole, gills, mouth, tail, legs, froglet, frog

CYCLE A
YEAR ONE AND YEAR TWO*

BIOLOGY: PLANTS PENTECOST 1	CHEMISTRY: USES OF EVERYDAY MATERIALS PENTECOST 2

Working scientifically:

Year 2

- **Ask simple questions and recognise that they can be answered in different ways.**
- **Perform simple tests.**
- **Observe closely using simple equipment.**
- **Identify and classify things they observe.**
- **Gather and record data to help in answering questions.**
- **Use their observations and ideas to suggest answers to questions.**

Year 1

- **Ask simple questions.**
- **Perform simple tests, with support.**
- **Observe using simple equipment.**
- **Identify and group things they observe, with support.**
- **Gather and record simple data.**

Use their observations and ideas to suggest answers to questions, with support.

NATIONAL CURRICULUM

Biology – Plants	Chemistry – Uses of Everyday Materials
Pupils should be taught to: Year 2 • 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 Year 1 – Links Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	Pupils should be taught to: Year 2 • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching Year 1 – Links 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.
Knowledge and Understanding: **L1**	Knowledge and Understanding: **L1**

• To know that plants have different parts and functions. • To know that plants have different parts. **L2** • To know that plants grow in different habitats. • To know that plants grow in different habitats. – with support **L3** • To know the reasons why seeds and bulbs need water and warmth to germinate. • To know that seeds and bulbs need water and warmth to germinate. **L4** • To know the reasons why plants need water, light and a suitable temperature to grow and stay healthy. • To know that plants need water, light and a suitable temperature to grow and stay healthy. **L5.** • To know and give examples of unusual plants around the world. • To know that there are unusual plants around the world. **L6** • To know and give examples of some plants that are edible. • To know that some plants are edible.	• To know that objects are made from different materials and describe how the materials are different. • To know that objects are made from different materials. **L2** • To know that materials are used in the local area for different purposes. • To know that materials are used in the local area for different purposes. **L3** • To know and give reasons why different materials are more suitable than others. • To know that different materials are more suitable than others. **L4** • To know and give reasons why the shapes of objects made from some materials can be changed. • To know that the shapes of objects made from some materials can be changed. **L5** • To know that new materials have been discovered and give examples. • To know that new materials have been discovered. **L6** • To know how plastic pollution can be reduced or prevented. • To know that plastic pollution can be reduced or prevented.
Vocabulary: roots, trunk, bark, branches, leaves, habitat, stems, flowers, fruit, deciduous, evergreen, microhabitat, seasons, changes, observations, germination, seed, bulbs, plants, basal plate, embryo, tunic, shade, flower bud, sunlight, survive, temperature, water, warmth, lithops, rafflesia, nutrients, research, results, compare, conclusion, investigation, method, equipment, record.	**Vocabulary:** absorbency, absorbent, bend, bendy, cardboard, clay, fabric, glass, hard, man-made, material, metal, natural, natural resource, object, opaque, paper, plastic, pollution, property, recycle, rock, rough, rubbish, shape, smooth, soft, squash, strength, stretch, stretchy, strong, sustainability, texture, transparent, twist, waterproof, wood.

CYCLE A

YEAR THREE AND YEAR FOUR*

PHYSICS: SOUND ADVENT 1	CHEMISTRY: STATES OF MATTER ADVENT 2

Working scientifically:

Year 4

- **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.**
- **Identify differences, similarities or changes related to simple scientific ideas and processes.**
- **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.**
- **Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.**
- **Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.**
- **Use scientific evidence to answer questions or to support their findings.**

Year 3

- **Ask simple, relevant questions and use scientific enquiries to answer them.**
- **Set up simple practical enquiries, comparative and fair tests, with support.**
- **Make careful observations and, where appropriate, take measurements using standard units, using a range of equipment.**
- **Identify changes that relate to simple scientific ideas, when prompted.**
- **Gather, record, classify and present data in a variety of ways.**
- **Record findings using simple scientific language, drawings, labelled diagrams and tables.**
- **Use results to draw simple conclusions and raise further questions.**
- **Report on findings from enquiries, including oral and written explanations.**
- **Use scientific evidence to answer questions.**

NATIONAL CURRICULUM

Physics - Sound	Chemistry – State of Matter
Pupils should be taught to: Year 4 (NC – only) • 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	Pupils should be taught to: Year 4 (NC – only) • 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)

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- 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

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- identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

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<u>Knowledge and Understanding:</u>

L1

- **To know and describe how sounds are made by vibrations.**
- **To know that sounds are made by vibrations.**

L2

- **To know and describe how sounds travel through a medium to the ear.**
- **To know that sounds travel through a medium to the ear.**

L3

- **To know and give reasons why the features of an object effect the pitch of the sound made.**
- **To know that the features of an object effect the pitch of the sound made.**

L4

- **To know and give reasons why the strength of the vibration is related to the volume of the sound.**
- **To know that the strength of the vibration is related to the volume of the sound.**

L5

- **To know and explain that the volume of a sound is affected by distance.**
- **To know that the volume of a sound is effected by distance.**

L6

- **To know and give reasons why Alexander Graham Bell was an important inventor.**
- **To know that Alexander Graham Bell was an inventor.**

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<u>Knowledge and Understanding:</u>

L1

- **To know and give reasons why materials can be classed as a solid, liquid or gas.**
- **To know that materials can be classed as a solid, liquid or gas.**

L2

- **To know and explain the different ways that particles make up all matter.**
- **To know that particles make up all matter.**

L3

- **To know that some materials change state of matter when heat is added or removed. Give and describe examples.**
- **To know that some materials change state of matter when heat is added or removed.**

L4

- **To know and explain how freezing, melting, evaporation and condensation are all reversible changes.**
- **To know that freezing, melting, evaporation and condensation are all reversible changes.**

L5

- **To know and document observations regularly to identify changes over time.**
- **To know that observations can be made regularly to identify changes over time.**

L6

- **To know that a material's state depends upon the Earth's temperature. Give and describe examples.**
- **To know that a material's state depends upon the Earth's temperature.**

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Vocabulary:

vibrations, sound waves, pinna, ear canal, eardrum, ossicles, inner ear, cochlea, cochlear nerve, brain, signals, medium, wavelength, pitch, high, low, hertz, speed, fast, slow, volume, decibels, force, energy, louder, quieter, muffle, absorb, distance, nearer, further, volume, louder, quieter, decibel, invention, telephone

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Vocabulary:

solid, liquid, gas, state, matter, flow, pour, space, fixed, compressed, invisible, particle, close, far, arrangement, pattern, heat, cool, freeze, melt, evaporate, evaporation, condense, condensation, reversible, temperature, degrees, thermometer, melting point, freezing point, boiling point, condensing point, data, line, line graph, curved, steep, flat, straight, shallow, observe, collect, record, gaseous, water vapour

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CYCLE A
YEAR THREE AND YEAR FOUR*

BIOLOGY: **ANIMALS, INCLUDING HUMANS** **LENT 1**	**BIOLOGY:** **LIVING THINGS AND THEIR HABITATS** **LENT 2**	**PHYSICS:** **ELECTRICITY** **PENTECOST 1 AND 2**

Working scientifically:

Year 4

- **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.**
- **Identify differences, similarities or changes related to simple scientific ideas and processes.**
- **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.**
- **Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.**
- **Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.**
- **Use scientific evidence to answer questions or to support their findings.**

Year 3

- **Ask simple, relevant questions and use scientific enquiries to answer them.**
- **Set up simple practical enquiries, comparative and fair tests, with support.**
- **Make careful observations and, where appropriate, take measurements using standard units, using a range of equipment.**
- **Identify changes that relate to simple scientific ideas, when prompted.**
- **Gather, record, classify and present data in a variety of ways.**
- **Record findings using simple scientific language, drawings, labelled diagrams and tables.**
- **Use results to draw simple conclusions and raise further questions.**
- **Report on findings from enquiries, including oral and written explanations.**
- **Use scientific evidence to answer questions.**

NATIONAL CURRICULUM		
Biology – Animals, Including Humans	Biology – Living Things and their Habitats	Chemistry - Electricity
Pupils should be taught to: Year 4 • describe the simple functions of the basic parts of the digestive system in humans	Pupils should be taught to: Year 4 (NC- only) • recognise that living things can be grouped in a variety of ways	Pupils should be taught to: Year 4 (NC – only) • identify common appliances that run on electricity

• 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 Year 3 – Link 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.	• 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	• 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
Knowledge and Understanding: **L1** • **To know and describe how the food chains in an ecosystem are linked together by a food web.** • **To know that food chains in an ecosystem are linked together by a food web.** **L2** • **To know and describe the different types of human teeth and their specific functions.** • **To know that there are different types of human teeth with specific functions.** **L3** • **To know and give reason why it is important to look after teeth.** • **To know that it is important to look after teeth.** **L4** • **To know and give reason why not all animals have the same teeth.** • **To know that that not all animals have the same teeth.** **L5** • **To know and describe how the different organs make up the digestive system.** • **To know that different organs make up the digestive system.** L6	Knowledge and Understanding: **L1** • **To know that living things can be classified using classification keys.** L2 • **To know that the animal kingdom is divided into vertebrates and invertebrates. To know how to use a classification key to identify vertebrates and invertebrates.** • **To know that the animal kingdom is divided into vertebrates and invertebrates.** **L3** • **To know that a vertebrate has specific features. To explain the importance of the features.** • **To know that a vertebrate has specific features.** **L4** • **To know that an invertebrate has specific features. To explain the importance of the invertebrates.** • **To know that an invertebrate has specific features.** **L5** • **To know that the plant kingdom is divided into vascular and non-vascular plants. To**	Knowledge and Understanding: **L1** • **To know and explain that electricity is a type of energy that powers everyday items.** • **To know that electricity is a type of energy that powers everyday items.** **L2** • **To know and explain that a circuit is a collection of components connected by wires through which an electric current can flow.** • **To know that a circuit is a collection of components connected by wires through which an electric current can flow.** **L3** • **To know and explain that a series circuit has a single path for an electric current to flow through.** • **To know that a series circuit has a single path for an electric current to flow through.** **L4** • **To know and explain that a series circuit must be a complete loop to work and have a source of power from a battery or cell.** • **To know that a series circuit must be a complete loop to work and have a source of power from a battery or cell.** **L5**

• To know and explain how the digestive system functions as a whole system. • To know that the digestive system functions as a whole system.	explain the different between vascular and non-vascular plants. • To know that the plant kingdom is divided into vascular and non-vascular plants. L6 • To know that humans can have a positive and a negative impact on living things and their habitats. (Identify and classify) • To know that humans can have a positive and a negative impact on living things and their habitats. (Identify and group with support)	• To know and explain that electrical conductors allow electricity to flow through them, whereas insulators do not. • To know that electrical conductors allow electricity to flow through them, whereas insulators do not. L6 • To know explain that a switch makes or breaks a circuit. • To know that a switch makes or breaks a circuit.
Vocabulary: food chain, food web, ecosystem, producer, consumer, predator, apex predator, interdependence, teeth, canine, premolar, molar, incisor, enamel, anus, decay, dentine, digestive system, enamel, root, dentine, pulp, crown, root canal, oral hygiene, gall bladder, incisor, intestine, oesophagus, plaque, premolar, pulp, rectum, stomach, teeth, pancreas.	**Vocabulary:** classify, living, non-living, group, category, characteristics, animal kingdom, mammal, reptile, amphibian, bird, fish, invertebrate, sub-divided, animal kingdom, vertebrate, backbone, skin, feathers, scales, fur, hair, exoskeleton, classification key, insect, cold-blooded, warm-blooded, classification key, shell, annelid, mollusc, arachnid, crustacean, myriapod, plant, vascular, non-vascular, seed, spores, flowering, cone-bearing, habitat, animals, plants, human impact, environment, positive, negative, ecology, nature reserve, pollution, insecticide, organic, deforestation, industry, urbanisation, green belt	**Vocabulary:** electricity, battery, recycled, recharged, mains, appliances, electrical circuit, cells, wires, bulbs, switches, buzzers, series circuit, components, emitting, amend, path, conductors, insulators, results, observations, conclusion, diagrams, labels, rocker, reed switches, commercial, lamp, LED

CYCLE A

YEAR FIVE AND YEAR SIX*

PHYSICS: LIGHT ADVENT 1	PHYSICS: ELECTRICITY ADVENT 2

Working scientifically:

Year 6

- **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.**
- **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.**
- **Identify scientific evidence that has been used to support or refute ideas or arguments.**

Year 5

- **Plan scientific enquiries to answer questions.**
- **Take measurements, using a range of scientific equipment, with increasing accuracy and precision.**
- **Record data and results using scientific diagrams and labels, classification keys, tables, bar and line graphs.**
- **Report and present findings from enquiries, including conclusions, in oral and written forms such as displays and other presentations.**
- **Use test results to make predictions to set up further tests.**
- **Identify scientific evidence that has been used to support or disprove ideas.**

NATIONAL CURRICULUM

Physics – Light	Physics - Electricity
Pupils should be taught to: Year 6 (NC - only) • 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	Pupils should be taught to: Year 6 (NC – only) • 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
Knowledge and Understanding: **L1** • **To know that light is a form of energy that travels as waves. (Recap Y3)** • **To know and explain how light waves travel in straight lines.**	Knowledge and Understanding: **L1** • **To know that a circuit is made up of different components. (Y4 recap).**

• To know that light waves travel in straight lines. **L2** • To explain that objects are seen because they give out or reflect light into the eye. • To know that objects are seen because they give out or reflect light into the eye. **L3** • To understand and explain that a shadow appears when an object blocks the passage of light. (Recap Y3) • To know that a shadow appears when an object blocks the passage of light. (Recap Y3) **L4** • To explain that different shaped mirrors effect the light waves and image. • To know that different shaped mirrors effect the light waves and image. **L5** • To understand and explain that refraction is the bending of light as it passes from one transparent material to another. • To know that refraction is the bending of light as it passes from one transparent material to another. **L6** • To understand and explain that Ibn al-Haytham was Iraqi scientist who made breakthroughs in light and vision theory. • To know that Ibn al-Haytham was Iraqi scientist who made breakthroughs in light and vision theory.	• To know and explain the recognised symbols for different components of circuits. • To know that there are recognised symbols for different components of circuits. **L2** • To know and understand that series circuits can be recorded using recognised symbols for different components. • To know that series circuits can be recorded using recognised symbols for different components. **L3** • To know and explain that the volume of a buzzer will change when the wire length is altered. • To know that the volume of a buzzer will change when the wire length is altered. **L4** • To know, show and explain that a switch can open and close a series circuit. • To know that a switch can open and close a series circuit. **L5** • To know and explain that the voltage of a cell in a circuit affects the brightness of a lamp. • To know that the voltage of a cell in a circuit affects the brightness of a lamp. **L6** • To understand and explain that the speed of a motor can be increased and decreased. • To know that the speed of a motor can be increased and decreased.
Vocabulary: light, ray, light wave, straight, angle, reflected, reflect, reflection, light source, natural, artificial, reflect, absorb, scatter, light ray, pupil, cornea, retina, signal, shadow, distort, distortion, diffuses, cast, sharpness, direction, absorb, scatter, angle, equal, impact, plane, convex, concave, curve, flat, refraction, opaque, transparent, material, bent, disjointed, denser, prism, spectrum, pinhole camera, camera obscura, methodology, investigations, theory, evidence, proof	**Vocabulary:** materials, electrical conductors, electrical insulators, flow, symbol, component, cell, lamp, motor, open switch, closed switch, wire, buzzer, LED, battery, voltmeter, series circuit, resistance, volume, sound quality, circuit, length, current, travel, volt, voltage, brightness, bulb, cell, electrons, electrical energy, speed, increase, decrease, slower, faster

CYCLE A

YEAR FIVE AND YEAR SIX*

BIOLOGY: **ANIMALS, INCLUDING HUMANS** **LENT 1 and 2**	**BIOLOGY:** **EVOLUTION AND INHERITANCE** **PENTECOST 1**	BIOLOGY: LIVING THINGS AND THEIR HABITATS PENTECOST 2

Working scientifically:

Year 6

- 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.
- 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.
- Identify scientific evidence that has been used to support or refute ideas or arguments.

Year 5

- Plan scientific enquiries to answer questions.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision.
- Record data and results using scientific diagrams and labels, classification keys, tables, bar and line graphs.
- Report and present findings from enquiries, including conclusions, in oral and written forms such as displays and other presentations.
- Use test results to make predictions to set up further tests.
- Identify scientific evidence that has been used to support or disprove ideas.

NATIONAL CURRICULUM

Biology – Animals, including Humans	Biology – Evolution and Inheritance	Biology – Living Things and Their Habitats
Pupils should be taught to: Year 6 • 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 Year 5 - Link • describe the changes as humans develop to old age.	Pupils should be taught to: Year 6 (NC- only) • 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	Pupils should be taught to: Year 6 • 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 Year 5 – Link • 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

Knowledge and Understanding	Knowledge and Understanding:	Knowledge and Understanding:
L1 • To know that the role of the circulatory system is to transport oxygen, water and nutrients around the body. To explain the process. • To know that the role of the circulatory system is to transport oxygen, water and nutrients around the body. **L2** • To know that the heart and lungs play vital roles in the circulatory system. To explain the role of the heart and lungs in the circulatory system. • To know that the heart and lungs play vital roles in the circulatory system. **L3** • To know that there are different parts of the human heart. **L4** • To know that the human blood consists of different components. To explain the role of the different components. • To know that the human blood consists of different components. **L5** • To know that there are three main blood vessels. To explain the function of the three main blood vessels. • To know that there are three main blood vessels. **L6** • To know that heart rate differs before and after exercise. To evidence your knowledge using a scientific enquiry. • To know that heart rate differs before and after exercise. **L7**	L1 • To explain how you can organise living organisms into broad groups according to their characteristics. (Y4 recap) • To know that you can organise living organisms into broad groups according to their characteristics. (Y4 recap) **L2** • To know that fossils provide information about living things that inhabited the Earth millions of years ago. (Y3 recap) • To explain that evolution is the way that living things change over time. • To know that evolution is the way that living things change over time. **L3** • To describe how evolution relies on the passing on a material called DNA from one generation to the next, known as inheritance. • To know that evolution relies on passing on a material called DNA from one generation to the next, known as inheritance. **L4** • To explain that natural selection is the process through which populations of living organisms adapt and change. • To know that natural selection is the process through which populations of living organisms adapt and change. **L5** • To explain that an adaptation is a physical or behavioural trait that allows a living thing to survive and fill an ecological niche. • To know that an adaptation is a physical or behavioural trait that allows a living thing to survive and fill an ecological niche.	L1 • To recognise and understand that Carl Linnaeus was a scientist famous for classifying animals and plants. • To know that Carl Linnaeus was a scientist famous for classifying animals and plants. **L2** • To know and understand that there are six kingdoms used in classification. • To know that there are six kingdoms used in classification. **L3** • To explain how plants and animals can be classified. • To know that plants and animals can be classified. **L4** • To explain that microorganisms are microscopic and can be classified. • To know that microorganisms are microscopic and can be classified. **L5** • To explain how microorganisms have positive and negative impacts. • To know that microorganisms have positive and negative impacts. **L6** • To give reasons why habitats are important for the conservation of species. • To know that habitats are important for the conservation of species.

• **To know that diet and exercise have an impact on the heart and the body. To use research to support your report.** • **To know that diet and exercise have an impact on the heart and the body.** **L8** • **To know that smoking, alcohol and drugs have an impact on the heart and the body. To use scientific evidence to support your enquiry.** • **To know that smoking, alcohol and drugs have an impact on the heart and the body.** **L9** **To know that drugs are legal and illegal and have an impact on the human body.**	L6 • **To explain that artificial selection is when people (instead of nature) select which organisms get to reproduce.** **To know that artificial selection is when people (instead of nature) select which organisms get to reproduce.**	
Vocabulary: addiction, arteries, atrium, blood vessels, capillaries, carbon dioxide, circulatory system, depressant, diastole, erythrocyte, leukocytes, nutrients, oxygen, plasma, platelets, stimulant, systemic system, systole, veins, ventricle, vena cava, valves, pulmonary, septum, red blood cells, white blood cells, antibody, heart rate, pulse, exercise	**Vocabulary:** classify, classification, kingdom, phylum, class, order, family, genus, species, fossil, genetic, ancestor, evolution, life form, complex, suited, environment, characteristic, evolutionary tree, DNA evidence, descended, common ancestor, inheritance, DNA, common ancestor, gene, genetic, reproduce, sexual, inherited, characteristic, non-inherited, variation, continuous, discontinuous, case study, theory, process, species, adaptation, speciation, generation, physical, behavioural, structural, chemical, natural selection, desirable, undesirable, selective, breeding, artificial, controversial	**Vocabulary:** characteristics, classify, taxonomy, taxonomist, dichotomous key, hierarchy, botany, botanist, microorganism, microscope, bacteria, virus, protozoa, fungi, algae, angiosperms, gymnosperms, Latin, biodiversity, kingdom archaea, Kingdom Bacteria, Kingdom Protista, Kingdom Fungi, Kingdom Plantae and Kingdome Animalia, , groups, conservation, impact

Science Curriculum

2026-2027

CYCLE B

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CYCLE B

YEAR ONE* AND YEAR TWO

CHEMISTRY: **EVERYDAY MATERIALS** **ADVENT 1 and 2**	**BIOLOGY:** **HUMANS, INCLUDING ANIMALS** **LENT 1 and 2**	**BIOLOGY:** **PLANTS** **PENTECOST 1 and 2**

Working scientifically:

Year 2

- **Ask simple questions and recognise that they can be answered in different ways.**
- **Perform simple tests.**
- **Observe closely using simple equipment.**
- **Identify and classify things they observe.**
- **Gather and record data to help in answering questions.**
- **Use their observations and ideas to suggest answers to questions.**

Year 1

- **Ask simple questions.**
- **Perform simple tests, with support.**
- **Observe using simple equipment.**
- **Identify and group things they observe, with support.**
- **Gather and record simple data.**
- **Use their observations and ideas to suggest answers to questions, with support.**

NATIONAL CURRICULUM

Chemistry – Everyday Materials	Biology - Human, including Animals	Biology - Plants
Pupils should be taught to: Year 1 • 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. Year 2 (for reference) 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.	Pupils should be taught to: Year 1 • 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. Year 2 (for reference) Notice that animals, including humans, have offspring which grow into adults.	Pupils should be taught to: Year 1 • 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. Year 2 (for reference)

	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.	
Knowledge and Understanding: **L1** • To know that objects are made from different materials. • To know, identify and compare the reason why objects are made from different materials. **L2** • To know that some materials can be natural. • To know, identify and compare the suitability of natural materials. **L3** • To know that some materials can be human-made. • To know, identify and compare the suitability of human made materials. **L4** • To know that some objects are transparent and opaque. • To know, identify and compare the suitability of transparent and opaque materials. **L5** • To know that some objects consist of more than one property. • To know, identify and compare objects that consist of more than one property. **L6** • To know that the scientist Charles Macintosh invented a waterproof fabric. • To know that the scientist Charles Macintosh invent a waterproof fabric and explain why it was useful.	Knowledge and Understanding: **L1** • To know that there are 5 human senses and body parts are linked to them. • To know that there are 5 human senses and independently link them to body parts. **L2** • To know that there are names for body parts. (revisit FS2) and group them with support. • To know that there are names of body parts and identify and classify the body parts. **L3** • To know that we use our sense of touch to help us make sense of the world around us. • To know that we use our sense of touch to help us make sense of the world around us and recognise the importance **L4** • To know that animals can be sorted into 6 main groups. • To know that animals can be sorted into 6 main groups independently and give reason for your classification. **L5** • To know that humans are mammals. • To know that humans are mammals and give reasons to support your classification. **L6** • To know that goldfish, minnow and carp are all types of fish.	Knowledge and Understanding: **L1** • To know that plants are living things that change over time. • To know that plants are living things and describe how they change over time. **L2** • To know that there are seasonal changes in plants. • To know and describe the seasonal changes in plants. **L3** • To know that there are basic parts of a plant. • To know and describe the basic parts of a plant. **L4** • To know that there are different parts to a leaf. • To know and describe the different parts to a leaf. **L5** • To know that plants provide food, shelter and materials for animals. • To know and describe how plants provide food, shelter and material for animals. **L6** • To know that there is a difference between evergreen and deciduous trees. • To know and describe the difference between evergreen and deciduous trees.

L7 • To know that materials can be waterproof and absorbent. • To know, identify and compare the different waterproof and absorbent materials. **L8** • To know that simple tests can be carried out by following a set of instructions. • To know and independently follow a set of instructions to carry out a simple tests. **L9** • To know that the results are information that has been found out from an investigation. • To know that the results are information that has been found out from an investigation and can help in answering questions.	• To know that goldfish, minnow and carp are all types of fish and give reasons for your classification. **L7** • To know that frogs, newts and toads are all amphibians. • To know that frogs, newts and toads are all amphibians and give reasons for your classification. **L8** • To know that adders, bearded dragons and crocodiles are all reptiles. • To know that adders, bearded dragons and crocodiles are all reptiles and give reasons for your classification. **L9** • To know that robin, pigeon and magpie are all types of birds. • To know that robin, pigeon and magpie are all types of birds and give reasons for your classification. **L10** • To know that earthworms, snails, butterflies and spiders are invertebrates. • To know that earthworms, snails, butterflies and spiders are invertebrates and give reasons for your classification. **L11** • To know that animals are carnivores, herbivores or omnivores. • To know that animals are carnivores, herbivores or omnivores and give reasons for your classification. **L12** • To know that are the differences and similarities between the groups of animals.	

	• **To know that are the differences and similarities between the groups of animals and give reasons for your classification.**	
Vocabulary: wood, plastic, glass, metal, card, rubber, fabric, paper, wool, brick, elastic, foil, water, rock, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, waterproof, not waterproof, absorbent, not absorbent, opaque, transparent, property, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, invention, scientist, pioneering, waterproof, fabric, patent, soak, liquid, investigate, investigation, record, predict, Venn diagram, sorting, grouping, observe, record, information, results, conclusion	**Vocabulary:** **sense**, eyes, light, **sight**, nose, nostril, **smell,** ears, **hearing,** sound, tongue, **taste**, sweet, salt, bitter, sour, savoury, **touch**, count, order, sort, heat, weight, feel, fair test, blindfold, sensory loss, **humans, living, mammal, warm-blooded, vertebrate, backbone**, breathe, feed, sleep, waste, excrete, grow, move, head, arms, legs, mouth, hands, feet, **fish**, **gills, fins,** limbs, **scales, cold-blooded, amphibian, skin, moist, slimy**, legs, **reptile, scaly, dry**, **bird, beak, feathers**, wings, **invertebrate, small, soft, hard**, shell, **carnivore, herbivore, omnivore, plants, meat,** vegetation, teeth, fur, hair	**Vocabulary:** plants, trees, deciduous, evergreen, woodland, meadow, bud, blossom, fruit, ripen, harvest, cycle, season, stem, root, leaf, flower, petal, seed, bulb, vein, stalk, blade, margin, shelter, hedgerow, garden, evergreen, trunk, bark, leaves

CYCLE B

YEAR ONE* AND YEAR TWO

SEASONAL CHANGES AND WEATHER

AUTUMN AND WINTER	SPRING AND SUMMER

Working scientifically:

Year 2

- **Ask simple questions and recognise that they can be answered in different ways.**
- **Perform simple tests.**
- **Observe closely using simple equipment.**
- **Identify and classify things they observe.**
- **Gather and record data to help in answering questions.**
- **Use their observations and ideas to suggest answers to questions.**

Year 1

- **Ask simple questions.**
- **Perform simple tests, with support.**
- **Observe using simple equipment.**
- **Identify and group things they observe, with support.**
- **Gather and record simple data.**
- **Use their observations and ideas to suggest answers to questions, with support.**

NATIONAL CURRICULUM

Pupils should be taught to:

- observe changes across the 4 seasons
- observe and describe weather associated with the seasons and how day length varies

Season Changes and Weather

Knowledge and Understanding:	Knowledge and Understanding:
L1 • **To know that there are names for each of the four seasons.** • **To know and describe key features of the four seasons.** **L2** • **To know that there are different months in each of the four seasons.** • **To know the different months in each of the four seasons.** **L3** • **To know that weather tells us what the sky and air is like outside.**	**L1** • **To know that the weather changes from winter to spring.** • **To know that the weather changes from winter to spring and independently describe the key changes.** **L2** • **To know that the changing weather and seasons has an impact on different plants and animals in spring and summer.**

• To know that weather tells us what the sky and air is like outside independently. **L4** • To know that there are weather patterns and weather symbols. • To know that there are weather patterns and use the weather symbols to describe the weather. **L5** • To know that we, as humans, might dress differently according to the weather outside. • To know that we, as humans, might dress differently according to the weather outside. Independently give examples. **L6** • To know that daylight hours change across autumn and winter. • To know and describe how the light hours change across autumn and winter. **L7** • To know that the changing weather and seasons has an impact on different plants and animals. • To know and describe how the changing weather and seasons has an impact on different plants and animals.	• To know that the changing weather and seasons has an impact on different plants and animals in spring and summer. To independently be able to describe the key changes of impact. **L3** • To know that there are weather patterns and weather symbols. • To know that there are weather patterns and use the weather symbols to describe the weather. **L4** • To know that changes can be seen in the weather from spring to summer. • To know that daylight hours change across spring and summer. • To know and describe how the light hours change across spring and summer. **L5** • To know that the changing seasons can affect humans. • To know and describe how the changing seasons can affect humans.
Vocabulary: season, autumn, winter, spring, summer, month, year, weather, colder, warmer, leaves, fruit, fall, nuts, animals. forecasts, fungi, migration, temperature, colder, daylight, longer forecast, sleet, snow, hibernate, adapt, active	**Vocabulary:** blossom, bud, crops daylight, insect, weather. celebration, degrees Celsius, festival, harvest, seasonal, temperature, thermometer

CYCLE B

YEAR THREE* AND YEAR FOUR

PHYSICS: **FORCES AND MAGNETS** **ADVENT 1**	**CHEMISTRY:** **ROCKS** **ADVENT 2**

Working scientifically:

Year 4

- **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.**
- **Identify differences, similarities or changes related to simple scientific ideas and processes.**
- **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.**
- **Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.**
- **Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.**
- **Use scientific evidence to answer questions or to support their findings.**

Year 3

- **Ask simple, relevant questions and use scientific enquiries to answer them.**
- **Set up simple practical enquiries, comparative and fair tests, with support.**
- **Make careful observations and, where appropriate, take measurements using standard units, using a range of equipment.**
- **Identify changes that relate to simple scientific ideas, when prompted.**
- **Gather, record, classify and present data in a variety of ways.**
- **Record findings using simple scientific language, drawings, labelled diagrams and tables.**
- **Use results to draw simple conclusions and raise further questions.**
- **Report on findings from enquiries, including oral and written explanations.**
- **Use scientific evidence to answer questions.**

NATIONAL CURRICULUM	
Physics – Forces and Magnets	Chemistry - Rocks
Pupils should be taught to: Year 3 (NC only) • compare how things move on different surfaces • notice that some forces need contact between 2 objects, but magnetic forces can act at a distance	Pupils should be taught to: Year 3 (NC only) • 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

• 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	• recognise that soils are made from rocks and organic matter
Knowledge and Understanding: **L1** • **To know that physics is a branch of science.** • **To know and give reasons why physics is a branch of science.** **L2** • **To know that a force is an action that changes or maintains the motion of an object.** • ***To know and describe how a force is an action that changes or maintains the motion of an object*** ***L3*** • **To know that friction is a stopping / slowing force.** • **To know and describe friction.** **L4** • **To know that a force meter measures a force or mass.** • **To know and explain that a force meter measures force or mass.** **L5/6** • **To know that magnetism is a non-contact force.** • **To know and explain that magnetism is a non-contact force.** **L6/5** • **To know that a magnet has a north and south pole.** • **To know and explain the effects of north and south poles on magnets.** **L7** • **To know that some materials are attracted to magnets and some are not.** • **To know and explain why some materials are attracted to magnets and some are not.** **L8** • **To know that William Gilbert discovered that the Earth was magnetic.** • **To know that William Gilbert discovered that the Earth was magnetic and the impact of this discovery.**	Knowledge and Understanding: **L1** • **To know that rocks can be grouped according to their appearance and physical properties.** • **To know that rocks can be grouped according to their appearance and physical properties.** **L2** • **To know that sedimentary rocks are formed from pre-existing rocks or pieces of once-living organisms.** • **To know and describe how sedimentary rocks are formed from pre-existing rocks or pieces of once living organisms.** **L3** • **To know that igneous rocks are formed from cooled lava.** • **To know and describe how igneous rocks are formed from cooled lava.** **L4** • **To know that metamorphic rocks were once igneous or sedimentary rocks.** • **To know and explain how metamorphic rocks were once igneous or sedimentary rocks.** **L5** • **To know that fossils are formed over millions of years.** • **To know explain that fossils are formed over millions of years.** **L6** • **To know that soils are made from rocks and organic matter.** • **To know and describe how soil is made from rocks and organic matter.** **L7** • **To know that Mary Anning was a pioneering fossil collector.** • **To know why Mary Anning is known as a pioneering fossil collector.**

Vocabulary:	Vocabulary:
physics, force, contact, non-contact, pairs, opposite, friction, movement, slows, smooth, rough, increase, decrease, reduce, forcemeter, mass, Newtons, kilograms, measure, magnet, magnetism, poles, magnetic field, attract, repel, attraction, repulsion, like, magnetic, non-magnetic, materials, iron, cobalt, nickel, aluminium, gold, copper, silver, alloy, lodestone, iron ore, spherical, sphere, compass	chalk, sandstone, permeable, erode, sedimentary, eroded, soft, particle, igneous, magma, lava, granite, pumice, impermeable, cooled, metamorphic, heat, pressure, fossil, sedimentary, preserved, organism, clay, sand, silt, organic matter, air, fossilised, pioneer, discovery, scientific, thought, hypothesis, equality, inequality

CYCLE B

YEAR THREE* AND YEAR FOUR

BIOLOGY: ANIMALS INCLUDING HUMANS LENT 1 and 2	BIOLOGY: PLANTS PENTECOST 1	PHYSICS: LIGHT PENTECOST 2

Working scientifically:

Year 4

- **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.**
- **Identify differences, similarities or changes related to simple scientific ideas and processes.**
- **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.**
- **Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.**
- **Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.**
- **Use scientific evidence to answer questions or to support their findings.**

Year 3

- **Ask simple, relevant questions and use scientific enquiries to answer them.**
- **Set up simple practical enquiries, comparative and fair tests, with support.**
- **Make careful observations and, where appropriate, take measurements using standard units, using a range of equipment.**
- **Identify changes that relate to simple scientific ideas, when prompted.**
- **Gather, record, classify and present data in a variety of ways.**
- **Record findings using simple scientific language, drawings, labelled diagrams and tables.**
- **Use results to draw simple conclusions and raise further questions.**
- **Report on findings from enquiries, including oral and written explanations.**
- **Use scientific evidence to answer questions.**

NATIONAL CURRICULUM

Biology – Animals including Humans	Biology – Plants	Physics – Light
Pupils should be taught to: Year 3 (Year 4 digestion teeth and food chain) • 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	Pupils should be taught to: Year 3 (NC only) • 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	Pupils should be taught to: Year 3 (NC only) • 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

• identify that humans and some other animals have skeletons and muscles for support, protection and movement	• 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	• 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
Knowledge and Understanding: **L1** • **To know that animals are grouped according to their characteristics. (Recap and build upon KS1 learning).** • **To know that animals are classified according to their characteristics. (Recap and build upon KS1 learning)** **L2** • **To know that humans have a skeleton for movement, support and protection.** • **To know and give reasons why humans have a skeleton.** **L3** • **To know that there are three joint types in the human body.** • **To know how the thee joint types are different to each other.** **L4** • **To know that there are three main types of muscles in the human body.** • **To know how the three main types of muscle are different to each other.** **L5** • **To know that bones and muscles work together.** • **To know how bones and muscles work together.** **L6** • **To know that skeletons vary between different animals.** • **To know and compare how animal skeletons vary between each other.**	Knowledge and Understanding: **L1** • **To know that plant parts have different functions.** • **To know and explain the different functions of plant parts.** **L2** • **To know that there are two main types of root systems.** • **To know and explain the two main types of root systems.** **L3** • **To know that water is transported in plants through the stem.** • **To know explain why water is transported in plants through the stem.** **L4** • **To know that leaves have two main functions.** • **To know and explain the two main functions of leaves.** **L5** • **To know that a flower has different parts and each part has a function.** • **To know and explain the different functions of a flower.** **L6** • **To know that all plants have a life cycle.** • **To know and explain the life cycle of a plant.** **L7** • **To know that pollination and seed dispersal is part of plant reproduction.**	Knowledge and Understanding: **L1** • **To know that dark is the absence of light and we need light to be able to see.** • **To know and recognize why dark is the absence of light and we need light to be able to see.** **L2** • **To know that a light source produces light and a reflector reflects light.** • **To know and explain and give examples of light sources producing light and a reflectors reflecting light.** **L3** • **To know that some materials are reflective and others non-reflective.** • **To know and compare materials and recognise if they are reflective and others non-reflective.** **L4** • **To know that the light from the Sun is dangerous.** • **To know and explain why the light from the Sun is dangerous.** **L5** • **To know that a shadow is made when an object blocks the passage of light from a light source.** • **To know and explain how a shadow is made when an object blocks the passage of light from a light source.** **L6** • **To know that different objects cast different shadows.** • **To know and explain how different objects cast different shadows.**

L7 • **To know that nutrition is important to keep animals and humans healthy.** • **To know and give reasons why nutrition is important to keep animals and humans healthy.** **L8** • **To know that nutrition is obtained through eating different food groups.** • **To know and identify which nutrition is obtained through eating different food groups** **L9** • **To know that different animals get the nutrition they need in different ways.** • **To know and describe how nutrition is obtained through eating different food groups.**	• **To know and explain the importance of pollination and seed dispersal ss part of plant reproduction.**	**L7** • **To know that shadows can change.** • **To know and explain how shadows can change.**
Vocabulary: **skeleton, exoskeleton, endoskeleton, bones, joint, muscles**, muscle groups, protection, movement, support, vertebrae, ligament, tendon, carbohydrates, carnivore, herbivore, omnivore, dairy, alternatives, diet, fibre, fruit, vegetables,malnutrition, mineral, nutrient, nutrition, oils, spreads, proteins, seasonal, vitamin	**Vocabulary:** fibrous roots, taproots, lateral roots, aerial roots, water, nutrients, xylem, transpiration, vessels, plant stems, photosynthesis, functions, distribution, transpiration, sunlight, nutrients, carpel, petal, stamen, sepal, anther, filament, life cycle, pollination, seed dispersal, germination, flower production, seed formation, pollination, stamen, ovary, pollinators	**Vocabulary:** light source, reflector, reflect, natural, artificial, produce, bounce, reflective, non-reflective, material, image, light rays, ultra-violet, dangerous, harmful, protection, vision, skin, invisible, shadow, cast, straight, block, shape, transparent, translucent, opaque, dark, light, blurry, change, high, low

CYCLE B

YEAR FIVE* AND YEAR SIX

PHYSICS: **EARTH AND SPACE** **ADVENT 1**	**PHYSICS:** **FORCES** **ADVENT 2**
Working scientifically: **Year 6** • **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.** • **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.** • **Identify scientific evidence that has been used to support or refute ideas or arguments.** **Year 5** • **Plan scientific enquiries to answer questions.** • **Take measurements, using a range of scientific equipment, with increasing accuracy and precision.** • **Record data and results using scientific diagrams and labels, classification keys, tables, bar and line graphs.** • **Report and present findings from enquiries, including conclusions, in oral and written forms such as displays and other presentations.** • **Use test results to make predictions to set up further tests.** • **Identify scientific evidence that has been used to support or disprove ideas.**	
NATIONAL CURRICULUM	
Physic – Earth and Space	Physics - Forces
Pupils should be taught to: Year 5 (NC only) • 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	Pupils should be taught to: Year 5 (NC only) • 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
Knowledge and Understanding: **L1** • **To know that the Solar System is made up of the Sun and everything that orbits around it.**	Knowledge and Understanding: **L1** • **To know that a force is a push or a pull that makes something move, change speed or change shape. (Y3 recap)**

• To know and explain the Solar System. **L2** • To know that the Earth, Moon and Sun are approximately spherical bodies. • To know that the Earth, Moon and Sun are approximately spherical bodies. **L3** • To know that the Moon and the Earth orbit the Sun. • To know and explain the effect of the Moon and the Earth orbiting the Sun. **L4** • To know that the day and night is due to the rotation of Earth on its axis. • To know and explain how day and night is due to the rotation of Earth on its axis. **L5** • I know that seasons and day lengths are due to the tilt, rotation and the Earth's orbit. • To know and explain the effect of the Earth's tilt, rotation and the Earth's orbit. **L6** • To know that the moon has different phases each month. • To know and explain the moon's different phases each month. **L7** • To know that Katherine Johnson was an American mathematician who worked for ASA. • To know explain the impact of Katherine Johnson's work, an American mathematician who worked for NASA.	• To know explain that a force is a push or a pull that makes something move, change speed or change shape. (Y3 recap) **L2** • To know that gravity is a force of attraction. • To know and explain that gravity is a force of attraction. **L3** • To know that friction is a contact force which opposes motion and slow objects down. • To know and explain that friction is a contact force which opposes motion and slow objects down **L4** • To know that air resistance is a type of friction. • To know and explain that air resistance is a type of friction. **L5** • To know that water resistance is a type of friction. • To know and explain that water resistance is a type of friction. **L6** • To know that levers and pulleys are mechanisms which give a mechanical advantage. • To know and explain how levers and pulleys are mechanisms which give a mechanical advantage. **L7** • To know that gears are mechanisms which give a mechanical advantage. • To know and explain how gears give a mechanical advantage.
Vocabulary: Solar System, Sun, planets, star, moon, orbit, ellipse, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Earth, heliocentric, sphere, spherical, gravity, mass, compress, natural satellite, rotate, rotation, axis, month, lunar, day, year, reflect, night, season, tilt, axis, rotate, face, shadow, angle, shorter, longer, lunar, phase, reflect, waning, waxing, gibbeous, crescent, first quarter, last quarter, mathematician, geometry, NASA, space travel, astronaut, flight path, exploration, legacy, impact, gender	**Vocabulary:** force, contact force, non-contact force, gravity, mass, weight, forcemeter, Newton, measurement, investigation, friction, movement, opposite, increase(d), decrease(d), air resistance, air, particles, streamlined, large, small, surface area, water resistance, water, particles, reduce, streamlined, lever, pulley, mechanism, arm, fulcrum, load, effort force, mechanical advantage, gears, linked, interlinked, toothed, wheels, rotate

CYCLE B

YEAR FIVE* AND YEAR SIX

BIOLOGY: LIVING THINGS AND THEIR HABITATS LENT 1	BIOLOGY: ANIMALS, INCLUDING HUMANS LENT 1	CHEMISTRY: PROPERTIES AND CHANGES OF MATERIALS PENTECOST 1 and 2

Working scientifically:

Year 6

- **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.**
- **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.**
- **Identify scientific evidence that has been used to support or refute ideas or arguments.**

Year 5

- **Plan scientific enquiries to answer questions.**
- **Take measurements, using a range of scientific equipment, with increasing accuracy and precision.**
- **Record data and results using scientific diagrams and labels, classification keys, tables, bar and line graphs.**
- **Report and present findings from enquiries, including conclusions, in oral and written forms such as displays and other presentations.**
- **Use test results to make predictions to set up further tests.**
- **Identify scientific evidence that has been used to support or disprove ideas.**

NATIONAL CURRICULUM

Biology – Living Things and their Habitats	Biology – Animals, including Humans	Chemistry – Properties and Changes of Materials
Pupils should be taught to: Year 5 (Year 6 – classification) • 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 Year 6 – Link	Pupils should be taught to: Year 5 (Year 6 – circulation, diet etc, nutrients transported) • describe the changes as humans develop to old age Year 5 - Link	Pupils should be taught to: Year 5 (NC only) • 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
Knowledge and Understanding: **L1** • **To know that the life cycle of an amphibian has five stages.** • **To know that the life cycle of an amphibian has five stages.** **L2** • **To know that the life cycle of an insect has four stages.** • **To know that the life cycle of an insect has four stages.** **L3** • **To know that the life cycle of a bird has five stages.** • **To know that the life cycle of a bird has five stages.** **L4** • **To know that there are differences in the life cycles of a mammal.** • **To know that there are differences in the life cycles of a mammal.** **L5** • **To know that there are four stages in the life cycle of a plant.** • **To know that there are four stages in the life cycle of a plant.**	Knowledge and Understanding: **L1** • **To know that humans are mammals and have a mammalian life cycle.** • **To know that humans are mammals and have a mammalian life cycle.** **L2** • **To know that humans go through characteristic stages as they develop towards old age.** • **To know that humans go through characteristic stages as they develop towards old age.** **L3** • **To know that juveniles go through rapid growth, change and development over time.** • **To know that juveniles go through rapid growth, change and development over time.** **L4** • **To know that puberty is the transition between childhood and adulthood.** • **To know that puberty is the transition between childhood and adulthood.** **L5** • **To know that as humans age, many of the body's systems gradually decline.** • **To know that as humans age, many of the body's systems gradually decline.**	Knowledge and Understanding: **L1** • **To know that materials have different properties. (Recap Y3 magnets & Y4 electricity)** • **To know that materials have different properties. (Recap Y3 magnets & Y4 electricity)** **L2** • **To know that materials can be grouped according to their basic physical properties.** • **To know that materials can be grouped according to their basic physical properties.** **L3** • **To know that know that some materials will dissolve in liquid to form a solution.** • **To know that know that some materials will dissolve in liquid to form a solution.** **L4** • **To know that some mixtures can be separated by sieving.** • **To know that some mixtures can be separated by sieving.** **L5** • **To know that some mixtures can be separated by filtration.** • **To know that some mixtures can be separated by filtration.**

L6 • **To know that most animals reproduce to pass on their genes.** • **To know that most animals reproduce to pass on their genes.**		**L6** • **To know that some mixtures can be separated by evaporation.** • **To know that some mixtures can be separated by evaporation.** **L7** • **To know that reversible changes include heating, cooling, melting, dissolving and evaporating.** • **To know that reversible changes include heating, cooling, melting, dissolving and evaporating.** **L8** • **To know that irreversible changes include burning, rusting, decaying and chemical reactions.** • **To know that irreversible changes include burning, rusting, decaying and chemical reactions.** **L9** • **To know that thermal conductors conduct heat.** • **To know that thermal conductors conduct heat.** **L10** • **To know that some materials are thermal insulators.** • **To know that some materials are thermal insulators.**
Vocabulary: life cycle, egg, larva, gills, forelimbs, adult, nymph, molt, adult, hatchling, chick, fledgling, adult, calf, juvenile, seed, germination, seedling, plant, fertilisation, anther, filament, receptacle, ovary, ovule, sepal, style, stigma, stamen, genes, fertilisation, reproduction	**Vocabulary:** human, mammal, life cycle, stages, birth, growth, reproduction, death, embryo, juvenile, adolescent, adult, puberty, baby, infant, toddler, child, adolescent, young adult, senior citizen, childhood, adulthood, transition, gestation, foetus, dependent, independent, development, physical, emotional, changes, sexual maturity, hormone, eyesight, hearing, skin, bones, joints, muscles, brain, organs, memory, body systems, decline, changes	**Vocabulary:** property, definition, absorbent, electrically conductive, magnetic, reflective, solubility, solutes, solvents, dissolving, evaporating, heterogeneous, homoegenous, reversible, sieving, filtration, variables, predictions, evaporating, mixtures, investigation, physical, chemical, irreversible, decaying, burning, rusting, changes, heating, melting, cooling, dissolving, solution, evaporation, molecules, states of matter, thermal conductors, particles, metallic bonds, thermocolour, electrical conductivity, thermal insulator, interpret, data, line graph, variable, uninsulated