EYFS		
Development matters age range	**ELG framework**	**Programme of Study**
EYFS Three and Four-Year-Olds	Communication and Language	• Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"
	Personal, Social and Emotional Development	• Make healthy choices about food, drink, activity and tooth brushing.
	Understanding the world	• Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Talk about what they see, using a wide vocabulary. • Begin to make sense of their own life-story and family's history. • Explore how things work. • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things. • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice.
Reception	Communication and Language	• Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts.
	Personal, Social and Emotional Development	• Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian

	Understanding the world		• Explore the natural world around them. • Describe what they see, hear and feel while they are outside. • Recognise some environments that are different to the one in which they live. • Understand the effect of changing seasons on the natural world around them.
ELG	Communication and Language	Listening, Attention and Understanding	• Make comments about what they have heard and ask questions to clarify their understanding.
	Personal, Social and Emotional Development	Managing self	• Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.
	Understanding the world	The Natural World	• Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Year 1						
Unit	**Seasonal Changes**	**Every day materials**	**Seasonal Changes**	**Animals including humans**	**Seasonal Changes**	**Plants**
N. C Overview	• observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies	• distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties Scientist Charles Macintosh	• observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies	• identify and name a variety of common 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	• observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies	• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees • Children will sketch common plants and observe them to identify similarities and differences.
Skills	**Observing** Take weather measurements and make observations over time (photos of what children are wearing through the year). Record time it gets dark each day. (This gathers evidence, over time, that day length changes and so do activities.) **Pattern seeking** At the end of the year,	**Classifying** Classify objects made from the same material (e.g. lots of things made from plastic). Classify one object made from different materials (e.g. cups made of different materials). Classify paper/plastics/fabrics. **Comparative/fair testing** Test objects made of different materials to see how effective they are	**Observing** Take weather measurements and make observations over time (photos of what children are wearing through the year). Record time it gets dark each day. (This gathers evidence, over time, that day length changes and so do activities.) **Pattern seeking** At the end of the year, look for	**Pattern seeking** Children generate questions for investigation such as: do people with longer arms have longer legs? Can more people identify prawn cocktail crisps than cheese and onion? Do all animals with … have …? **Comparative/fair testing** Can I taste the difference between different flavoured crisps/skittles/smarties?	**Observing** Take weather measurements and make observations over time (photos of what children are wearing through the year). Record time it gets dark each day. (This gathers evidence, over time, that day length changes and so do activities.) **Pattern seeking** At the end of the year, look for patterns in evidence e.g. Does it rain more in spring?	**Classifying** Allow children to classify leaves, flowers, and seeds, choosing their own criteria. **Observing** Observe a tree through the year. Observe a trail/patch to identify how plants change through year. **Pattern seeking** Based on observations, encourage children to identify patterns using magnifying glasses e.g. after

	look for patterns in evidence e.g. Does it rain more in spring? Do we have more sunny days in the summer? Which was the coldest month?	e.g. umbrellas/hats/coats for waterproofness, cloths/nappies for absorbency, socks for elasticity etc.	patterns in evidence e.g. Does it rain more in spring? Do we have more sunny days in the summer? Which was the coldest month?		Do we have more sunny days in the summer? Which was the coldest month?	comparing the size of leaves on different plants, chn may suggest "bigger plants, bigger leaves. **Researching** Use secondary sources to name plants (including trees) based on observations of leaves, seeds, flowers, buds, and bark
Vocabulary	Autumn, winter, spring, summer, temperature, rainfall, snow, , leaves, change, hedgehog, hibernates, hibernation, weather, diary, report, temperature, thermometer, symbol, clothes, seasons, weather, winter, leaves, change, migrate, migration, Seasons, autumn, spring, summer, winter, weather, changes, observe, diary, similarities, differences	Materials: wood, plastic, glass, metal, water, and rock Properties: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent	Autumn, winter, spring, summer, temperature, rainfall, snow, , leaves, change, hedgehog, hibernates, hibernation, weather, diary, report, temperature, thermometer, symbol, clothes, seasons, weather, winter, leaves, change, migrate, migration, Seasons, autumn, spring, summer, winter, weather, changes, observe, diary, similarities, differences	Habitat, fish, amphibians, reptiles, birds and mammals head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth Senses- touch , taste, smell, hear, see	Autumn, winter, spring, summer, temperature, rainfall, snow, , leaves, change, hedgehog, hibernates, hibernation, weather, diary, report, temperature, thermometer, symbol, clothes, seasons, weather, winter, leaves, change, migrate, migration, Seasons, autumn, spring, summer, winter, weather, changes, observe, diary, similarities, differences	deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem

Year 2				
Unit	**Animals including humans**	**Everyday materials**	**Living things and their habitats**	**Plants**
N.C. Overview	• 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	• 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 will find out about people who have developed useful new materials, for example John Dunlop or John McAdam.	• 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	• 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
Skills	**Observing**, through video or first-hand observation and measurements, how different animals, including humans grow;	**Comparing** the uses of everyday materials in and around the school with materials found in other places (home, school journey) **Observe** closely and identify and classify the uses of different materials and record their observations.	**Sorting and classifying** things according to whether they are living, dead or were never alive, and recording their findings	**Observe and record** the growth of a variety of plants as they change from a seed; observe similar plants at different stages of growth;

	ask questions about what things animals need for survival and what humans need to stay healthy and suggest ways to find answers to questions.		using charts; describe how they decided where to place things; exploring questions like "Is a flame alive?" "Is a deciduous tree dead in winter?" and how to answer these; **Construct a simple food chain** that includes humans; describe the conditions in different habitats and microhabitats and find out how the conditions affect the number and type of plants and animals that live there.	setting up a **comparative test** to show that plants need light and water to stay healthy.
Vocabulary	Offspring, babies, toddlers, child, teenager, adult, elderly, parent, chronological, healthy, unhealthy, muscles, diet, nutrition, exercise, protein, carbohydrates, fats, dairy, vitamins, skeleton, heart rate, pulse, observe, grouping, classifying	Grouping, classifying, comparison, properties, transparent, flexible, rigid, strong, absorbent, waterproof, suitability, magnetic, non-magnetic	Habitat, suited, compare, explore, living, dead, micro-habitats, food chains, sources of food, producer, predator, research, grouping, classifying	Roots, leaves, stem, petal, flower, bud, seed, seedling, observe, grow, measure, height, water, light, temperature

Working scientifically

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

• asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	• recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings.

Year 3					
Unit	**Rocks and fossils**	**Animals including humans**	**Plants**	**Light**	**Forces and magnets**
N.C. Overview	• 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 Scientists: Mary Anning	• 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	• 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	• 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	• compare how things move on different surfaces • notice that some forces need contact between 2 objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others • compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • describe magnets as having 2 poles • predict whether 2 magnets will attract or repel each other, depending on which poles are facing
Skills	**Observe** rocks e.g. in buildings and gravestones and explore how and why they might have changed over time;	**Identify and group** animals with and without skeletons and observe and compare their movement; **explor**e ideas about what would happen if humans	**Comparing** the effect of different factors on plant growth. E.g. the amount of light or fertiliser; **discover** how seeds are formed by observing the different stages of plant life cycles over a period of time; **looking for patterns** in the structure of fruits that relate to how the seeds are dispersed; **observe** how water is transported in	Look for patterns in what happens to shadows when the light source moves or the distance between the blight source and the object changes. **Measure**	**Compare** how different things move and group them; **raise questions and carry out tests** to find out how far things move on different surfaces, and

	using a hand lens or microscope to help them to identify and **classify** rocks according to whether they have grains or crystals, and whether they have fossils in them; **research and discuss** the different kinds of living things whose fossils are found in sedimentary rock and	did not have skeletons; **compare and contrast** the diets of different animals and decide ways of grouping them according to what they eat. **Research** different food groups and how they keep us healthy; **design** meals based on what they find out.	plants. E.g. by putting white carnations into coloured water and observing how water travels up the stem to the flowers. **Record findings and interpret**	**shadows and draw conclusions**	**gather and record data** to find answers to their questions; **explore** the strengths of different magnets and find a fair way to **compare** them; **sort** materials into those that are magnetic and those that are not; **identify** for patterns in the way that magnets behave in relation to each other and what might affect this. E.g. the strength if the magnet or which pole faces another; **identify** how these properties make magnets useful in everyday items and suggest creative uses for different magnets.
Vocabulary	Appearance, physical, properties, hard/ soft, shiny/dull, rough/smooth, absorbent/not absorbent, porous, fossils, sedimentary, igneous	Nutrition, vitamin, mineral, fat, protein, carbohydrate, fibre, water, skeleton – support and protection, movement, skull, ribs, joints, muscles – movement, pull, contract, relax, diet, vertebrate, invertebrate. Record, table, accurate	Common, wild plants, garden plants, deciduous, evergreen (covered in Y1 but need to come back to) Trunk, branches, leaf, root, leaves, bud, flowers, blossom, petals, root, stem (covered in Y2 but need to come back to) Fruit, vegetables, bulb, seed Pollination, seed formation, seed dispersal, germination, transport Conclusion, evidence, prediction	Dark (knowing that dark is the absence of light, not a colour in itself), reflect, surface, natural, shadow, translucent, opaque, transparent, blocked, artificial, Research, enquiry, fair test	Force, push, full, open, surface, magnet, magnetic, attract, repel, magnetic poles, North, South, compare Labelled diagram, observe

Year 4					
Unit	**Electricity**	**States of matter**	**Animals including humans**	**Sound**	**Living things and their habitat**
N.C. Overview	• 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	• 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	• describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey	• identify how sounds are made, associating some of them with something vibrating • recognise that vibrations from sounds travel through a medium to the ear • find patterns between the pitch of a sound and features of the object that produced it • find patterns between the volume of a sound and the strength of the vibrations that produced it • recognise that sounds get fainter as the distance from the sound source increases	• 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 Using the local environment – coast and country Scientist –Seirian Summer (wasps)

	with being good conductors				
Skills	**Observing** patterns e.g that bulbs get brighter if more cells are added; that metals tend to be conductors of electricity; that some materials can and some cannot be used too connect a gap in a circuit.	**Grouping and classifying** a variety of different materials; **explore** the effect of temperature on substances such as chocolate, butter; research the temperature at which materials change state e.g. when iron melts or when oxygen condenses into a liquid; observe and record evaporation over a period of time e.g. a puddle in the playground or washing on a line; **investigate** the effect of temperature on washing drying or snowmen melting **Record and report upon findings**	**Compare** the teeth of carnivores and herbivores and suggest reasons for their differences; **identify** what damages teeth and how to look after them; **draw and discuss** their ideas about the digestive system and compare them with models or images.	**Find patterns** in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses. / **Make** earmuffs from a variety of different materials to investigate which provides the best insulation against sound; make and play their own instruments by using what they have found out about pitch and volume.	Use and make simple **guides or keys** to explore and **identify** local plants and animals; make a guide to local living things**; questions** based on their **observations** of animals and what they have found out about other animals that they have researched.
Vocabulary	Appliance, electricity, electrical circuit, cell, wire, bulb, buzzer, insulator, conductor, switch	Solid, solidify, melt, freeze, evaporate, condense, liquid, gas, container, changing state, states of matter, heating, cooling, degrees Celsius, thermometer, water cycle, melting, temperature, water vapour Record, table, accurate	Digestion, parts of system – mouth, saliva, oesophagus, stomach, enzymes, small intestine, large intestine, colon Teeth – incisor, canine, molars, floss, brush Food chain – producers, prey, predators, carnivore, herbivore, omnivore. (revisit from Y2)	Vibrate/tion/ting, medium, volume, pitch, faint, string, percussion, woodwind, brass, insulate	Environment, flowering, non-flowering, fish, amphibian, reptile, bird, mammal, insect, classify, classification key, local, human impact Record, accurate

Working scientifically

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

• Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, talking repeat readings when appropriate. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	• Using test results to make predictions to set up further comparative and fair tests. • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations. • Identifying scientific evidence that has been used to support or refute ideas or arguments.

Year 5					
Unit	**Earth and Space**	**Forces**	**Living things and habitats**	**Animals including humans**	**Properties and changes in materials**
N.C. Overview	• 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 Scientist Maggie Aderin-Pocock	• 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 Scientists – Aristotle, Galileo Galilei, Isaac Newton	• 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 Scientist: David Attenborough	• describe the changes as humans develop to old age	• 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 Scientists Spencer Silver and Ruth Benerito
Skills	**Compare** the time of day at different places on the Earth through internet links and direct communication; **creating** simple models of the solar system; **constructing** simple shadow clocks and sundials	**Comparative/fair testing** Air resistance - Carrying out a scientific enquiry into air resistance (effective paper aeroplane shapes)– identifying and controlling variables **Taking measurements,** with a range of scientific equipment accurately and	**Classifying** Classify animals according to their life cycle **Observing** over time Grow from cuttings and observe whether they grow roots/stem/ leaf/flower. Grow from, and harvest, bulbs through the year. (Observe strawberry/spider plants	**Researching** characteristics of humans at different points in development. **Writing questions** for an expert like a doctor, nurse or health visitor. **Research** the gestation periods of other animals and compare them with humans; find out and record the length	**Comparative/ fair testing** Test solids for solubility and compare rates of solubility **Taking measurements**, with a range of scientific equipment accurately and precisely and, taking repeat readings **Recording data and results** using tables, scatter graphs, bar and line graphs **Reporting and presenting** findings from enquiries, including conclusions, causal relationships and explanations. Was the change reversible or irreversible e.g. melting vs burning? Which materials would be good

	Researching Identifying scientific evidence that has been used to support or refute ideas or arguments	precisely and, taking repeat readings (distance) **Recording data** and results using scientific diagrams, tables and graphs **Reporting and presenting** findings from enquiries, including conclusions, causal relationships and explanations Water resistance - **Planning a scientific enquiry** into water resistance (boats in gutter of water, plasticine in a cylinder of liquid easier with more viscose liquid e.g. with bubble bath)– **identifying and controlling variables** Friction - **Compare** fiction by using a forcemeter – trainers or weighted match box to pull along surfaces	through the year. **Pattern seeking** Children generate questions such as: Do larger mammals have longer gestation periods? Do larger animals live longer? Do smaller animals lay more eggs? **Observing over time** Observing changes in an animal over a period of time by hatching chicks **Researching** Research how gardeners asexually reproduce plant	and mass of a baby as it grows.	for a tent? Good to make a tea bag from? Good to keep things warm/cold? **Observing** over time Observing rusting and uncoated nails in different liquids (remove coating with sandpaper) **Classifying** After observing what happens when solids are added to liquids, classify the materials based on the outcomes
Vocabulary	Solar system, rotate, orbit, axis, spherical, heliocentric, geocentric, tilt, hemisphere.	Gravity, air resistance, water resistance, friction, effect, accelerate, decelerate, break, mechanism, pulley, gear, spring.	Classify, reptile, amphibian, insect, bird, vertebrate, invertebrate, warm/cols blooded	Mammal, amphibian, insect, reproduction, asexual, sexual, micro-organisms, classifying, characteristics, foetus, adolescence, fertilisation, gestation, embryo.	Solubility, transparency, thermal, conductor, conductivity, dissolve/ing, solution, separate, evaporate/ion, reversible, irreversible, filtering, sieving, rusting, magnetism, chemists, insulation, chemical

Year 6						
Unit	**Animals including humans**	**Light**	**Evolution and inheritance**		**Living things and their habitats**	**Electricity**
N.C. Overview	• 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.	• 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. (Notes- Build on from Y3, exploring the way that light behaves, including light sources, reflection and shadows. Talk	• 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. (Notes- Building on their Y3 work on fossils and rocks, pupils should find out how living things on Earth have changed over time. / Characteristics are passed from parents to their offspring e.g. dogs → Labradors and poodles. / Variation in		• 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. (Notes- Look at classification in more detail. Broad groupings, such as microorganisms, plants and animals can be subdivided. Through direct observations, they should classify animals into commonly found invertebrates and vertebrates. Discuss reasons why living things are placed in one group and not another) Scientist – Carl Linnaeus	• 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 Scientist – Thomas Eddison, Joseph Swan

		about what happens and make predictions.)	offspring over time can make animals more or less able to survive in particular environment e.g. how giraffes' necks got longer or insulating fur on the artic fox. / Pupils aren't expected to understand how genes and chromosomes work. Scientist – Charles Darwin			
Skills	**Explore the work of scientists and scientific research** about the relationship between diet, exercise, drugs, lifestyle **Comparative/ fair testing** Exercise and pulse experiment **Planning an enquiry** to answer a question (recognising and controlling variable for fair test) **Taking measurements,** with a range of scientific equipment accurately and precisely and, taking repeat readings **Recording data** and results using tables and scatter graphs and line graphs **Reporting** and presenting findings from enquiries, including conclusions, causal	**Comparative/ fair testing** Investigate the shape of shadows and link this to light travelling in straight lines. Extend their experience of light by looking at a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters.	- **Observe and question** about local animals and how they are adapted to their environment; **comparing** how some living things are adapted to survive in extreme conditions e.g. cactuses, penguins and camels; **analyse the advantages** and disadvantages of specific adaptations such as being on 2 feet rather than 4, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers		**Use classification systems** and keys to identify some animals and plants in the immediate environment; **resear**ch unfamiliar animals and plants from a broad range of other habitats and decide whether they belong in the classification system	**Comparative/ fair testing** Experimenting with voltage – brightness and volume (adding more bulbs/cells to a circuit) Systematically identifying the effect of changing one component at a time in a circuit **Planning an enquiry** to answer a question (recognising and controlling variable for fair test) **Recording data** and results using scientific diagrams and labels (of circuits) Using test results to **make predictions** for further testing – from lamp to buzzer Reporting and presenting findings from enquiries, including **conclusions,** causal relationships and explanations

	relationships and explanations					
Vocabulary	Organs, heart, lungs, liver, kidney, brain, skeletal, skeleton, muscular, digestion, circulatory system, blood vessel, nutrients, veins, artery, chamber, ventricles	Reflect, Reflection, Source, periscope, filters. Variables, Repeat reading, precision, fair test	Adaptation, evolution, inherited/ance, adaptive traits, natural selection, DNA, genes, variation, offspring, habitat, fossilisation, mutations		Aristotle – classification system Microorganisms bacteria, viruses, yeast and fungus	Voltage, switches, series circuit, circuit diagram Revisit: Appliance, electricity, electrical circuit, cell, wire, bulb, buzzer, insulator, conductor, switch Variables, Repeat reading, precision, fair test