EYFS:

	Spring 1	Spring 2	Summer 2	Summer 1	Autumn 2	Autumn 1
Harmony Principle	Adaptation Oneness Interdependence Cycles Health Diversity In EYFS the principles underpin each enquiry					
Enquiry Question	How do we help each other? Traditional Tales	What can we learn about life cycles on a farm?	What can we grow?	What lives outside our classroom?	What makes me special?	How do people celebrate around the world?
Reception	Science at Foundation Stage is covered in **'Understanding the World'**. It is introduced indirectly through activities that encourage every child to explore, problem solve, observe, predict, think, make decisions and talk about the world around them. During their time in reception, children will explore creatures, people, plants and objects in their natural environments. They will observe and manipulate objects and materials to identify differences and similarities. They will also learn to use their senses, feeling dough or listening to sounds in the environment, such as sirens or farm animals. They will make observations of animals and plants and explain why some things occur and talk about changes. Children will be encouraged to ask questions about why things happen and how things work. They might do activities such as increasing the incline of a slope to observe how fast a vehicle travels or opening a mechanical toy to see how it works. Children will also be asked questions about what they think will happen to help them communicate, plan, investigate and evaluate their findings.					

	Links to Development Matters Children in Reception will be learning to: • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. • Recognise some environments that are different from the one in which they live. • Understand the effect of changing seasons on the natural world around them. At the end of reception children at the expected level of development will:
	• 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.

Y1: Seasonal changes, Animals including humans, Everyday materials & Plants

	Spring 1	Spring 2	Summer 2	Summer 1	Autumn 2	Autumn 1
Harmony Principle	Adaptation	Oneness	Interdependence	Cycles	Health	Diversity
Enquiry Question	Where do we live and what makes it special? (One community)	What would it be like to live on an island elsewhere in the world? (One world)	What will we find at the seaside?	Which is my favourite wildflower and why?	What outdoor games can we play in Nature? (One class)	What kind of superhero do I want to be? (One me)
Y1	Animals including humans	Everyday materials	Animals including humans	Plants	Everyday materials	Animals including humans

Statutory	1. Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals 2. Identify and name a variety of	1. Observe changes across the 4 seasons 2. Observe and describe weather associated with the seasons and how day length varies	1. Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals 2. Identify and name a variety of	1. Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees 2. Identify and describe the basic	1. Distinguish between an object and the material from which it is made 2. Identify and name a variety of everyday materials,	1. Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals 2. Identify and name a variety of

	common animals that are carnivores, herbivores and omnivores 3. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) 4. Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense		common animals that are carnivores, herbivores and omnivores 3. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) 4. Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	structure of a variety of common flowering plants, including trees	including wood, plastic, glass, metal, water, and rock 3. Describe the simple physical properties of a variety of everyday materials 4. Compare and group together a variety of everyday materials on the basis of their simple physical properties	common animals that are carnivores, herbivores and omnivores 3. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) 4. Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense

Sustainability Theme	Learning from the past to create a better future	Climate Change and Energy Use	Cycles and Waste	Biodiversity	Health and wellbeing	Food and farming
Skills Progression	Testing Perform simple tests e.g. □ Which materials keep things warmest? Know whether the test has been successful and can say what has been learned.	Scientific Questioning Ask simple questions and recognise that they can be answered in different ways e.g. □ Why are flowers different colours? □ Why do some animals eat meat and others do not?	Measuring Use simple equipment to observe closely	Gathering & Recording Gather and record data to help in answering questions	Communicating Findings Make a simple written explanation about what has been learned from an investigation or what conclusions have been found.	Classifying Identify and classify e.g. Mammals and birds
Skills Progression	Scientific Research N/A	Concluding & Questioning N/A	Using Scientific Evidence N/A			

Key Vocab **aim answers block diagrams changes compare describe difference different enquiry equipment experience explore findings**	• Names of animal groups: **fish, amphibians, reptiles, birds, mammals.** • Animal diets: **carnivore, herbivore, omnivore.** • Human and animal body parts: e.g. body, head, neck, arms, elbows, legs, knees, face, ears, eyes, nose,	• **Seasons**: **spring, summer, autumn, winter**, seasonal change. • **Weather**: e.g. sun, rain, snow, sleet, frost, ice, fog, cloud, hot/warm, cold, storm, wind, thunder, weather forecast. • Measuring weather: temperature,	• Names of animal groups: **fish, amphibians, reptiles, birds, mammals.** • Animal diets: **carnivore, herbivore, omnivore.** • Human and animal body parts: e.g. body, head, neck, arms, elbows, legs, knees, face, ears, eyes, nose,	• Names of common plants: **wild plant, garden plant, evergreen** tree, **deciduous** tree, common flowering plant, **weed,** grass. • Name some features of plants: e.g. **flower,** vegetable, **fruit,** berry,	• Names of **materials**: wood, plastic, glass, metal, water, rock, paper, cardboard, rubber, fabric. • Properties of materials: **hard, soft, shiny, dull, stretchy**, **rough**, **smooth, bendy, not bendy, transparent, opaque, waterproof, not waterproof**,	• Names of animal groups: **fish, amphibians, reptiles, birds, mammals.** • Animal diets: **carnivore, herbivore, omnivore.** • Human and animal body parts: e.g. body, head, neck, arms, elbows, legs, knees, face, ears, eyes, nose,

gather group identify (name) investigate measure notice observe patterns pictograms questions record same similarity simple tables sort sorting diagrams tally charts test What will we do? (plan) What do you think will happen? (prediction) What happened? (results) What have we found out? (conclusion)	hair, mouth, teeth, hands, feet, tail, wings, feathers, fur, beak, fins, gills. • Human senses: **sight, hearing, touch, smell, taste.** • Exploring senses: loud, quiet, soft, rough. • Other: human, animal, pet.	rainfall, wind direction, thermometer, rain gauge. • Day length: night, day, **daylight.**	hair, mouth, teeth, hands, feet, tail, wings, feathers, fur, beak, fins, gills. • Human senses: **sight, hearing, touch, smell, taste.** • Exploring senses: loud, quiet, soft, rough. • Other: human, animal, pet.	**leaf/leaves**, blossom, **petal**, **stem**, trunk, branch, **root**, **seed, bulb,** soil. • Name some common types of plant e.g. sunflower, daffodil.	**absorbent, not absorbent,** sharp, stiff. • Other: **object.**	hair, mouth, teeth, hands, feet, tail, wings, feathers, fur, beak, fins, gills. • Human senses: **sight, hearing, touch, smell, taste.** • Exploring senses: loud, quiet, soft, rough. • Other: human, animal, pet.

Y2: Uses of everyday materials, Animals including humans, Plants & Living things and their habitats

	Spring 1	Autumn 2	Summer 1	Summer 2	Autumn 1	Spring 2
Harmony Principle	Adaptation	Oneness	Interdependence	Cycles	Health	Diversity
Enquiry Question	How did London change after the Great Fire?	Where are the polar regions and why are they changing?	Why are bees so brilliant?	Why should we reduce, reuse and recycle?	What do I need to be healthy?	What different plants can I grow?
Y2	Uses of everyday materials	Living things and their habitats	Living things and their habitats	Uses of everyday materials	Animals including Humans	Plants

Statutory	1. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	1. Explore and compare the differences between things that are living, dead, and things that have never been alive 2. Identify that most living things live in habitats to which they are	1. Explore and compare the differences between things that are living, dead, and things that have never been alive 2. Identify that most living things live in habitats to which they are	1. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	1. Notice that animals, including humans, have offspring which grow into adults 2. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)	1. Observe and describe how seeds and bulbs grow into mature plants 2. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy

	2. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	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 3. Identify and name a variety of plants and animals in their habitats, including microhabitats 4. 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	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 3. Identify and name a variety of plants and animals in their habitats, including microhabitats 4. 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	2. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	3. Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	

Sustainability Theme	Learning from the past to create a better future	Climate Change and Energy Use	Biodiversity	Cycles and Waste	Health and wellbeing	Food and farming
Skills Progression	Testing Perform simple comparative and tests e.g. Finding out how seeds grow best	Scientific Questioning Ask simple questions and recognise that they can be answered in different ways including use of scientific language from the national curriculum e.g. Why do some trees lose their leaves in autumn and others do not? How long are the roots of tall trees? Why do some animals have underground habitats?	Measuring Use simple equipment such as thermometers and rain gauges to observe closely changes over time	Gathering & Recording Gather and record data to help in answering questions including from secondary sources of information using drawings, labelled diagrams, block graphs or tables	Communicating Findings Communicate his/her ideas, what he/she does and what he/she finds out in a variety of ways e.g. simple written reports or write ups	Classifying Identify, group and classify according to a given criteria e.g. Deciduous and coniferous trees using a Venn Diagram

Skills Progression	Scientific Research N/A	Concluding & Questioning Use his/her observations and	Using Scientific Evidence N/A			
		ideas to suggest answers to questions noticing similarities, differences and patterns				

Key Vocab aim answers block diagrams changes compare describe difference different enquiry equipment experience explore findings gather group identify (name) investigate measure notice observe patterns pictograms	• Changing shape: squash, bend, twist, stretch. • **Properties of materials:** e.g. strong, flexible, light, hardwearing, elastic. Other: **suitability**, recycle, pollution	• Living or dead: **living, dead, never living,** not living, alive, never been alive, healthy. • **Habitats** including **microhabitats**: **depend,** shelter, safety, **survive**, suited, space, minibeast, air. • **Life processes:** movement, sensitivity, growth, reproduction, nutrition, excretion, respiration. • **Food chains: food sources,** food, producer,	• Living or dead: **living, dead, never living,** not living, alive, never been alive, healthy. • **Habitats** including **microhabitats**: **depend,** shelter, safety, **survive**, suited, space, minibeast, air. • **Life processes:** movement, sensitivity, growth, reproduction, nutrition, excretion, respiration. • **Food chains: food sources,** food, producer,	• Changing shape: squash, bend, twist, stretch. • **Properties of materials:** e.g. strong, flexible, light, hardwearing, elastic. Other: **suitability**, recycle, pollution	• Being born and growing: **Young, offspring, live young**, grow, **develop**, change, hatch, lay, fly, crawl, talk. • Young and adult names: e.g. lamb and sheep, kitten and cat, duckling and duck. • **Life cycle** stages: e.g. baby, toddler, child, teenager, **adult;** frogspawn, tadpole, froglet, frog. • Survival and staying healthy: basic needs, survive, food, air, **exercise, diet, nutrition,**	• Growth of plants: **germination**, **shoot, seed dispersal,** grow, food store, life cycle, die, wilt, seedling, sapling. • Needs of plants: **sunlight, nutrition,** light, healthy, space, air. • Name different types of plant: e.g. bean plant, cactus. • Names of different habitats: e.g. rainforest, desert. Previously introduced vocabulary: **water**,

questions **record** **same** **similarity simple** **tables sort** **sorting diagrams** **tally charts** **test** **What will we do? (plan)** **What do you think will happen? (prediction)** **What happened? (results)** **What have we found out? (conclusion)**		consumer, predator, prey. • Names of habitats and microhabitats: e.g. under leaves, woodland, rainforest, sea shore, ocean, urban, local habitat. Previously introduced vocabulary: senses, **carnivore**, **herbivore**, **omnivore**, **seed**, **water**, names of materials.	consumer, predator, prey. • Names of habitats and microhabitats: e.g. under leaves, woodland, rainforest, sea shore, ocean, urban, local habitat. Previously introduced vocabulary: senses, **carnivore**, **herbivore**, **omnivore**, **seed**, **water**, names of materials.		healthy, balanced diet, **hygiene, germs.** • Food groups: fruit and vegetables, proteins, dairy and alternatives, carbohydrates, oil and spreads, fat, salt, sugar. Previously introduced vocabulary: **water**.	**temperature**, warm, hot, cold, habitat.

Y3: Plants, Animals including Humans, Rocks, Light, Forces & Magnets

	Spring 1	Spring 2	Summer 2	Autumn 2	Autumn 1	Summer 1
Harmony Principle	Oneness	Adaptation	Health	Interdependance	Cycles	Diversity
Enquiry Question	Why were the Romans so successful in Britain?	What is the story of Planet Earth?	Where does our food come from?	How can we identify native trees in autumn?	Was pre-historic man healthy?	Why should we protect the biodiversity of the rainforest?
Y3	Rocks	Forces & Magnets *(Light)*	Animals including humans	Plants	Plants	Light

Statutory	1. Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties 2. Describe in simple terms how fossils are formed when things that have lived are trapped within rock	1. Compare how things move on different surfaces 2. Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance 3. Observe how magnets attract or repel each	1. 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 2. Identify that humans and some other animals have skeletons and	1. Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers 2. Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they	1. Recognise that they need light in order to see things and that dark is the absence of light 2. Notice that light is reflected from surfaces 3. Recognise that light from the sun can be dangerous and that there	1. 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 2. Identify that humans and some other animals have skeletons and

	3. Recognise that soils are made from rocks and organic matter	other and attract some materials and not others 4. 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 5. Describe magnets as having 2 poles 6. Predict whether 2 magnets will attract or repel each other, depending on	muscles for support, protection and movement	vary from plant to plant 3. Investigate the way in which water is transported within plants 4. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	are ways to protect their eyes 4. Recognise that shadows are formed when the light from a light source is blocked by an opaque object 5. Find patterns in the way that the size of shadows change	muscles for support, protection and movement

		which poles are facing				
Sustainability Theme	Learning from the past to create a better future	Climate Change and Energy Use	Food and farming	Cycles and Waste	Health and wellbeing	Biodiversity
Skills Progression	Testing Set up simple practical enquiries, comparative and fair tests e.g. To see which type of soil is most suitable when growing two similar plants? To see if their right hand is as efficient as their left Set up a fair test with different variables e.g. the best conditions for a plant to grow	Scientific Questioning Ask relevant questions and use different types of scientific enquiries to answer them e.g. Why does the moon appear as different shapes in the night sky? Why do shadows change during the day? Where does a fossil come from?	Measuring Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	Gathering & Recording Gather, record, classify and present data in a variety of ways to help in answering questions, drawing labelled diagrams, keys and child constructed bar charts and tables	Communicating Findings Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Classifying Group information according to common factors e.g. plants that grow in woodland/plants that grow in gardens using Venn Diagrams with bisecting sets or Carroll Diagrams

	□ Can explain to a partner why a test is a fair one					
Skills Progression	Scientific Research Use research to find out a range of things e.g. □ How reflections can help us see things that are around the corner □ What are the main differences between sedimentary and igneous rocks?	Concluding & Questioning Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Using Scientific Evidence Use straightforward scientific evidence to answer questions or to support his/her findings			

Key Vocab **accurate bar chart chart classify comparative test conclusion (What have we found out?) criteria data develop diagram evaluate**	• Types of rock: **sedimentary rock, igneous rock, metamorphic rock**. • **Properties of rocks: permeable,** semi-permeable, **impermeable,** durable. • Names of rocks: e.g. marble, chalk, granite, sandstone, slate.	• How things move: move, movement, **surface**, distance, strength. • Types of **forces**: push, pull, contact force, non-contact force, **friction**. • **Magnets: magnetic, magnetic field,**	• Food groups and **nutrients**: fibre, fats **(saturated and unsaturated**), vitamins, minerals. • Skeletons and muscles: skeleton, **muscles, tendons, joints,** protection, support, organs, voluntary	• Water transportation: transport, **evaporation, evaporate, nutrients,** absorb, anchor. • Life cycle of flowering plants: **pollination** (insect/wind), pollen, nectar, pollinator, seed formation, **seed dispersal** (animal/wind/water),	• **Light** and seeing: **dark,** absence of light, **light source,** illuminate, visible, **shadow, translucent,** energy, block. • **Light sources:** e.g. candle, torch, fire, lantern, lightning.	• Food groups and **nutrients**: fibre, fats **(saturated and unsaturated**), vitamins, minerals. • Skeletons and muscles: skeleton, **muscles, tendons, joints,** protection, support, organs, voluntary

evidence explanation key making a test fair method observations plan (What will we do?) practical enquiry prediction (What do you think will happen?) primary sources questioning reasoning relationships results (What happened?) secondary sources standard units table What do we change, what do we keep the same, what are we measuring?	• <u>Formation of rocks and fossils:</u> natural, humanmade, **magma, lava,** molten rock, **sediment, erosion, fossilisation,** layers, bone, fossil. • <u>Soil:</u> sandy, chalky, clay, peaty, loamy, topsoil, subsoil, bedrock, mineral, organic matter, compost. • <u>Other:</u> **palaeontology**. Previously introduced vocabulary: soil, **water**, air.	magnetic force, bar magnet, horseshoe magnet, ring magnet, magnetic **poles** (north pole, south pole), **attract, repel,** compass. • <u>Magnetic and non-magnetic materials</u>: e.g. iron, nickel, cobalt. Previously introduced vocabulary: metal, names of materials.	muscles, involuntary muscles, biceps, triceps, contract, relax, bone, cartilage, shell, **vertebrate, invertebrate,** endoskeleton, exoskeleton, hydrostatic skeleton. • <u>Names of human bones:</u> e.g. skull, spine, backbone, vertebral column, ribcage, pelvis, clavicle, scapula, humerus, ulna, pelvis, radius, femur, tibia, fibula. • Other: **energy**. Previously introduced vocabulary: movement.	reproduce, **fertilisation,** fertilise, **stamen,** anther, filament, **carpel (pistil),** stigma, style, ovary, ovule, **sepal**, carbon dioxide. Previously introduced vocabulary: life cycle.	• **<u>Reflective light:</u> reflect, reflection,** surface, **ray**, scatter, reverse, beam, angle, mirror, moon. • <u>Sun safety:</u> dangerous, glare, damage, UV light, UV rating, sunglasses, direct. Previously introduced vocabulary: **opaque, transparent,** sunlight, sun.	muscles, involuntary muscles, biceps, triceps, contract, relax, bone, cartilage, shell, **vertebrate, invertebrate,** endoskeleton, exoskeleton, hydrostatic skeleton. • <u>Names of human bones:</u> e.g. skull, spine, backbone, vertebral column, ribcage, pelvis, clavicle, scapula, humerus, ulna, pelvis, radius, femur, tibia, fibula. • Other: **energy**. Previously introduced vocabulary: movement.

Y4: Living things and their habitats, Animals including Humans, States of Matter, Sound, Electricity

	Summer 2	Summer 1	Autumn 1	Spring 2	Spring 1	Autumn 2
Harmony Principle	Adaptation	Oneness	Interdependence	Cycles	Health	Diversity
Enquiry Question	How can we prepare for a Tudor banquet?	How did the Ancient Egyptians live in harmony with Nature?	How did the AngloSaxons farm and how is different from today?	What are the cycles of our solar system?	Where does our energy come from and how much do we use?	What can we learn from different indigenous cultures?
Y4	Living things and their habitats	States of Matter Working Scientifically	Animals including humans	Earth & Space	Electricity	Sound

Statutory	1. Recognise that living things can be grouped in a variety of ways 2. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment 3. Recognise that environments can change and that	1. Compare and group materials together, according to whether they are solids, liquids or gases 2. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at	1. Describe the simple functions of the basic parts of the digestive system in humans 2. Identify the different types of teeth in humans and their simple functions 3. Construct and interpret a variety of food chains,	1. Describe the movement of the Earth and other planets relative to the sun in the solar system 2. Describe the movement of the moon relative to the Earth 3. Describe the sun, Earth and moon as	1. Identify common appliances that run on electricity 2. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers	1. Identify how sounds are made, associating some of them with something vibrating 2. Recognise that vibrations from sounds travel through a medium to the ear 3. Find patterns between the pitch

	this can sometimes pose dangers to living things 4. 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; 5. Give reasons for classifying plants and animals based on specific characteristics.	which this happens in degrees Celsius 3. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	identifying producers, predators and prey	approximately spherical bodies 4. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	3. 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 4. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit 5. Recognise some common conductors and insulators, and associate metals with being good conductors	of a sound and features of the object that produced it 4. Find patterns between the volume of a sound and the strength of the vibrations that produced it 5. Recognise that sounds get fainter as the distance from the sound source increases

Sustainability Theme	Biodiversity	Health and wellbeing	Food and farming	Cycles and Waste	Climate Change and Energy	Learning from the past to create a better future

Skills Progression	Testing Set up simple practical enquiries, comparative and fair tests e.g. Which or two instruments make the highest or lowest sound and does a glass of ice weigh more than a glass of water? Set up a fair test with than one variable e.g. using different materials to cut out sound Can explain to others what a test is fair e.g. discover how fast ice melts in different temps	Scientific Questioning Ask relevant questions and use different types of scientific enquiries to answer them e.g. Why are steam and ice the same thing? Why is the liver important in the digestive system? What do we mean by pitch when it comes to sound?	Measuring Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	Gathering & Recording Gather, record, classify and present data in a variety of ways to help in answering questions, drawing labelled diagrams, keys and child constructed bar charts and tables	Communicating Findings Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Classifying Group information according to common factors e.g. materials that make good conductors or insulators using Venn Diagrams with bisecting sets or Carroll Diagrams

Skills Progression	Scientific Research Use research to find out a range of things e.g. □ Which materials make effective conductors and	Concluding & Questioning Use results to draw simple conclusions, make predictions for new values, suggest	Using Scientific Evidence Use straightforward scientific evidence to answer questions or to			
	insulators of electricity? □ How much time it takes to digest our food	improvements and raise further questions	support his/her findings			

Key Vocab **accurate bar chart chart classify comparative test conclusion (What have we found out?) criteria data develop diagram evaluate evidence explanation key making a test fair method observations plan (What will we do?) practical enquiry**	• Living things: **organisms, specimen,** species. • Grouping living things: **classification,** classification keys, classify, **characteristics**. • Names of invertebrate animals: snails and slugs, worms, spiders, insects. • Invertebrate body parts: e.g. wing case, abdomen, thorax, antenna, segments, mandible, proboscis, prolegs. • Environmental changes:	• **States of matter: solids, liquids, gases,** particles. • State change: **evaporate, condense, melt, freeze**, heat, cool, melting point, freezing point, boiling point, **water vapour**. • Water cycle: **precipitation**, evaporation, condensation, ground run-off, collection, underground water, bodies of water (sea, river, stream), water droplets, hail. • Other: atmosphere. Previously introduced vocabulary:	• Digestive system: **digest**, digestion, tongue, teeth, saliva, salivary glands, **oesophagus, stomach,** liver, pancreas, gall bladder, **small intestine,** duodenum, **large intestine, rectum,** anus, faeces, organ. • Types of teeth and dental care: **molar**, **premolar**, **incisor**, **canine**, wisdom teeth, tooth decay, plaque, enamel, baby (milk) teeth. • Food chains and animal diets: decomposer, food web.	• Solar system: **star, planet.** • Names of planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Neptune, Uranus. • Shape: **spherical bodies, sphere.** • Movement: **rotate, axis, orbit, satellite.** • Theories: **geocentric model, heliocentric model, astronomer.** • Day length: sunrise, sunset, midday, time zone.	• **Electricity:** mains-powered, battery-powered, **mains electricity,** plug, **appliances**, devices. • Circuits: **circuit,** simple series circuit, complete circuit, incomplete circuit. • Circuit parts: bulb, cell, wire, buzzer, switch, motor, **battery.** • Materials: **electrical conductor, electrical insulator.** • Other: safety.	• Parts of the **ear**: **eardrum.** • Making sound: **vibration,** vocal cords, **particles.** • Measuring sound: **pitch**, **volume, amplitude, sound wave,** quiet, loud, high, low, travel, **distance.** • Other: **soundproof, absorb sound.**

prediction (What do you think will happen?) primary sources questioning reasoning relationships results (What happened?) secondary sources standard units table What do we change, what do we keep the same, what are we measuring?	**environment,** environmental dangers, adapt, natural changes, climate change, deforestation, pollution, urbanisation, invasive species, **endangered species, extinct.** • <u>Classifying:</u> Carl Linnaeus, Linnaean system, flowering and non-flowering plants, variation. • **<u>Microorganisms</u>**: **bacteria,** single-celled, microbes, microscopic, virus, fungi, fungus, mould, antibiotic, yeast, ferment, **microscope**, decompose.	temperature, rain, cloud, snow, wind, sun, hot, cold, absorb, carbon dioxide.	Previously introduced vocabulary: **producer,** consumer**, prey, predator,** excretion, habitat.	Previously introduced vocabulary: **Sun, moon, shadow**, day, night, heat, **light**, **reflect**.	Previously introduced vocabulary: names of materials.	

	Previously introduced vocabulary: carbon dioxide, **fish, bird, mammal, amphibian, reptile**, skeleton, bone, **vertebrate, invertebrate,** backbone, names for animal body parts, names of common plants, photosynthesis.					

Y5: Properties and changes of materials, Forces, Earth & Space, Living things and their habitats & Animals including humans

	Spring 2	Summer 2	Autumn 1	Autumn 2	Summer 1	Spring 1
Harmony Principle	Adaptation	Oneness	Interdependence	Cycles	Health	Diversity
Enquiry Question	Who were the Vikings and where did they go?	What did the Ancient Greeks learn from Nature?	How can we ensure our oceans stay amazing?	What journey does a river take from source to sea?	How do we restore our UK habitats back to health?	How did the industrial revolution change the world? Victorians. How can I be a sustainability champion?
Y5	Forces	Working Scientifically	Properties and Change of Materials	States of Matter	Living things and their habitats	Properties and Change of Materials *(reversible & irreversible changes)*

Statutory	1. Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object		1. Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity 9electrical &	1. Compare and group materials together, according to whether they are solids, liquids or gases 2. Observe that some materials change state	1. Describe the differences in the life cycles of a mammal, an amphibian, and insect and a bird 2. Describe the life process of reproduction in	1. Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity, electrical & thermal),

	2. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces 3. Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect		thermal), and response to magnets 2. Know that some materials will dissolve in liquid to form a solution, and to describe how to recover a substance from a solution 3. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating 4. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood & plastic	when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius 3. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	some plants and animals	and response to magnets 2. Know that some materials will dissolve in liquid to form a solution, and to describe how to recover a substance from a solution 3. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating 4. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood & plastic

			5. Demonstrate that dissolving, mixing and changes of state are reversible changes 6. 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 (building on 'Forces & Magnets' from Y3 and Electricity in Y4)			5. Demonstrate that dissolving, mixing and changes of state are reversible changes 6. 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 (building on 'Forces & Magnets' from Y3 and Electricity in Y4)
Sustainability Theme	Learning from the past to create a better future	Food & Farming	Health and wellbeing	Cycles and Waste	Biodiversity	Climate Change and Energy

Skills Progression	Testing Set up an investigation when it is appropriate e.g.	Scientific Questioning Plan different types of scientific	Measuring Make measurements using a range of scientific equipment, with increasing	Gathering & Recording Report data and results of increasing	Communicating Findings Report and present findings from enquiries,	Classifying Group and classify things and recognise patterns using appropriate ways of

	finding out which materials dissolve or not Set up a fair test when needed e.g. Which surfaces create most friction? Set up an enquiry based investigation e.g. Find out what adults/children can do now that they couldn't do when they were a baby Know what variables are in a given enquiry and can isolate each one when investigating e.g. Finding out how effective parachutes are when made with different materials	enquiries to answer given questions	accuracy and precision, taking repeat readings when appropriate	complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations	presenting e.g. classification keys

Skills Progression	Scientific Research	Concluding & Questioning	Using Scientific Evidence			
	Find out things using a wide range of secondary sources of information	Use results to draw simple conclusions. Is evaluative when explaining findings from scientific enquiries and is clear about what has happened in recent enquiries and can relate this to other enquiries where appropriate	Identify scientific evidence that has been used to support or refute ideas or arguments			

Key Vocab **accuracy and precision bar graphs causal relationship degree of trust dependent variable independent variable justify line graphs refute repeat results scatter graphs**	• Types of forces: **air resistance, water resistance, buoyancy, upthrust,** Earth's **gravitational pull, gravity**, opposing forces, driving force. • **Mechanisms:** levers, pulleys, gears/cogs. • Measurements: **weight, mass,**		• Properties of **materials**: thermal **conductor/insulator,** magnetism, electrical resistance, **transparency**. • Mixtures and solutions: dissolving, substance, soluble, insoluble. • Changes of materials: reversible change, physical change, irreversible change, chemical change, burning, new material, product.	• **States of matter: solids, liquids, gases,** particles. • State change: **evaporate, condense, melt, freeze**, heat, cool, melting point, freezing point, boiling point, **water vapour**. • Water cycle: **precipitation**, evaporation, condensation, ground run-off, collection,	• **Reproduction**: **asexual reproduction, sexual reproduction**, **gestation, metamorphosis,** gametes, tuber, runners/side branches, plantlet, cuttings, embryo, adolescent, penis, vagina, egg, pregnancy, gestation.	• Properties of **materials**: thermal **conductor/insulator,** magnetism, electrical resistance, **transparency**. • Mixtures and solutions: dissolving, substance, soluble, insoluble. • Changes of materials: reversible change, physical change, irreversible change, chemical change, burning, new material, product.

support variables (what do we change, what do we keep the same, how and what are we measuring?)	kilograms (kg), Newtons (N), scales, speed, fast, slow. • Other: **streamlined**, Earth. Previously introduced vocabulary: air, heat, moon.		• Separating: sieving, filtering, magnetic attraction. Previously introduced vocabulary: electrical **conductor/insulator,** bulb, **translucent**.	underground water, bodies of water (sea, river, stream), water droplets, hail. • Other: atmosphere. Previously introduced vocabulary: temperature, rain, cloud, snow, wind, sun, hot, cold, absorb, carbon dioxide.	Previously introduced vocabulary: **life cycle, pollination,** offspring, **fertilise,** fertilisation, sepal, filament, anther, stamen, pollen, petal, stigma, style, ovary, carpel, ovule, stem, bulb, roots, mammal, adult, baby, sperm, cells, live young.	• Separating: sieving, filtering, magnetic attraction. Previously introduced vocabulary: electrical **conductor/insulator,** bulb, **translucent**.

Y6: Evolution & Inheritance, Light, Electricity, Living things and their habitat & Animals including humans

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Harmony Principle	Adaptation	Oneness	Interdependence	Cycles	Health	Diversity
Enquiry Question	What would it be like to live during wartime?	How can we learn to live in peace?	How are we connected to Antarctica?	Where do migratory animals travel to and from and why?	Where do we find beauty in Nature?	How would I like to make history?
Y6	Light	Animals including humans	Electricity	Living things and their habitats	Living things and their habitats	Evolution & Inheritance

Statutory	1. Recognise that light appears to travel in straight lines 2. 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 3. Explain that we see things because	1. Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood 2. Recognise the impact of diet, exercise, drugs and lifestyle on	1. Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit 2. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the	1. Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals	1. Describe the changes as humans develop to old age	1. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago 2. Recognise that living things produce offspring of the same kind, but normally offspring vary and

	light travels from light sources to our eyes or from light sources to objects and then to our eyes 4. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them (building on 'Light' from Y3)	the way their bodies function 3. Describe the ways in which nutrients and water are transported within animals, including humans (building on 'Animals including Humans from Y3 & Y4)	on/off position of switches 3. Use recognised symbols when representing a simple circuit in a diagram (building on 'Electricity' from Y4)	2. Give reasons for classifying plants and animals based on specific characteristics (building on 'Living Things and their Habitats' from Y4)		are not identical to their parents 3. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution (building on 'Rocks' from Y3)
Sustainability Theme	Food & Farming	Health and wellbeing	Climate Change and Energy	Cycles and Waste	Biodiversity	Learning from the past to create a better future

Skills Progression	Testing Know which type of investigation is needed to suit a particular scientific enquiry e.g.	Scientific Questioning Plan different types of scientific enquiries to answer their own	Measuring Make measurements using a range of scientific equipment, with increasing	Gathering & Recording Report data and results of increasing complexity using scientific diagrams	Communicating Findings Report and present findings from enquiries, including conclusions, casual	Classifying Group and classify things and recognise patterns using appropriate ways of presenting
	□ Looking at the relationship between pulse and exercise Set up a fair test when needed e.g. □ Does light travel in straight lines? Know how to set up an enquiry based investigation e.g. □ What is the relationship between oxygen and blood?	or others' questions	accuracy and precision, taking repeat readings when appropriate	and labels, classification keys, tables, scatter graphs, bar and line graphs	relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations	e.g. classification keys

Skills Progression	Scientific Research Find out things using a wide range of secondary sources of information	Concluding & Questioning Use results to draw simple conclusions. Is evaluative when explaining findings from scientific enquiries and is clear about what has happened in recent enquiries and can relate this to other enquiries where appropriate	Using Scientific Evidence Identify scientific evidence that has been used to support or refute ideas or arguments			
Key Vocab	• Reflection: periscope.	• **Circulatory system**:	• Flow and measure of electricity:	• **Reproduction**: **asexual**	• Process of reproduction:	• **Evolution** and **inheritance:**

accuracy and precision bar graphs causal relationship degree of trust dependent variable independent variable justify line graphs refute repeat results scatter graphs support variables (what do we change, what do we keep the same, how and what are we measuring?)	• Seeing light: **visible spectrum, prism.** • How light travels: light waves, wavelength, straight line, **refraction.** Previously introduced vocabulary: names and properties of materials, absorb.	circulation, **heart**, pulse, heartbeat, heart rate, lungs, breathing, **blood vessels**, blood, pump, transported, **oxygenated blood, deoxygenated blood,** oxygen, arteries, veins, capillaries, chambers, plasma, platelets, white blood cells, red blood cells. • Lifestyle: **drug, alcohol,** smoking, disease, calorie, energy input, energy output. • Other: water transportation, nutrient transportation, waste products.	**voltage, amps, resistance, electrons**, volts (V), **current.** • Circuits**: symbol,** circuit diagram, component, function, filament. • Variations: dimmer, brighter, louder, quieter. • Types of electricity: natural electricity, human-made electricity, solar panels, power station. • Other: positive, negative.	**reproduction, sexual reproduction, gestation, metamorphosis,** gametes, tuber, runners/side branches, plantlet, cuttings, embryo, adolescent, penis, vagina, egg, pregnancy, gestation. Previously introduced vocabulary: **life cycle, pollination,** offspring, **fertilise,** fertilisation, sepal, filament, anther, stamen, pollen, petal, stigma, style, ovary, carpel, ovule, stem, bulb, roots, mammal, adult, baby, sperm, cells, live young.	**gestation, asexual reproduction, sexual reproduction,** sperm, egg, cells, clone. • Changes and **life cycle:** embryo, foetus, uterus, **prenatal, adolescence, puberty, menstruation, adulthood,** menopause, **life expectancy,** old age, hormones, sweat. • Changing body parts: e.g. breasts, penis, larynx, ovaries, genitalia, pubic hair. Previously introduced vocabulary:	evolve, **adaptation,** inherit, **natural selection, adaptive traits, inherited traits,** mutations, theory of evolution, ancestors, biological parent, chromosomes, genes, Charles Darwin. • Other: selective breeding, artificial selection, breed, cross breeding, genetically modified food, cloning, DNA. Previously introduced vocabulary: classification, **offspring, characteristics, habitat, environment,** adapt, **variations,**

		Previously introduced			reproduction, **reproduce,** types	

		vocabulary: carbon dioxide.			of animals and animal groups, **fertilisation.**	human, **fossil,** suited, cells, names of different habitats, names of animals and their body parts, species, **sedimentary rock**, lava, **igneous rock**, **metamorphic rock**, **magma**, heat, **fossilisation**.