Wadsworth Fields Curriculum
Science (inc. working scientifically)

	Foundation Stage Understanding of the World	Year 1/2	Year 3/4	Year 5/6
Topic overview	To know the names of the seasons and their effect on the natural world around them. To be able to compare a variety of natural environments. To have some awareness of how they can care for the environment. To know how to grow and look after green plants. To know about growth and changes over time in humans and some animals.	**Topics** Year 1 Plants Seasonal change Animals including humans Everyday materials Year 2 Living things and their habitats Plants Animals including humans Uses of everyday materials	**Topics** Year 3 Plants Living things including humans Materials –rocks and soils Light Forces Year 4 Living things and their habitats Living things including humans State of matter Sound Electricity	**Topics** Year 5 Living things and their habitats (life cycles and reproduction in plants and animals) Animals including humans (human development) Properties and change of materials Earth and Space Forces Year 6 Light Living Things and their habitats (classification & characteristics) Animals including humans (human systems) Evolution and Inheritance Electricity
	Foundation Stage 2 Understanding of the World **Progression in substantive knowledge**	**Year 1/2** **Progression in substantive knowledge**	**Year 3/4** **Progression in substantive knowledge**	**Year 5/6** **Progression in substantive knowledge**
Plants	• To know the names of some fruits, vegetables and flowering plants. • To learn how to plant seeds and what they need to grow (light and water). • To grow and look after a range of fruits and vegetables in the raised beds.	Y1 • 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 Y2 • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable	Y3 • 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	NA

		temperature to grow and stay healthy	• explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	
Seasonal Changes	Observe and notice changes across the four seasons e.g. Spring walk, collecting Autumn leaves etc.	Y1 • observe changes across the 4 seasons • observe and describe weather associated with the seasons and how day length varies		

Animals incl humans	Name external parts of the body e.g. arm, shoulder, chin etc. Name common animals including pets, farm animals, polar animals and types of bears. To talk about features and body parts of animals e.g. birds have a beak and wings. To explore using our five senses. Know about the life-cycles of frogs and butterflies.	Y1 • 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 Y2 • 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	Y3 • 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 Y4 • 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	Y5 • describe the changes as humans develop to old age Y6 • 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
Materials, their properties and states of matter	To name a range of common materials e.g. wool, wood, metal. To investigate mixing different materials eg. Potion making Talk about changes in materials when they are heated and cooled eg. Baking, ice jewels	Y1 • 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	Y4 • 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	Y5 • 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

		the basis of their simple physical properties Y2 • 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	the water cycle and associate the rate of evaporation with temperature	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
Rocks			Y3 • 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	
Living things and their habitats	Investigate animals in our school environment e.g. minibeast hunt, pond dipping at the allotment. Animals that live in cold places.	Y2 • 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	Y4 • 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	Y5 • 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 Y6 • 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

		• 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		• give reasons for classifying plants and animals based on specific characteristics
Forces	Explore magnets through play. Investigate floating and sinking. Explore through play with vehicles and ramps/drainpipes how they affect speed and distance.	**N/A**	Y3 • 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	Y5 • 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
Light	Exploring light and dark using torches, dark dens etc	**N/A**	Y3 • 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	Y6 • 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

			• find patterns in the way that the size of shadows change	shadows have the same shape as the objects that cast them
Sound	Investigating sounds made by different instruments. Making loud and quiet sounds.		Y4 • 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	
Electricity	**N/A**	**N/A**	Y4 • 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	Y6 • 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

Earth and space	**N/A**	**N/A**	**N/A**	Y5 • 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
Evolution	**N/A**	**N/A**	**N/A**	Y6 • 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

	Foundation Stage 2 Understanding of the World **Progression in disciplinary knowledge**	Year 1/2 **Progression in disciplinary knowledge**	Year 3/4 **Progression in disciplinary knowledge**	Year 5/6 **Progression in disciplinary knowledge**
Asking and answering questions	Show curiosity and ask simple questions. Answer 'how' and 'why' questions about their experiences.	Year 1 Use everyday language/begin to use simple scientific words to ask or answer a scientific question. Year 2 Suggest ideas, ask simple questions and know that they can be answered/investigated in different ways including simple secondary sources, such as books and video clips.	Year 3 Use ideas to pose questions, independently, about the world around them. Year 4 Suggest relevant questions and know that they could be answered in a variety of ways, including using secondary sources such as ICT. Answer questions using straight forward scientific evidence.	Year 5 Raise different types of scientific questions, and hypotheses. Year 6 Pose/select the most appropriate line of enquiry to investigate scientific questions.
Making predictions	Engage in discussion about what they think might happen.	Year 1 Begin to say what might happen in an investigation. Year 2 Begin to make predictions.	Year 3 Make predictions and begin to give a reason. Year 4 Make predictions and give a reason using simple scientific vocabulary.	Year 5 Make predictions and give a reason using scientific vocabulary. Year 6 Make predictions and give a reason using scientific vocabulary. Base predictions on findings from previous investigations.
Making observations	Explore the natural world around them, making observations and drawing pictures of animals and plants (UtW ELG) Make observations using their senses.	Year 1 Observe objects, materials and living things and describe what they see. Year 2 Observe something closely and describe changes over time.	Year 3 Make decisions about what to observe during an investigation. Year 4 Make systematic and careful observations.	Year 5 Plan and carry out comparative and fair tests, making systematic and careful observations. Year 6 Make their own decisions about which observations to make, using test results and observations to make predictions or set up further comparative or fair tests.
Equipment and measurements	Begin to use simple scientific equipment such as magnifying glasses, torches and magnets for exploration.	Year 1 Use simple, nonstandard equipment and measurements in a practical task. (such as egg timers, footsteps for	Year 3 Take more accurate measurements using standard units. Year 4	Year 5 Take measurements using a range of scientific equipment with increasing accuracy and precision.

		measuring distance, wooden bricks to measure weight etc) Year 2 Use simple equipment (such as rulers or classroom clocks) to take measurements, make observations and carry out simple tests.	Take accurate measurements using standard units and a range of equipment, including thermometers and data loggers.	Year 6 Choose the most appropriate equipment in order to take measurements, explaining how to use it accurately. Decide how long to take measurements for, checking results with additional readings
Identifying and classifying	Sort objects according to simple criteria.	Year 1 Sort and group objects, materials and living things according to simple observational features. Year 2 Decide how to group materials, living things and objects, noticing changes over time and beginning to see patterns.	Year 3 Talk about criteria for grouping, sorting and categorising, beginning to see patterns and relationships. Year 4 Identify similarities/differences/ changes when talking about scientific processes. Use and begin to create simple keys.	Year 5 Use and develop keys to identify, classify and describe living things and materials. Year 6 Identify and explain patterns seen in the natural environment.
Engaging in practical enquiry (investigating)	Engage in open ended activity e.g. explore through play with vehicles and ramps/drainpipes how they affect speed and distance. Take a risk, engage in new experiences and learn by trial and error	Year 1 Follow instructions to complete a simple test individually or in a group. Year 2 Do things in the correct order when performing a simple test and begin to recognise when something is unfair.	Year 3 Discuss enquiry methods and describe a fair test. Year 4 Make decisions about different enquiries, including recognising when a fair test is necessary and begin to identify variables.	Year 5 Plan a range of science enquiries, including comparative and fair tests. Year 6 Select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why, in a variety of comparative and fair tests.
Recording and reporting findings	Record information in simple ways e.g. take photos, draw pictures, tick list (bug hunt) etc	Year 1 Begin to record simple data. Talk about their findings and explain what they have found out. Year 2 Gather data, record and talk about their findings, in a range of ways, using simple scientific vocabulary.	Year 3 Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts. Year 4 Choose appropriate ways to record and present information, findings and conclusions for different audiences (e.g. displays, oral or written explanations).	Year 5 Record data and results of increasing complexity using scientific diagrams, labels, classification keys, tables, bar and line graphs and models. Year 6 Choose the most effective approach to record and report results, linking to mathematical knowledge.

Drawing conclusions	With support, offer explanations for why things might happen, making use of recently introduced vocabulary (C+L ELG)	Year 1 Explain what they think they have found out. Year 2 Use simple scientific language to explain what they have found out.	Year 3 Draw, with help, a simple conclusion based on evidence from an enquiry or observation. Year 4 Use recorded data to make predictions, pose new questions and suggest improvements for further enquiries.	Year 5 Use a simple mode of communication to justify their conclusions on a hypothesis. Begin to recognise how scientific ideas change over time. Year 6 Identify validity of conclusion and required improvement to methodology. Discuss how scientific ideas develop over time.
Analysing data		Year 1 Use every day or simple scientific language to ask and/or answer a question on given data. Year 2 Identify simple patterns and/or relationships using simple comparative language.	Year 3 Gather, record and use data in a variety of ways to answer a simple question. Year 4 Identify, with help, changes, patterns, similarities and differences in data to help form conclusions. Use scientific evidence to support their findings.	Year 5 Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. Year 6 Identify and explain causal relationships in data and identify evidence that supports or refutes their findings, selecting fact from opinion.
Cultural capital	Gardening in the raised beds. Visits to local allotment. Visit to the farm/Conkers. Seasonal walks around school grounds. Science week	Visit to local allotment Growing plants Science week Whole school investigations Mad Science assembly	Knowledge of scientists: Benjamin Franklin - Inventor Thomas Edison - Light Mary Anning - Rocks Rock man AKA Mark Kapper (Karen's friend) Animal magic Longshaw estate –habitats plants and animals Science week Whole school investigations Mad Science assembly	Knowledge of scientists: Stephen Hawking – Black Hole Charles Darwin – Evolution Isaac Newton – Light and Colour Alexander Fleming – Penicillin Peter Mansfield – MRI Visit to Bramcote School science labs Science week Whole school investigations Mad Science assembly

Progression in scientific vocabulary						
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Plants	• 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, **leaf/leaves**, blossom, **petal**, **stem**, trunk, branch, **root**, **seed, bulb,** soil. • Name some common types of plant e.g. sunflower, daffodil.	• 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**, **temperature**, warm, hot, cold, habitat.	• 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), reproduce, **fertilisation,** fertilise, **stamen,** anther, filament, **carpel (pistil),** stigma, style, ovary, ovule, **sepal**, carbon dioxide. Previously introduced vocabulary: life cycle**.**			

Seasonal changes	• **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, rainfall, wind direction, thermometer, rain gauge. • Day length: night, day, **daylight.**					

Animals including humans	• 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, 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.	• 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**, 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**.	• Food groups and **nutrients**: fibre, fats **(saturated and unsaturated**), vitamins, minerals. • Skeletons and muscles: skeleton, **muscles, tendons, joints,** protection, support, organs, voluntary muscles, involuntary muscles, biceps, triceps, contract, relax, bone, cartilage, shell, **vertebrate, invertebrate,** endoskeleton, exoskeleton, hydrostatic skeleton. • Names of human bones: e.g. skull, spine, backbone, vertebral column, ribcage, pelvis, clavicle, scapula, humerus, ulna, pelvis, radius, femur, tibia, fibula. • Other: **energy**. Previously introduced vocabulary: movement.	• 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. Previously introduced vocabulary: **producer,** consumer**, prey, predator,** excretion**,** habitat.	• Process of reproduction: **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: reproduction, **reproduce,** types of animals and animal groups, **fertilisation.**	• **Circulatory system**: 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. Previously introduced vocabulary: carbon dioxide.

Materials	• 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**, **absorbent, not absorbent,** sharp, stiff. • Other: **object.**	• Changing shape: squash, bend, twist, stretch. • **Properties** of **materials:** e.g. strong, flexible, light, hard-wearing, elastic. • Other: **suitability**, recycle, pollution.		• **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: temperature, rain, cloud, snow, wind, sun, hot, cold, absorb, carbon dioxide.	• 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. • Separating: sieving, filtering, magnetic attraction. Previously introduced vocabulary: electrical **conductor/insulator,** bulb, **translucent**.	

Rocks			• 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. • Formation of rocks and fossils: natural, human-made, **magma, lava,** molten rock, **sediment, erosion, fossilisation,** layers, bone, fossil. • Soil: sandy, chalky, clay, peaty, loamy, topsoil, subsoil, bedrock, mineral, organic matter, compost. • Other: **palaeontology.** Previously introduced vocabulary: soil, **water**, air.			

Living things and their habitats		• 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, 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.		• 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: **environment,** environmental dangers, adapt, natural changes, climate change, deforestation, pollution, urbanisation, invasive species, **endangered species, extinct.** 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.	• **Reproduction**: **asexual 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.	• Classifying: Carl Linnaeus, Linnaean system, flowering and non-flowering plants, variation. • **Microorganisms**: **bacteria,** single-celled, microbes, microscopic, virus, fungi, fungus, mould, antibiotic, yeast, ferment, **microscope**, decompose.

Forces			• How things move: move, movement, **surface**, distance, strength. • Types of **forces**: push, pull, contact force, non-contact force, **friction**. • **Magnets: magnetic, magnetic field,** magnetic force, bar magnet, horseshoe magnet, ring magnet, magnetic **poles** (north pole, south pole), **attract, repel,** compass. • Magnetic and non-magnetic materials: e.g. iron, nickel, cobalt. Previously introduced vocabulary: metal, names of materials.		• 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,** kilograms (kg), Newtons (N), scales, speed, fast, slow. • Other: **streamlined**, Earth. Previously introduced vocabulary: air, heat, moon.	

Light			• **Light** and seeing: **dark,** absence of light, **light source,** illuminate, visible, **shadow, translucent,** energy, block. • **Light sources:** e.g. candle, torch, fire, lantern, lightning. • **Reflective light: reflect, reflection,** surface, **ray**, scatter, reverse, beam, angle, mirror, moon. • Sun safety: dangerous, glare, damage, UV light, UV rating, sunglasses, direct. Previously introduced vocabulary: **opaque, transparent,** sunlight, sun.			• Reflection: periscope. • Seeing light: **visible spectrum, prism.** • How light travels: light waves, wavelength, straight line, **refraction.** Previously introduced vocabulary: names and properties of materials, absorb.
Sound				• 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.**		

Electricity				• **<u>Electricity:</u>** mains-powered, battery-powered, **mains electricity,** plug, **appliances**, devices. • <u>Circuits:</u> **circuit,** simple series circuit, complete circuit, incomplete circuit. • <u>Circuit parts:</u> bulb, cell, wire, buzzer, switch, motor, **battery.** • <u>Materials:</u> **electrical conductor, electrical insulator.** • <u>Other:</u> safety. Previously introduced vocabulary: names of materials. •		• <u>Flow and measure of electricity:</u> **voltage, amps, resistance, electrons**, volts (V), **current.** • <u>Circuits</u>**: symbol,** circuit diagram, component, function, filament. • <u>Variations:</u> dimmer, brighter, louder, quieter. • <u>Types of electricity:</u> natural electricity, human-made electricity, solar panels, power station. • <u>Other:</u> positive, negative.

Earth and space				•	• 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. Previously introduced vocabulary: **Sun, moon, shadow**, day, night, heat, **light**, **reflect**.	

Evolution				•		• **Evolution** and **inheritance:** 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**, 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**.

Glossary of terms

Animals including humans
Amphibians - amphibians live in the water as babies and on land as they grow older. They have smooth, slimy skin.
Birds - all birds have a beak, two legs, feathers and wings.
Fish - fish live and breathe under water. They have scaly skin, fins to help them swim and they breathe through gills.
Mammals - mammals are animals that breathe air, grow hair or fur and feed on their mother's milk as a baby.
Reptiles - all reptiles breathe air. They have scales on their skin.
Carnivore - animals that mostly eat other animals (meat) are carnivores.
Herbivore - animals that only eat plants are herbivores.
Omnivore – animals that eat both plants and other animals are omnivores.
Adult - a fully grown animal or plant.
Develop - to grow bigger and become stronger.
Life cycle - the changes living things go through to become an adult.
Offspring - the child of an animal. Young - offspring that has not reached adulthood.
Live young - offspring that has not hatched from an egg.
Diet - the food and water that an animal needs.
Exercise - a physical activity to keep your body fit.
Germs - tiny living things that can cause disease.
Hygiene - How we keep ourselves and the world around us clean so we can stay healthy and stop germs spreading.
Nutrition - food needed to live.

Healthy - in a good physical and mental condition

Nutrients - substances that living things need to stay alive and healthy

Energy - strength to be able to move and grow

Saturated fats – type of fats, considered to be less healthy, that should only be eaten in small amounts

Unsaturated fats - fats that give you energy, vitamins and minerals

Carbohydrates - provide energy

Protein - helps growth and repair

Fibre - helps you to digest the food that you have eaten

Fats - provide energy

Vertebrate - animals with backbones

Invertebrate - animals without backbones

Muscles - soft tissues in the body that contract and relax to cause movement

Tendons - cords that join muscles to bones

Joints - areas where two or more bones are fitted together

Endoskeleton – a skeleton on the inside of the body that supports and protects it

Exoskeleton – a skeleton on the outside of the body that supports and protects it

Hydrostatic skeleton – a skeleton made up of a fluid-filled compartment in the body called a coelom, mainly found in soft bodied animals

Incisor – the teeth at the front that bite and cut food

Canine – the teeth that tear and rip food

Molar – the teeth at the back that grind food

Premolar – the teeth that hold and crush food

Digest - break down food so it can be used by the body.

Oesophagus - a muscular tube which moves food from the mouth to the stomach.

Stomach - an organ in the digestive system where food is broken down with stomach acid and by being churned around.

Small intestine - part of the intestine where nutrients are absorbed into the body.

Large intestine - part of the intestine where water is absorbed from remaining waste food. Faeces are formed in the large intestine.

Rectum - part of the digestive system where faeces are stored before leaving the body through the anus.

Producer - an organism, such as a plant, that produces its own food.

Predator - an animal that hunts and eats other animals.

Prey - an animal that gets hunted and eaten by another animal.

Food chain – shows the flow of energy

Fertilisation - the process of the male and female sex cells fusing together.

Prenatal - the stage of development from the time of fertilisation to the time of birth.

Gestation - the process or time when prenatal development takes place before birth.

Reproduce - to produce young.

Asexual reproduction - a process where one parent produces new life.

Sexual reproduction - a process where two parents – one male and one female – are required to produce new life.

Life cycle - the changes a living thing goes through, including reproduction.

Adolescence - the social and emotional stage of development between childhood and adulthood.

Puberty - the physical stage of development between childhood and adulthood.

Menstruation - when the female body discharges the lining of the uterus. This happens approximately once a month.

Adulthood - the stage of development when a human is fully grown and mature.

Life expectancy - the length of time, on average, that a particular animal is expected to live.

Circulatory system - a system which includes the heart, veins, arteries and blood transporting substances around the body.

Heart - an organ which constantly pumps blood around the circulatory system.

Blood vessels - the tube-like structures that carry blood through the tissues and organs. Veins, arteries and capillaries are the three types of blood vessels.

Oxygenated blood - oxygenated blood has more oxygen. It is pumped from the heart to the rest of the body.

Deoxygenated blood - deoxygenated blood is blood where most of the oxygen has already been transferred to the rest of the body.

Drug - a substance containing natural or man-made chemicals that has an effect on your body when it enters your system.

Alcohol - a drug produced from grains, fruits or vegetables when they are put through a process called fermentation.

Nutrients - substances that animals need to stay alive and healthy.

Plants