Science Curriculum



Subject Intent

Here at Greswold, we want all pupils to be enthused and inspired by the Science lessons we offer. We aim to provide Quality First Teaching and a broad, engaging curriculum that will equip pupils with the enquiry skills and rich scientific knowledge as a foundation for understanding the world.

Pupils are encouraged to be curious learners, ask questions and draw conclusions through practical lessons. Linking science in the classroom to science in everyday life allows children to see its relevance and understand its importance beyond school life.

Science at Greswold is underpinned by our vision that was created by staff and children.

- **Children understand the purpose of their learning and make links to their own lives.**
- **Children are engaged, excited and enthusiastic about their learning.**
- **Learning sparks awe, wonder and curiosity from the children; children are inspired.**
- **Practical learning opportunities lead to children leading their own investigations and asking their own questions.**
- **We use a range of resources and explore our outside areas**

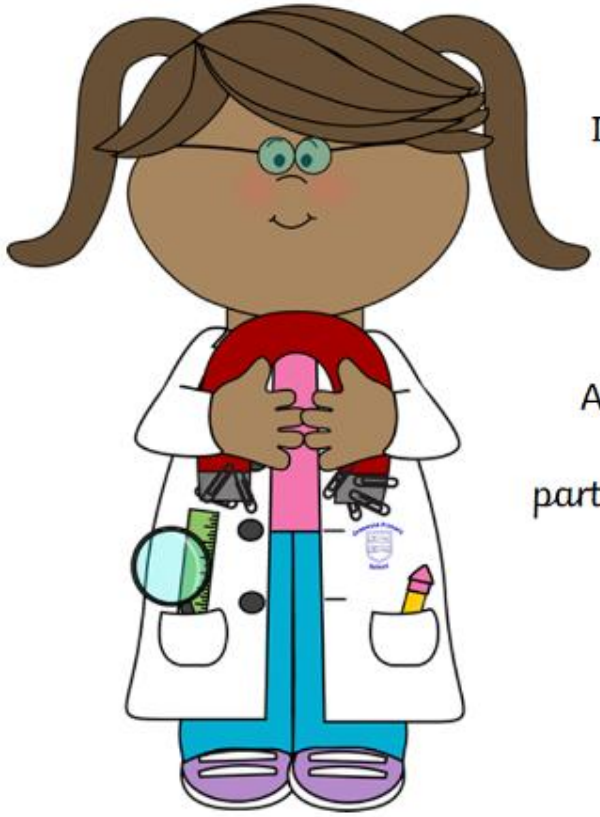
Science in the Early Years

Science is explored through 'Understanding the World' and is closely linked to children's physical development when talking and learning about the body and the effects of exercise. Volunteers, parents and members of the local community are invited in to share knowledge and first hand experiences of professions such as vets, doctors, firefighters and police. Much of the learning is led by children's interest in change, including changes to themselves, the environment and materials. Pupils discuss the seasons daily, completing the classroom weather charts. The school environment provides children with the opportunity to make observations, collect items of interest and generate discussions which support questioning and prediction skills. The children are taught to care for and respect all living things by building bug cities and feeding the birds. They contribute to their own outside area through the planting of seeds, using the produce and showing care and respect for their immediate environment. Nursery enhance their learning of this area with a visit to the farm.

The Greswold Scientist

Recall and use scientific vocabulary accurately, to support reasoning explanations and to communicate their thinking clearly.

Ability to discuss real world examples of primary learning.



The ability to plan investigations, independently or collaboratively, in order to answer a question.

Understand why the working scientifically skills are important and be able to attribute them to learning, alongside confidently discussing which enquiry type they have used and why.

Constant wonder and curiosity to think like a scientist and find things out for themselves.

In preparation for KS3, pupils will be able to identify the different science strands of biology, chemistry and physics.

The ability to discuss influential scientists both past and present.

An appreciation and awareness into the future of science including secondary education and careers, through participating in science and STEM based enrichment activities.

The Greswold Scientist

Subject Long-Term Plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	**Material Masters** • Name everyday materials. • Describe physical properties. • Compare and group physical properties like hard/soft, shiny/dull.	**Animal Needs** • Name common animals and the 5 animal groups. • Group animals by diet and features. Carnivore, herbivore, omnivore.	**The Seasons and Weather Detectives** • Observe changes across the four seasons. • Describe weather associated with and day length changes.	**Super Senses Squad** • Identify body parts and senses. • Explore how senses help us understand the world.	**Plants** • Identify variety of common wild and garden plants, inc deciduous and evergreen trees. • Identify basic structure of common flowering plants inc trees.	**Under the Sea** • Classification and diet groups
Year 2	**Material Marvels** • Investigate uses of materials and compare suitability for purposes. • Explore how materials can change shape.	**Habitat Heroes** • Understand living/non-living things. • Habitats, basic needs. dependence • Explore simple food chains and food sources. • Identify and name plants and animals in their habitats inc microhabitats		**Healthy Me Crew** • Food chain • Learn about exercise, hygiene, and diet. • Understand basic human needs.	**Plant Power Squad** • How seeds and bulbs grow into plants • Explore what plants need to grow and stay healthy	**Living things and their habitats** • Microhabitats
Year 3	**Rock Stars** • Compare rocks and soils. • Understand fossil formation.	**Magnet Marvels** • Explore forces and magnets. • How things moves on different surfaces. • Test magnetic materials.	**Animal Athletes** • Learn about skeletons and muscles. • Understand nutrition and movement.		**Shadow Sleuths** • Need light to see. • Explore light sources and reflection. • Dangers of Sun • Investigate shadows and how they change.	**Plant Power Squad** • Functions of flowering plant parts. • What plants need to LIVE. • Study plant life cycles. • Investigate water transport in plants.
Year 4	**Sound Sleuths** • Investigate how sound is made and travels. • Explore pitch and volume.	**Circuit Superheroes** • Appliances that run on electricity. • Build simple circuits/ explore simple circuits. • Understand conductors and insulators. • Safety in electricity.	**States of Matter Marvels** • Compare solids, liquids, gases. • Understand changes of state. • Water cycle processes	**Wild World Explorers** • Group living things, classification keys use for things in local environment. • Understand environmental impact from changes.		**Digestion Detectives** • Learn about teeth and digestion. • Explore food journeys in the body. • Study habitats and food chains.

Year 5	**May the Forces be with you** • Investigate gravity and resistance. • Explore levers and pulleys.	**Space Invaders** • Solar system and orbits • Movement of Moon relative to earth • Spherical bodies • Understand day/night	**Marvellous Materials and Amazing Changes** • Compare, group and classify everyday materials • Ice hand experiment on material for insulation • Compare and group together everyday materials on the basis of their properties (solubility). • Know that some materials will dissolve in liquid to form a solution. • Demonstrate that mixing is a reversible change through filtering, sieving • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible		**The Circle of Life** • Explore plant and animal life cycles. • Understand reproduction.	**Body Bosses** • Learn about human growth and changes. • Understand puberty basics.
Year 6	**Who's who in the natural world?** • (Classification)s • Classify living things. • Explore microorganisms.	**Electricity Experts** • Understand voltage and components. • Circuit symbols.	**Inheritance and Evolution** • Understand inheritance and adaptation. • Explore evolution over time.	**Blood, Breath and Beyond** • Study the circulatory system. • Understand health and lifestyle impacts.	**Let there be Light!** • Investigate how light travels. • How we see linked to light travelling. • Why shadows have same shape as object	**Science Careers** • Learning from our school community

Scientist Study

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Inge Lehmann (Danish seismologist)	Jane Goodall (British primatologist)	June Bacon-Bercey (African-American meteorologist)	Virginia Apgar (American physician)	Ynes Mexia (Mexican-American botanist)	Stephanie Kwolek (invented Kevlar)
Year 2	Archimedes	Matthew Henson (African-American Arctic explorer)		Temple Grandin	George Washington Carver	Sylvia Earle (marine biologist)
Year 3	William Gilbert	Mary Anning	Andreas Vesalius		Ibn al-Haytham (Arab physicist)	Jeanne Baret (French botanist)
Year 4	Alexander Graham Bell	Lewis Latimer (African-American inventor)	Anders Celsius	Rachel Carson		Dr. Daniel Hale Williams
Year 5	Sir Isaac Newton	Mae Jameson and Katherine Johnson	Rosalind Franklin		Professor Robert Winston	Sir David Attenborough
Year 6	Carl Linnaues	Caroline Haslett	Charles Darwin	Professor Elizabeth Anionwu	Chien-Shiung Wu (Chinese-American physicist)	Scientists within our community

Subject Outcomes

Year 1			
Plants	**Animals including Humans**	**Materials**	**Seasonal changes**
• 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 (seeds, roots etc), including trees.	• 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 w with each sense.	• To know how to 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. • To be able to describe the simple physical properties of a variety of everyday materials • Compare and group together a variety of everyday materials based on their simple physical properties.	• Observe and talk about changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies, including understanding that it is unsafe to look directly at the Sun.

Year 2			
Plants	**Animals including Humans**	**Materials**	**Living Things**
• To observe and know how seeds and bulbs grow into mature plants • To find out and describe how plants need water, light and suitable temperature to grow and stay healthy.	• To know that animals, including humans, have offspring which grow into adults • To know and describe the basic needs of animals, including humans, for survival (water, food and air) • Know and describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	• 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 soil are made from rocks and organic matter	• 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.

Year 3				
Plants	**Animals including Humans**	**Materials**	**Light**	**Forces and Magnets**
• Identify, know and describe the functions of different parts of flowering plants: roots, stem/truck, leaves and flowers • Explore and know the requirements of	• To identify and know 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	• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • Describe in simple terms how fossils	• Recognise that they need light in order to see things and that dark is absence of light • Notice that light is reflected from surfaces	• Compare how things move on different surfaces • Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance

plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant • Investigate and understand 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.	• Identify and know that humans and some animals have skeletons and muscles for support, protection and movement.	are formed when things that have lived are trapped within rock • Recognise that soil are made from rocks and organic matter	• Recognise that light from the sun can be dangerous and that there are ways to protect the eyes. • Recognise that shadows are formed when light from a light source is blocked by a solid object • Find patterns in the way that the size of shadows change	• 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.

Year 4

Animals including Humans	Materials	Living Things	Electricity	Sound
• 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.	• 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 the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics. • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	• Identify and name a variety of living things (plants and animals) in the local and wider environment • Give reasons for classifying plants and animals based on specific characteristics • Recognise that environments are constantly changing and that this can sometimes pose dangers to living things.	• 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.	• 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 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's source increases.

Year 5

Animals including Humans	Materials	Earth and Space	Living Things	Forces and Magnets
• To 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	• 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 know and 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 animals and plants	• 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

	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.	to explain day and night, and the apparent movement of the sun across the sky.		including levers, pulleys and gears allow a smaller force to have a greater effect .

Year 6				
Animals including Humans	**Living Things**	**Evolution and Inheritance**	**Light**	**Electricity**
• 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.	• 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. • Give reasons for classifying plants and animals based on specific characteristics.	• Evolution and inheritance • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	• 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.	• 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.

Subject Progression – Working Scientifically

Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Explore the world around them and raise their own simple questions	Raise their own relevant questions about the world around them	Use their science experiences to explore ideas and raise different kinds of questions
Experience different types of science enquiries, including practical activities	Should be given a range of scientific experiences including different types of science enquiries to answer questions	Talk about how scientific ideas have developed over time
Begin to recognise different ways in which they might answer scientific questions	Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions	Select and plan the most appropriate type of scientific enquiry to use to answer scientific questions
Carry out simple tests	Set up simple practical enquiries, comparative and fair tests Recognise when a simple fair test is necessary and help to decide how to set it up	Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why
Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying)	Talk about criteria for grouping, sorting and classifying; and use simple keys	Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment
Ask people questions and use simple secondary sources to find answers	Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations	Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact
Observe closely using simple equipment With help, observe changes over time	Make systematic and careful observations Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used	Make their own decisions about what observations to make, what measurements to use and how long to make them for
With guidance, they should begin to notice patterns and relationships	Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them	Look for different causal relationships in their data and identify evidence that refutes or supports their ideas
Use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data	Take accurate measurements using standard units learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately	Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate.
Record simple data	Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data	Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
Use their observations and ideas to suggest answers to questions Talk about what they have found out and how they found it out	With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions	Identify scientific evidence that has been used to support or refute ideas or arguments
With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions	Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results
	With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done.	Use their results to make predictions and identify when further observations, comparative and fair tests might be needed

Vocabulary

Working Scientifically	
Year-group(s)	**Vocabulary/Statement(s)**
Nursery & Reception	look closely, observe, watch, touch, feel, smell, listen, same, different, compare, ask questions, record, sort, group
Years 1 & 2	observe, changes, patterns, grouping, sorting, compare, same, different, identify (name), measure, data, record results, drawing,picture, table, tally chart, present, pictogram, block chart, Venn diagram, ask questions, test, investigate, explore, equipment, resources, magnifying glass, hand lens, ruler, tape measure, metre stick, pipette, syringe, spoon, teaspoon, answer questions, interpret results, scientific enquiry, pattern seeking, comparative testing, observing over time, classifying, researching using secondary sources
Years 3 & 4	practical work, fair testing, relationships, accurate, thermometer, data logger, stopwatch, timer, estimate, data, diagram, identification key, chart, bar chart, prediction, similarity, difference, evidence, information, findings, criteria, values, properties,characteristics, conclusion, explanation, reason, evaluate, improve
Years 5 & 6	variables, independent variable, dependent variable, control variable, evidence, justify, argument (science), causal relationship,accuracy, precision, scatter graphs, bar graphs, line graphs, force meter

Plants	
Year-group(s)	**Vocabulary/Statement(s)**
Nursery	plant, leaf, stem, branch, root, bark, flower, petal, seed, berry, fruit, vegetable, bulb, plant, hole, dig, water, weed, grow, shoot, die, dead,soil, names of plants they grow
Reception	tree, bush, herb, names of plants they see (Reception - Living things and their habitats)
Year 1	leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, names of trees in the local area, names of garden and wild flowering plants in the local area
Year 2	light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling names of plants in local habitats and micro-habitats (Y2 - Living things and their habitats)
Year 3	photosynthesis, pollen, insect/wind pollination, male, female, seed formation, seed dispersal (wind dispersal, animal dispersal, waterdispersal), air, nutrients, minerals, soil, absorb, transport
Year 4	classification, classification keys (Y4 - Living things and their habitats)
Year 5	life cycle, reproduce, sexual, fertilises, asexual, plantlets, runners, tubers, cuttings (Y5 - Living things and their habitats)
Year 6	flowering, non-flowering, mosses, ferns, conifers (Y6 - Living things and their habitats)

Living things and their habitats	
Year-group(s)	**Vocabulary/Statement(s)**
Nursery	natural, plant, animal, leaves, seeds, conkers, acorns, twigs, bark, shells, feathers, pebbles, stones, same, different, pattern plant, leaf, stem, branch, root, bark, flower, petal, seed, berry, fruit, vegetable, bulb, plant, hole, dig, water, weed, grow, shoot, die, dead, soil (Nursery - Plants)
Reception	plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting environment (e.g.beach, forest)
Year 1	names of garden and wild flowering plants in the local area (Y1 - Plants) head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, names of animals experiencedfirst-hand from each vertebrate group (Y1 - Animals, including humans) weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost,puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length (Y1 - Seasonal changes)
Year 2	living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, water, air, survive, survival, names oflocal habitats (e.g. pond, woodland etc.), names of micro-habitats (e.g. under logs, in bushes etc.), conditions, light, dark, shady, sunny,wet, damp, dry, hot, cold, names of living things in the habitats and micro-habitats studied light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling (Y2 - Plants) offspring, reproduction, growth, baby, toddler, child, teenager, adult, old person, names of animals and their babies (e.g. chick/chicken,cat/kitten, caterpillar/butterfly) (Y2 - Animals, including humans)
Year 3	photosynthesis, pollen, insect/wind pollination, male, female, seed formation, seed dispersal (e.g. wind dispersal, animal dispersal, waterdispersal), air, nutrients, minerals, soil, absorb, transport
Year 4	classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate herbivore, carnivore, omnivore, producer, predator, prey (Y4 - Animals, including humans)
Year 5	life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, cuttings
Year 6	vertebrates, fish, amphibians, reptiles, birds, mammals, warm-blooded, cold-blooded, invertebrates, insects, spiders, snails, worms,flowering, non-flowering, mosses, ferns, conifers

Animals including Humans	
Year-group(s)	**Vocabulary/Statement(s)**
Nursery	egg, chick, bird, caterpillar, cocoon, chrysalis, butterfly, frog spawn, tadpole, froglet, frog, grow, change, die, names of animals and their young, fur, feathers, scales, tail, wings, beak, claws, paws, hooves, swim, walk, run, jump, fly, patterns, spots, stripes, grow, change, baby, toddler, child, adult, old person, smell, taste, touch, feel, hear, see, blind, deaf
Reception	names of animals, live, on land, in water, jungle, desert, North Pole, South Pole, sea, hot, cold, wet, dry, snow, ice, hair (e.g. black, brown,dark, light, blonde, ginger, grey, white, long, short, straight, curly), eyes (e.g. blue, brown, green, grey), skin (e.g. black, brown, white), big/tall, small/short, bigger/smaller, baby, toddler, child, adult, old person, old, young, brother, sister, mother, father, aunt, uncle, grandmother, grandfather, cousin, friend, family, boy, girl, man, woman
Year 1	head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, names of animals experienced/first-hand from each vertebrate group, parts of the human body including those within the school's RSE policy, senses, touch, see, smell,taste, hear, fingers, skin, eyes, nose, ears, tongue
Year 2	offspring, reproduction, growth, baby, toddler, child, teenager, adult, old person, names of animals and their babies (e.g. chick/chicken, kitten/cat, caterpillar/butterfly), survive, survival, water, food, air, exercise, heartbeat, breathing, hygiene, germs, disease, food types (e.g.meat, fish, vegetables, bread, rice, pasta, dairy) living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, water, air, survive, survival (Y2 - Livingthings and their habitats)
Year 3	nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine
Year 4	digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, large intestine, rectum, anus, incisor, canine,molar, premolar, herbivore, carnivore, omnivore, producer, predator, prey
Year 5	puberty, the vocabulary to describe sexual characteristics in line with the school's RSE policy life cycle, foetus, baby, child, adolescent, adult, reproduce, sexual, sperm, fertilises, egg, live young (Y5 - Living things and their habitats)
Year 6	heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, cycle, circulatory system, diet, drugs, lifestyle

Evolution and Inheritance	
Year-group(s)	Vocabulary/Statement(s)
Nursery	natural, plant, animal, leaves, seeds, conkers, acorns, twigs, bark, shells, feathers, pebbles, stones, same, different, pattern (Nursery -Living things and their habitats)
Reception	plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting environment (e.g.beach, forest) (Reception - Living things and their habitats)
Year 1	leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud (Y1 - Plants)
Year 2	light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling (Y2 - Plants) living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, water, air, survive, survival, conditions, light, dark, shady, sunny, wet, damp, dry, hot, cold (Y2 - Living things and their habitats)
Year 3	photosynthesis, pollen, insect/wind pollination, male, female, seed formation, seed dispersal (e.g. wind dispersal, animal dispersal, waterdispersal), air, nutrients, minerals, soil (Y3 - Plants) soil, fossil, bone, flesh, minerals (Y3 - Rocks)
Year 4	environment, habitat, human impact, positive, negative, migrate, hibernate (Y4 - Living things and their habitats) herbivore, carnivore, omnivore, producer, predator, prey (Y4 - Animals, including humans)
Year 5	life cycle, reproduce, sexual, fertilises, asexual, plantlets, runners, tubers, cuttings (Y5 - Living things and their habitats)
Year 6	offspring, sexual reproduction, vary, characteristics, adapted, inherited, species, evolve, evolution

Materials	
Year-group(s)	Vocabulary/Statement(s)
Nursery	mix, stir, cook, hot, oven, microwave, change, burn, melt, hard, runny, set, freeze, freezer, cold, blended, hard, soft, bend y, stiff, wobbly,wood, plastic, paper, card, fabric
Reception	ice, water, frozen, icicle, snow, melt, wet, cold, slippery, smooth, big, bigger, biggest, smaller, smaller, smallest, hard, soft, bendy, rigid, wood, plastic, paper, card, metal, strong, weak, hot, apply heat, waterproof, soggy, not waterproof, best, change, change back
Year 1	object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through
Year 2	opaque, transparent, translucent, reflective, non-reflective, flexible, rigid, shape, push/pushing, pull/pulling, twist/twisting,squash/squashing, bend/bending, stretch/stretching
Year 3	rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorbs water, fossil, bone, flesh, minerals, marble, chalk, granite,sandstone, slate, types of soil (e.g. peaty, sandy, chalky, clay) (Y3 - Rocks) magnetic force, magnet, attract, magnetic material, metal, iron, steel (Y3 - Forces and magnets)
Year 4	solid, liquid, gas, heating, cooling, state change, melting, freezing, melting point, boiling, boiling point, evaporation, condensation,temperature, water cycle electrical conductor, electrical insulator, metal, non-metal (Y4 - Electricity)
Year 5	thermal insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non -reversible change,burning, rusting, new material

Rocks	
Year-group(s)	Vocabulary/Statement(s)
Nursery	natural, shells, pebbles, stones
Year 1	object, material, rock, brick, clay, hard, soft, waterproof, absorbent, rough, smooth, shiny, dull, see-through, not see-through (Y1 -Everyday materials)
Year 2	opaque, transparent, translucent, reflective, non-reflective (Y2 - Uses of everyday materials)
Year 3	rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorbs water, fossil, bone, flesh, minerals, marble, chalk, granite,sandstone, slate, types of soil (e.g. peaty, sandy, chalky, clay)
Year 6	Evolution,
Seasonal changes	
Year-group(s)	Vocabulary/Statement(s)
Nursery	grow, shoot, die, dead (Nursery - Plants) egg, chick, bird, caterpillar, cocoon, chrysalis, butterfly, frog spawn, tadpole, froglet, frog, grow, change, die, names of animals and theiryoung (Nursery - Animals, excluding humans)
Reception	spring, summer, autumn, winter, seasons, sunny, cloudy, hot, warm, cold, shower, raining, storm, thunder, lightning, hail, sleet, snow, icy,frost, puddles, windy, rainbow, animals, young, plants, flowers
Year 1	weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost,puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length

Electricity	
Year-group(s)	Vocabulary/Statement(s)
Nursery	battery, plug, socket, electricity, wire, sound, light, move
Year 4	electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal,symbol
Year 6	circuit diagram, circuit symbol, voltage
Earth and Space	
Year-group(s)	Vocabulary/Statement(s)
Reception	Sun, Moon, Earth, star, planet, sky, day, night, space, round, bounce, float
Year 3	light, light source, Sun, sunlight, dangerous (Y3 - Light)

Year 5	Sun, Moon, Earth, planets (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, Solar System, rotate, star, orbit, phases

Light	
Year-group(s)	Vocabulary/Statement(s)
Nursery	light, torch, bulb, lamp, spotlight, shiny, bright, brighter, brightest, Sun, shine, glow, mirror
Reception	Sun, sunny, light, shadow, shady, clouds, torch, see-through, not see-through, source, light source
Year 1	senses, see, eyes (Y1 - Animals, including humans) shiny, dull, see-through, not see-through (Y1 - Materials)
Year 2	opaque, transparent, translucent, reflective, non-reflective (Y2 - Uses of everyday materials)
Year 3	light, light source, dark, absence of light, surface, shadow, reflect, mirror, Sun, sunlight, dangerous
Year 6	traight lines, light rays

Forces	
Year-group(s)	Vocabulary/Statement(s)
Nursery	object, float, sink, water, up, down, top, bottom, push, pull, magnet, spring, squash, bend, twist, stretch, turn, spin, smooth, rough, fast,slow
Reception	float, sink, up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest,wind, air, water, blow, bounce
Year 2	flexible, rigid, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching (Y2 - Uses of everyday materials)
Year 3	force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet,horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole
Year 5	force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears

Sound	
Year-group(s)	Vocabulary/Statement(s)
Nursery	sound, noise, loud, quiet, high, low, music, bang, blow, pluck, soft, hard, fast, slow, names of instruments
Reception	sound, noise, listen, hear, music, voices, bird song, traffic, sirens, thunder, high, low, loud, quiet, soft, volume, crackle, thunder, hum,buzz, roar
Year 1	senses, hear, ear (Y1 - Animals, including humans)
Year 4	sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, quiet, loud, insulation