YEAR 1	
Working scientifically	• Ask simple questions and recognise that they can be answered in different ways. • Observe closely using simple equipment. • Perform simple tests. • Identify and classify. • Use their observations and ideas to suggest answers to questions. • Gather and record data to help answer questions.
Plants	• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. • Identify and describe the basic structure of a variety of common flowering plants, including trees.
Animals including Humans	• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • Identify and name a variety of common animals that are carnivores, herbivores and omnivores. • 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.
Rocks, Evolution and Inheritance	
Living things and their habitats	
Materials	• Distinguish between an object and the material from which it is made. • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. • Describe the simple physical properties of a variety of everyday materials. • Compare and group together a variety of everyday materials on the basis of their simple physical properties.
States of Matter	
Light	
Sound	
Electricity	
Forces	
Seasonal Changes, Earth & Space	• Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies.

Vocabulary to introduce in Year 1

Working scientifically: *changes over time, comparing, contrasting, criteria, data/results, describing, equipment, grouping, identify, name, observations, patterns, record, sorting, test.*

Plants: *branches, bud, bulb, deciduous tree, evergreen tree, flowers, fruit, garden/flowering plants, leaves, petals, roots, seed, stem, trunk, wild plants.*

Animals, including humans: *amphibians, arms, birds, body parts, carnivores, ears, elbows, environment, eyes, face, fish, habitat, hair, head, hearing, herbivores, knees, legs, mammals, mouth, neck, omnivores, pets, reptiles, seeing, senses, smells, sounds, taste, teeth, touch.*

Everyday materials: *absorbent/not absorbent, bending, bendy/not bendy, gas, glass, hard/soft, liquid, metal, plastic, property, rock, rough/smooth, shiny/dull, solid, squashing, stretching, stretchy/stiff, twisting, water, waterproof/not waterproof, wood.*

Seasonal changes: *autumn, dark, day length, days, hours, light, months, moon, movement, shadow, spring, summer, sun, winter.*

YEAR 2	
Working scientifically	• Ask simple questions and recognise that they can be answered in different ways. • Observe closely using simple equipment. • Perform simple tests. • Identify and classify. • Use their observations and ideas to suggest answers to questions. • Gather and record data to help answer questions
Plants	• Observe and describe how seeds and bulbs grow into mature plants. • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.
Animals including Humans	• Notice that animals, including humans, have offspring which grow into adults. • Find out about and describe the basic needs of animas, 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.
Rocks, Evolution and Inheritance	
Living things and their habitats	• Explore and compare the differences between things that are living, dead, and things that have never been alive. • Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. • Identify and name a variety of plants and animals in their habitats, including micro-habitats. • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.
Materials	• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
States of Matter	
Light	
Sound	
Electricity	
Forces	
Seasonal Changes, Earth & Space	

Vocabulary to introduce in Year 2

Living things and their habitats: *adaptation, alive, carnivore, characteristics, conditions, consumer, dead, excrete, feed, food chain, grow, habitat, heat, herbivore, life processes, light, living/non-living, micro-habitat, move, ocean, omnivore, pond, producer, rainforest, reproduce, respire, respond to stimuli, seashore, sound, touch, woodland*.

Plants (as for Year 1, plus): *germination, insect pollination, nutrients, pollination, seed dispersal, wind pollination.*

Animals, including humans: *adult, baby, bacteria, balanced diet, carbohydrates, child, circulation, dairy, exercise, fats, fibre, fitness, food groups, germs, growth, healthy, heart rate, infection, life cycle, minerals, nutrition, protein, teenager, toddler, unhealthy, vitamins.*

Uses of everyday materials (as for Year 1, plus): *characteristics, classification, man-made, natural, properties.*

YEAR 3	
Working scientifically	• Ask relevant questions and use different types of scientific enquires to answer them. • Set up simple practical enquires, comparative and fair test. • Make systematic and careful observation and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Gather, record, classify and present data in a variety of ways to help answer questions. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. • Report on findings from enquires, including oral and written explanation, displays or presentations of results and conclusions. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Use straightforward scientific evidence to answer questions or to support their findings.
Plants	• Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves & flowers. • Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. • Investigate the way in which water is transported within plants. • Explore the part that flowers play in the lifecycle of flowing plants, including pollination, seed formation and seed dispersal
Animals including Humans	• Identify that animals, including humans, need the right types and amounts 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.
Rocks, Evolution and Inheritance	• 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	
Materials	
States of Matter	
Light	• Recognise that they need light in order to see things and that dark is the absence of light. • Notice that light is reflected from surfaces. • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. • Recognise that shadows are formed when the light from a light source is blocked by a solid object. • Find patterns in the way that the size of shadows change
Sound	
Electricity	
Forces	• Compare how things move on different surfaces • Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Observe how magnets attract or repel each other and attract some materials and not others. • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. • Describe magnets as having two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing.
Seasonal Changes, Earth & Space	

Vocabulary and concepts to introduce in Year 3

Plants (as for previous years, plus): *absorb, competition for resources, function, minerals, optimum conditions, plant life cycle, plant tissues, pores (stomata), reproduction, seed formation, structure, support, well-aerated soil, well-drained soil.*

Animals, including humans (as for previous years, plus): *ankle, arteries, backbone, ball and socket joints, bone, brain, branching blood vessels, capillaries, cardio-vascular system, cartilage, collar bone (clavicle), contract, endoskeleton, exoskeleton, extensor, fibula, finger, fixed joints, flexor, foot, hand, heart, hinge joints, humerus, involuntary muscles, joints, knee cap (patella), ligaments, moveable joints, movement, muscles, opposing pairs, pelvis, protection, shoulder blades (scapula), skeletal and muscular systems, radius, relax, ribs, skeletons, skull, sliding joints, spinal cord, sternum, support, thigh bone (femur), tibia, toe, ulna, veins, vertebrates, voluntary muscles, wrist.*

Rocks: *crystalline, crystals, erosion, fossils, grains, layers (strata), molten magma, particles, permeability, permeable, physical properties, soils.*

Light: *absorb, bright, dim, emit, light beam, light sources, light spectrum, opaque, rays, reflect, reflection, speed of light, sunlight, torch, translucent, transparent.*

Forces and magnets: *air resistance, attract, compress, direction of force, faster, floating, flying, forcemeter, forces, friction, gravity, magnetic, magnetic field, magnetic forces, Newton meter, Newtons (N), non-magnetic, north pole, poles, pull, push, repel, sinking, sliding, slower, south pole, speed, streamlined, stretch, twist, water resistance.*

YEAR 4	
Working scientifically	• Ask relevant questions and use different types of scientific enquires to answer them. • Set up simple practical enquires, comparative and fair test. • Make systematic and careful observation and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Gather, record, classify and present data in a variety of ways to help answer questions. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. • Report on findings from enquires, including oral and written explanation, displays or presentations of results and conclusions. • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Identify differences, similarities or changes related to simple scientific ideas and processes. • Use straightforward scientific evidence to answer questions or to support their findings.
Plants	
Animals including Humans	• Describe the simple functions of the basic parts of the digestive system in humans. • Identify the different types of teeth in humans ad their simple functions • Construct and interpret a variety of food chains, identifying producers, predators and prey.
Rocks, Evolution and Inheritance	
Living things and their habitats	• 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
Materials	
States of Matter	• Compare and group materials together, according to whether they are solids, liquids and 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 • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
Light	
Sound	• Identity 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	• Identify common appliances that run on electricity. • Construct a simple series electrical circuit, identifying and name its basic parts, including cells, wires, bulbs, switches and buzzers. • Identify whether or not a lamp will light in a series circuit, based on whether or not the lamp is part of a compete 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.
Forces	
Seasonal Changes, Earth & Space	

Vocabulary and concepts to introduce in Year 4

Living things and their habitats (as for Year 2, plus): *classification keys, differences, human effects on the environment (population, development, deforestation, pollution), invertebrates (snails and slugs, worms, spiders, insects), organism, plant groups (trees, grasses, flowering plants, non-flowering plants), similarities, variation characteristics, vertebrates (fish, amphibians, reptiles, birds, mammals).*

Animals, including humans (as for previous years, plus): *absorption of food into blood stream, canines, cavities, chemical breakdown by enzymes, chewing, churning in stomach, dentine, digestion, digestive system, enamel, faeces, fluoride toothpaste, gastric juice, gums, incisors, intestine, molars, nerves, oesophagus, plaque, premolars, pulp cavity, predators, prey, producers, reabsorption of water from waste, saliva, swallowing, tooth decay.*

States of matter: *boiling, condensation, degrees Celsius (°C), energy transfer solid, evaporation, fixed shape and volume, forces of attraction, freezing, gaseous, liquid, melting, particles, rate of evaporation, solidifying, temperature, thermometer, vibrate, water cycle.*

Sound: *echo, frequency of vibration, pitch (higher, lower), reflection of sound, sound insulation, sound wave, tuning fork, vacuum, vibration, volume (louder, softer).*

Electricity: *battery, bulbs, buzzers, cell, closed circuit, conductor, crocodile clips, electrical appliances, insulator, motors, open circuit, simple series circuit, switches, wires.*

YEAR 5	
Working scientifically	• Plan different types of scientific enquires to answer questions, including recognising and controlling variables where necessary. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Use test results to make predictions to set up further comparatives and fair tests. • Report and present findings from enquires, including conclusions, causal relationships and explanations and degree of trust in results, in oral and written forms such as displays and other presentations. • Identify scientific evidence that has been used to support or refute ideas or arguments.
Plants	
Animals including Humans	• Describe the changes as humans develop to old age.
Rocks, Evolution and Inheritance	
Living things and their habitats	• 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
Materials	• Compare and group together everyday materials on the basis of their properties including their hardness, solubility, transparency, conductivity (electrical & 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 & 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. • 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 action of acid on bicarbonate of soda.
States of Matter	
Light	
Sound	
Electricity	
Forces	• Explain that unsupported objects fall towards the earth because of the force of gravity acting between the earth and the falling object. • Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. • Recognise that some mechanisms including levers, pulleys and gears, allow a smaller force to have a greater effect.
Seasonal Changes, Earth & Space	• Describe the movement of the earth, and other planets, relative to the Sun in the solar system. • Describe the movement of the Moon relative to the Earth. • Describe the Sun, Earth and Moon as approximately spherical bodies. • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Vocabulary and concepts to introduce in Year 5

Living things and their habitats and Animals, including humans (as for previous years, plus): *anther, asexual reproduction animal behaviourist, birth, bud, carpel, chromosomes, cross-pollination, death, egg cell (ovum), embryo, fallopian tubes, female gamete, fertilization, filament, gestation, growth, hormones, life cycles, male gamete, menstrual cycle, microorganisms, naturalist, ovaries, ovary, ovulation, penis, petals, placenta, puberty, sepals, sexual reproduction, sperm, stamens, stigma, style, testes, uterus, vagina, vertebrates (reptiles, fish, amphibians, birds, mammals), zygote*

Properties and changes of materials: *buoyancy, burning, change of state, chemical changes, chemical reaction, density, dissolving, elasticity, electrical conductivity, evaporating,*
filtering, filtrate, gas, hardness, irreversible or hard-to-reverse change, liquid, melting, magnetism, polymer, residue, reversible change, rusting (oxidisation), sieving, solid, solubility,
solute, solution, solvent, stiffness, strength, suspension, thermal conductivity, toughness

Earth and space: *asteroids, axis, celestial body, comets, Earth, Earth's rotation, elliptical orbit, gravitational force, heliocentric model of the solar system, galaxy, geocentric model, hemisphere, Jupiter, light year, Mars, Mercury, meteors, moon, Neptune, phases of the moon, Saturn, shadow clock, shooting stars, Sun, sundial, time zones, Uranus, Venus*

Forces (as for Year 3, plus): *drag forces, gears, levers, pulleys, springs, transference of force and motion*

YEAR 6	
Working scientifically	• Plan different types of scientific enquires to answer questions, including recognising and controlling variables where necessary. • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Use test results to make predictions to set up further comparatives and fair tests. • Report and present findings from enquires, including conclusions, causal relationships and explanations and degree of trust in results, in oral and written forms such as displays and other presentations. • Identify scientific evidence that has been used to support or refute ideas or arguments.
Plants	
Animals including Humans	• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. • Describe the ways in which nutrients and water are transported within animals, including humans.
Rocks, 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.
Living things and their habitats	• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro- organisms, plants and animals. • Give reasons for classifying plants and animals based on specific characteristics.
Materials	
States of Matter	
Light	• Recognise that light appears to travel in straight lines. • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. • Use the idea that light travels in straight lines to explain why shadows have the same shape as the object that cast them.
Sound	
Electricity	• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. • Use recognised symbols when representing a simple circuit in a diagram.
Forces	
Seasonal Changes, Earth & Space	

Vocabulary and concepts to introduce in Year 6

Living things and their habitats (as for previous years, plus): *classification, classification keys, dichotomous/binary keys, five kingdoms (bacteria, protists, animals, plants, fungi), genetic variation, invertebrates, vertebrates (reptiles, fish, amphibians, birds, mammals)*

Animals, including humans (as for previous years plus): *adrenaline, aerobic respiration, alveoli, aorta, arteries, atrium, blood, blood vessels, bronchi, bronchioles, capillaries, carotid artery, circulatory system, clotting, deoxygenated, diaphragm, gills, haemoglobin, heart, heart rate, intercostal muscles, lungs, oxygenated, plasma, platelets, pulmonary artery, pulmonary vein, pulse, red blood cells, veins, ventricles, white blood cells, wind pipe (trachea)*

Evolution and inheritance: *adaptation, chromosomes, competition, DNA, environmental conditions, environmental variations, evolution, evolutionary change, features, fossil records, genes, genetic variation, inheritance, natural selection, palaeontologist, survival of the fittest, variation over time*

Light (as for Year 3, plus): *absorption, lenses, light source, optics, periscope, prism, rainbow, reflection, refraction, spectrum, transmission*

Electricity (as for Year 4, plus): *circuits, circuit diagrams, components, series circuit, voltage*