Progression in Science

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically	Make observations Talk about changes Ask simple questions	Ask simple questions. Observe closely. Perform simple tests to explore a question or idea suggested to them, with support. Gather and record data using a given table.	Ask simple questions and recognises that simple questions can be answered in different ways. Observe closely using simple equipment. Identify things to measure or observe that are relevant to the question or idea they are investigating using a simple test (in a group or independently) Record data in a wider range of given ways Use their data and results to answer questions Use observations and ideas to suggest answers to questions.	Ask relevant questions and use different types of scientific enquiries to answer them Make systematic and careful observations during a fair test Plan and carry out a simple fair test relevant to the question or ideas they are investigating Take and record accurate measurements using standard units (e.g. to a whole cm) Gather and record data in to simple formats e.g. tables and bar charts. Use simple scientific language to present findings Record and report findings from enquiries in labelled drawings and diagrams Draw simple conclusions using my own results Begin to recognise when a test is not fair and suggest improvements Identify differences and similarities	Ask relevant questions and use different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests Know which are control, dependent and independent variables in a fair test Identify one or more control variables from those provided when conducting a fair test Make observations and take increasingly accurate measurements using standard units (e.g. to a decimal point) Use a range of equipment, including thermometers and data loggers Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Report on findings from enquiries, including oral and written	Ask relevant questions and use different types of scientific enquiries to answer them Identify one or more control variables in investigations when conducting a fair test Identify which type of measurements should be taken Take accurate and appropriate measurements using specific, provided equipment Record data and results (e.g. using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs) Use test results to make predictions Report and present findings from enquiries with a given format	Ask relevant questions and use different types of scientific enquiries to answer them Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Recognise which type of practical enquiry is most appropriate to the question or idea being investigated, before planning and carrying out the enquiry Take measurements, using a range of scientific equipment, with increasing accuracy and precision Identify when to take 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 comparative and fair tests Report and present

					explanations, 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		findings from enquiries, including conclusions, causal relationships and explanations of 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
Vocabulary	Changes, look, watch, same, different, test, experiment	properties, magnifying glass, question, answer, observe/observation, test, explore, gather, record, label, data, identify, classify, equipment, measure, table, diagram, pictogram.		fair test, comparative, accurate, standard units, thermometer, data logger, gather, record, classify, present, data, tables, bar graph, classification keys, presentation, explain, conclusion, prediction, differences, similarities, theory, dependent variable, independent variable, results		controlled variables, classify, comparative, enquiry, causal relationship, patterns, precise, measurements, opinion, fact, communicate, hypothesis, line graph, scatter graph, repeat readings, secondary information, justify, outlier, anomaly	
Living things and their Habitats- Knowledge	Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another.		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		Recognise that living things can be grouped in a variety of ways Explore and use classification keys to 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	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	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) Gives reasons for classifying plants and animals based on specific characteristics

			Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name sources of food				
Vocabulary			living, dead, never been alive, move, reproduce, sensitive, grow, nutrition, habitat, animal, plant, microhabitat, food, sources, food chain, predator, prey, producer, birth, decay, energy, life cycle, consumption.		group, variety, identify, classification, key, environment, kingdom, species, fungi, bacteria, climate change, extinction, pollution	mammal, amphibian, insect, bird, reproduction, life span, egg, live young, hatchling, fledgling, metamorphosis	organism, micro-organism, invertebrates, vertebrates, virus, thorax, arthropod, arachnid, antenna
Plants- Knowledge	They make observations of animals and plants and explain why some things occur, and talk about 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, including trees	Observe and describe how seeds and bulbs grow into mature plants Find and describe how plants need water, light and a suitable temperature to grow and stay healthy	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 vary between species (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant Investigate the way in which water is transported within plants Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.			
Vocabulary		plant, tree, wild, garden, deciduous, evergreen, leaf, stem, flower, roots, component, energy,	seeds, bulbs, mature, healthy, water, light, temperature, optimum, conditions, survival, nutrients, consume, soil	absorb, reproduction, photosynthesis, sunlight, support, anchor, attract, stamen, anther, stigma, filament, style, ovary,			

		growth, structure, trunk		petal, sepal, pistil, pollen, pollination, nectar, female, male, fertilisation, wind, seed dispersal, expulsion, transportation			
Animals, including Humans- Knowledge	They make observations of animals and plants and explain why some things occur, and talk about changes.	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	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 amount of different types of food, and hygiene.	Identify that animals, including humans, need the right types and amounts of nutrition, and 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	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, consumers and prey	Describe the changes as humans develop to old age	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
Vocabulary		energy, growth, habitat, fish, amphibian, reptile, bird, mammal, carnivore, herbivore, omnivore, vertebrate, skeleton, organ, scale, fur, hair, skin, feather, bone, skeleton, live young, egg, cold blooded, warm blooded, pet, teeth,	offspring, adult, young, human, water, food, air, exercise, nutrients, nutrition, reproduction, diet, survival, hygiene, germs, overweight, underweight, obese, healthy, unhealthy, consumption	protein, carbohydrates, fats, sugar, vitamins, minerals, fruit, vitamin, vegetable, meat, grain, seeds, skeleton, muscle, support, protection, movement, spine, femur, tibia, fibula, radius, ulna, skull, clavicle, ribcage, pelvis, patella, biceps, abdominals, triceps, hamstrings, calves,	digestion, excretion, peristalsis, anus, duodenum, small intestine, large intestine, stomach, rectum, oesophagus, tongue, saliva, acid, bile, enzymes, functions, incisor, canine, molar, food chain, primary/secondary/	develop, grow, change, baby, infant, toddler, child, teenager, adolescent, puberty, adult, geriatric, life cycle, life span, embryo, weaned	circulatory, function, heart, blood vessels, vein, artery, valve, muscle, blood, impact, diet, exercise, drugs, legal, illegal, lifestyle, transportation, aorta, atrium, capillary, pulse, ventricle, resting heart rate

		meat, plant, gills, torso, limb, hand, eye, nose, ear, tongue, senses, touch, smell, hearing, taste		cartilage, invertebrate	tertiary consumers.		
Evolution and Inheritance- Knowledge							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
Vocabulary							inhabited, identical, adaptation, variation, genes, DNA, evolution, inherit, Charles Darwin, artificial selection, natural selection, advantageous, extinction
Materials - Knowledge	Children know about similarities and differences in relation to places, objects, materials and living things.	*<u>EVERYDAY MATERIALS</u>* 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	*<u>USES OF EVERYDAY MATERIALS</u>* 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	*<u>ROCKS</u>* 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	*<u>STATES OF MATTER</u>* 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	*<u>PROPERTIES AND CHANGES OF MATERIALS</u>* 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	

		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	be changed by squashing, bending, twisting and stretching.	Recognise that soils are made from rocks and organic matter	materials change state (in Degrees Celsius) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic Demonstrate that dissolving, mixing and changes of state are reversible changes Explain that some change result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the act of acid on bicarbonate of soda	
Vocabulary		material, object, wood, plastic, glass, metal, paper, water, rock, cardboard, property, hard, soft, stretchy, stiff, shiny, dull, rough, smooth,	suitability, solid, change, squash, twist, stretch, conductor, insulator, flexible, rigid, pliable, supple, malleable, multiple uses, purpose, useful, categorise,	sedimentary, igneous, metamorphic, minerals, magma/lava, sediments, permeable, texture, impermeable, weight, pattern, rock, soil, classify, organic matter,	solid, liquid, gas, state, degrees celsius, evaporation, condensation, water vapour, water cycle, precipitation, dissolve, particle, temperature,	reversible, irreversible, hardness, solubility, transparency, conductivity, insulator magnetism, electrical, thermal, solution, separate,	

		bendy, waterproof, absorption, sort, group, compare, similar, different, matter	particular use	fossil, formed, bones, bacteria, dead, decay, sediment, resistant, extinction, weathering, palaeontologist, molten rock, tectonic plate, crust	bond, thermometer, sublimation, boiling point	filter/filtration, sieve, evaporate, materials, mixture, state, crystallisation, saturation, solvent	
Seasonal Changes- Knowledge	Looks closely at similarities, differences, patterns and change	Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies					
Vocabulary		season, autumn, winter, spring, summer, weather, rain, snow, fog, sun, cloud, wind, hail, thunder, lightning, dark, light, day, night, long, short, hot, cold.					
Light & Sound- Knowledge	Using senses to explore the world around them.			*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 light from a light source is blocked by an opaque object Find patterns in the way that the size of shadows change	*SOUND* 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 the sound and the strength of the vibrations that produced it Recognise that sounds get fainter as the		*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 objects that cast

					distance from the sound source increases		them
Vocabulary				angle, bright, dark, dim, electricity, emits, light, mirror, opaque, reflects, shadow, source, beam, absence, translucent, transparent, reflect, surface, straight, protect, hazardous, incident ray, photons, image	amplitude, decibel, energy, frequency, medium, power, soundwaves, vibrate, vibrations, air, source, transmit, travel, pitch, volume, high, low, quiet, loud, faint, eardrums, energy		absorb, phenomena, angle of incidence, angle of reflection, refraction, spectrum, periscope
Forces and Magnets- Knowledge	Practical activities within FS provision – using pulleys in construction areas outdoors, pushing trains along a track ….			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 the two poles of a magnet Predict whether two magnets will attract or repel each other depending on which poles are facing		Explain that unsupported objects fall towards 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	
Vocabulary				force, push, pull, friction, surfaces, materials, contact, magnet, magnetic, non-magnetic, attraction, repulsion,		gravity, air resistance, water resistance, mechanisms, lever, pulley, gear, cause, effect,	

				pole, north, south, sliding friction, static friction, resist, elastic		acceleration, buoyancy, effort, force meter, fulcrum, load, mass, Newton, pivot, rigid, streamlined, terminal velocity, weight	
Electricity- Knowledge	ICT – using torches/ battery powered objects Light topic links e.g. bonfire and festival of Diwali.				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		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a circuit Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and on/off position of switches Use recognised symbols when representing a simple circuit in a diagram
Vocabulary					appliance, circuit, series circuit, charge, cell, wire, bulb, switch, buzzer, loop, battery, open circuit, closed circuit, conductor, insulator, components, electron, current, static electricity, emit		voltage, negative terminal, positive terminal, resistance
Earth and	Space – as and					Describe the movement	

Space-Knowledge	when according to interests of child and topics of different fs units. ELG the world Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another.					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						relative, planet, moon, solar system, spherical bodies, rotation, rotate, orbit, satellite, eclipse, universe, star, constellation, axis, celestial body, lunar, solar, telescope	