

For a child to be able to develop their scientific skills, they need to be given the freedom to explore ideas, questions and concepts. They must have the chances to pose their own questions for investigation and to feel empowered in making mistakes and changing ideas.

	EXPLORE NC Objectives	Vocabulary	DREAM
Year 1	<ul style="list-style-type: none"> Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, 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. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. 	Fish, Reptiles, Mammals, Birds, Amphibians (+ examples of each) Herbivore, Omnivore, Carnivore, Leg, Arm, Elbow, Head, Ear, Nose, Back, Wings, Beak	Marine Biologist Vet Zoologist Natural broadcaster
Year 2	<ul style="list-style-type: none"> Investigate 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. Notice that animals, including humans, have offspring which grow into adults. 	Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene	Marine Biologist Vet Zoologist Natural broadcaster
Year 3	<ul style="list-style-type: none"> Identify that animals, including humans, need the right types and amounts of nutrition, that they cannot make their own food and they get nutrition from what they eat. Identify that humans and some animals have skeletons and muscles for support, protection and movement. 	Movement, Muscles, Bones, Skull, Nutrition, Skeletons,	Marine Biologist Vet Zoologist Doctor Radiographer Physio Nutritionist
Year 4	<ul style="list-style-type: none"> 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 	Mouth, Tongue, Teeth, Oesophagus, Stomach, Small Intestine, Large Intestine, Herbivore, Carnivore, Canine, Incisor, Molar	Doctor Dentist Nutritionist Chef Biologist – checking food content
Year 5	<ul style="list-style-type: none"> Describe the changes as humans develop to old age. 	Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty	Care worker Doctor Nurse Social worker
Year 6	Describe the ways in which nutrients and water are transported within 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 human bodies function.	Circulatory, Heart, Blood Vessels, Veins, Arteries, Oxygenated, Deoxygenated, Valve, Exercise, Respiration	Doctor Surgeon Dentist Nutritionist Chef Fitness Coach Fitness instructor

Science Progression Planner (**FOR PLANTS unit**)

	EXPLORE NC Objectives	Vocabulary	DREAM
Year 1	<ul style="list-style-type: none"> Identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen. Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers. Observe changes across the four seasons Observe and describe the weather associated with the seasons and how day length varies 	Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem	Gardener Ground worker Florist Agriculture Farmer
Year 2	<ul style="list-style-type: none"> 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. 	Seeds, Bulbs, Water, Light, Temperature, Growth	Gardener Ground worker Florist Agriculture Farmer
Year 3	<ul style="list-style-type: none"> Identify and describe the functions of different parts of flowering plants: roots, stem, 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. Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 	Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, Flower	Gardener Ground worker Florist Agriculture Farmer Food biologist Woodland trust Conservation
Year 4	NOT TAUGHT EXPLICITLY		
Year 5	NOT TAUGHT EXPLICITLY		
Year 6	NOT TAUGHT EXPLICITLY		

Science Progression Planner (for LIVING THINGS AND THEIR HABITATS unit)

	EXPLORE NC Objectives	Vocabulary	DREAM
Year 1	NOT TAUGHT EXPLICITLY		
Year 2	<ul style="list-style-type: none"> Explore and compare the differences between things that are living, that are dead and 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. Investigate and describe the basic needs of animals, including humans, for survival (water, food and air). Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets). 	Living, Dead, Habitat, Energy, Food chain, Predator, Prey, Woodland, Pond, Desert	Marine Biologist Vet Zoologist Conservation Archaeologist
Year 3	NOT TAUGHT EXPLICITLY		
Year 4	<ul style="list-style-type: none"> Recognise that living things can be grouped in a variety of ways Recognise that environments are constantly changing and that this can sometimes pose dangers to specific habitats. Explore and use classification to identify and name a variety of living things (plants and animals) in the local and wider environment. 	Vertebrates, Fish, Amphibians, Reptiles, Birds, Mammals, Invertebrates, Snails, Slugs, Worms, Spiders, Insects, Environment, Habitats	Marine Biologist Vet Zoologist Conservation Archaeologist Ecology researcher
Year 5	<ul style="list-style-type: none"> 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. 	Mammal, Reproduction, Insect, Amphibian, Bird, Offspring	Care worker Doctor Nurse Social worker
Year 6	<ul style="list-style-type: none"> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organism, plants and animals Give reasons for classifying plants and animals based on specific characteristics 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. 	Classification, Vertebrates, Invertebrates, Micro-organisms, Amphibians, Reptiles, Mammals, Insects + EVOLUTION Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics	Doctor Dentist Nutritionist Chef Biologist – checking food content Fitness Coach Fitness instructor

Science Progression Planner (for MATERIALS/STATES OF MATTER unit)

	EXPLORE NC Objectives	Vocabulary	DREAM
Year 1	<ul style="list-style-type: none"> Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. Compare and group together a variety of everyday materials on the basis of their simple physical properties Describe the simple physical properties of a variety of everyday materials. Distinguish between an object and the material from which it's made 	Wood, Plastic, Glass, Paper, Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth	Archaeologist, Geologist, fashion designer, inventor, builder, architect,
Year 2	<ul style="list-style-type: none"> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard. 	Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching Elastic, Foil	Ironmongery, carpenter, architect, conversation
Year 3	<ul style="list-style-type: none"> Compare and group together different kinds of rocks on the basis of their simple, physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock. Recognise that soils are made from rocks and organise matter 	Fossils, Soils, Sandstone, Granite, Marble, Pumice, Crystals, Absorbent	Geologist, surveyor, architect, planning officer, conservation, landscape architect
Year 4	<ul style="list-style-type: none"> 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. 	Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating	Chemist, ironmonger, carpenter, chocolatier, conservation, ecology,
Year 5	<ul style="list-style-type: none"> 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 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. 	Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing Hardness, Solubility,	Chemist, conservation, engineer, aeronautical engineer, chocolatier, Environmental engineer
Year 6	NOT TAUGHT EXPLICITLY		

Science Progression Planner (for LIGHT, SOUND, SPACE unit)

	EXPLORE NC Objectives	Vocabulary	DREAM
Year 1	<ul style="list-style-type: none"> Observe changes across the four seasons. Observe the apparent movement of the Sun during the day. Observe and describe weather associated with the seasons and how day length varies. Observe and name a variety of sources of light, including electric lights, flames and the Sun, explaining that we see things because light travels from them to our eyes. 	Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark	Astrophysicist, meteorologist, optician
Year 2	NOT EXPLICITLY TAUGHT		
Year 3	<ul style="list-style-type: none"> Notice that light is reflected from surfaces. Recognise that they need light in order to see things and that dark is the absence of light Associate shadows with a light source being blocked by something; find patterns that determine the size of shadows Find patterns in the way that the size of shadows change Recognise that light from the sun can be dangerous and that there are ways to protect eyes. 	Light, Shadows, Mirror, Reflective, Dark, Reflection	Photography, animator,
Year 4	<ul style="list-style-type: none"> 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's source increases. 	Volume, Vibration, Wave, Pitch, Tone, Speaker	Musician, sound engineer, radio dj, sound mixer, audiologist,
Year 5	<ul style="list-style-type: none"> 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. 	Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation	Astrophysicist, astronaut, meteorologist
Year 6	<ul style="list-style-type: none"> Understand that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes. 	Refraction, Reflection, Light, Spectrum, Rainbow, Colour,	Optician, photography,

Science Progression Planner (for FORCES AND ELECTRICITY unit)

	EXPLORE NC Objectives	Vocabulary	DREAM
Year 1	NOT EXPLICITELY TAUGHT		
Year 2	NOT EXPLICITELY TAUGHT		
Year 3	<ul style="list-style-type: none"> Notice that some forces need contact between two objects and some forces 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 magnets with attract or repel each other 	Magnetic, Force, Contact, Attract, Repel, Friction, Poles, Push, Pull	Electrician, computer builder, ICT tech,
Year 4	<ul style="list-style-type: none"> Recognise some common conductors and insulators and associate metals with being good conductors. 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. 	Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators	Electrician, sound engineer,
Year 5	<ul style="list-style-type: none"> 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. 	Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys	Physicist, aeronautical engineers,
Year 6	<ul style="list-style-type: none"> Use recognised symbols when representing a simple circuit in a diagram 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. 	Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell	Electrician, sound engineer, car mechanics,

Working Scientifically Objectives

DISCOVER		
<i>Skills</i>		
<i>Key Stage 1</i>	<i>Year 3 and 4</i>	<i>Year 5 and 6</i>
<ul style="list-style-type: none"> - 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 observations and ideas to suggest answers to questions. - Gather and record data to help in answering questions. 	<ul style="list-style-type: none"> - Ask relevant questions and use different types of scientific enquiries to help them. - Set up simple practical enquiries and comparative and fair tests. - Make systematic and careful observations - Make accurate measurements using standard units, using a range of equipment, e.g. 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, bar charts and tables. - Report on findings from enquiries, including oral and written 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. 	<ul style="list-style-type: none"> - Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. - Take measurements, using a range of scientific equipment, with increasing accuracy and precision. - Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs. - Use test results to make predictions to set up further comparative and fair tests. - Use simple models to describe scientific ideas. - Report and present findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations. - Present findings in written form, displays and other presentations. - Use test results to make predictions to set up further comparative and fair tests. - Identifying scientific evidence that has been used to support or refute ideas or arguments