

Development Matters – Understanding the World		
Nursery	Reception	ELG
• Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Talk about what they see, using a wide vocabulary. • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things. • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice.	• Explore the natural world around them. • Describe what they see, hear and feel whilst outside • Understand the effect of changing seasons on the natural world around them. • Recognise some environments that are different from the one in which they live.	• Explore the natural world around them, making observations and drawing pictures of animals and plants • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.
Nursery		
Autumn All About Me/ Over the Rainbow Opportunities: • Pumpkin explorations • Exploring changing materials- melting ice, baking Christmas biscuits • Observing and commenting on seasonal changes on an autumn walk • Sharing inf. books about autumn/seasons • Using senses to explore different textures, e.g. dry/wet cornflakes	Spring Once Upon a Time/ If You Go Down to the Woods Today... Opportunities: • Exploring different materials when building houses for the Three Little Pigs/ comfortable chairs for the Bears • Planting beans, observing/commenting on how plants grow • Observing and commenting on seasonal changes on a spring walk • Planting cress/observing and commenting on how it grows • Exploring changing materials- melting ice, baking Gruffalo crumble • Sharing inf. books on spring/seasons, growing/planting. • Using senses to explore different textures, e.g. dry/wet mud, bark rubbing	Summer Under the Sea/ Ch...Ch...Changes Opportunities: • Respecting care for plants planted in the garden • Water investigations-pushing rubber ducks/fish down the gutters by pouring water on them, making windmills and observing what happens to them on a windy day or by blowing air on them) • Observing life cycle of a caterpillar • Melting ice and commenting on how it changes • Water investigations-pushing rubber ducks/fish down the gutters by pouring water on them • Reading inf. books about sea creatures, caterpillars and butterflies
Reception		
Autumn Incredible Me/ Out of this World Opportunities: • Naming body parts through nursery rhymes • Using senses to explore different fruits/vegetables • Observing and commenting on seasonal changes on an autumn walk • Sharing inf. books about autumn/seasons	Spring Once Upon a Time/In the Deep Dark Woods Opportunities: • Planting vegetable/flower seeds • Sharing inf. books on planting/growing, spring/seasons • Spring walk in the playground • Using senses to explore different textures, e.g. grass, sticks, mud • Daffodils experiment- some left out with no water/what has happened to daffodils/Why?	Summer Splish Splash/On the Go Opportunities: • sharing inf. books about sea/pond life • pond dipping in the playground • visit to the local Ecology Centre – pond dipping & bug hunt/bark rubbing • Water investigations (forces)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals, including humans	Knowledge: • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals/	Knowledge: • Notice that animals, including humans, have offspring which grow into adults • Find out about and describe the basic needs of animals,	Knowledge: • Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own	Knowledge: • 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	Knowledge: • Describe the changes as humans develop to old age Working scientifically skills: • Report data and results of increasing complexity using scientific diagrams and labels,	Knowledge: • Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood

	- 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 Working scientifically skills: - Gather and record data to help answer questions - Identify and classify - Perform simple tests - Use observations and ideas to suggest answers to questions - Group and sort Vocabulary: head, body, skeleton, brain, pupil, ear, sound, tongue, taste, touch, smell, fish, amphibian reptile mammal bird herbivore omnivore carnivore warm-blooded, cold-blooded	including humans, for survival (water, food and air) - Describe the importance of exercise, eating the right amounts of different types of food, and hygiene for humans Working scientifically skills: - Perform simple tests - Use my observations and ideas to suggest answers to questions - Identify and classify - Gather and record data to help in answering questions - Ask simple questions and recognise that they can be answered in different ways Vocabulary: survival shelter nutrition oxygen healthy protein carbohydrate dairy fat exercise hygiene, life cycle, foetus, womb, offspring, reproduction, pupa, metamorphosis, tadpole, froglet, toddler, child, adult, teenager, old age,	food; they get nutrition from what they eat - Identify that humans and some other animals have skeletons and muscles for support, protection and movement Working scientifically skills: - Gather, record, classify and present data in a variety of ways to help in answering questions - Use straightforward scientific evidence to answer questions or to support their findings - Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables - Identify differences, similarities or changes related to simple scientific ideas and processes Vocabulary: nutrition, carbohydrate, protein, fatty acid, vitamin, mineral, energy, balanced diet, vertebrate, invertebrate endoskeleton, exoskeleton, hydrostatic skeleton, skull, rib cage, spine, muscle, contract, hamstrings, biceps, diaphragm	- Construct and interpret a variety of food chains, identifying producers, predators and prey Working scientifically skills: - Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - Make systematic and careful observations - Report on findings from enquiries, including oral and written explanations - Set up simple practical enquiries, comparative and fair tests - Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Vocabulary: digestive system, oesophagus, stomach, small intestine, large intestine, incisors, canines, molars, jaw, gum, ecosystem, producer, consumer, prey, predator	classification keys, tables, scatter graphs, bar and line graphs - Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations - Take measurements, using a range of scientific equipment, with increasing accuracy and precision, and take repeat readings when appropriate - Identify scientific evidence that has been used to support or refute ideas or arguments Vocabulary: Offspring foetus, dependent, adolescent puberty, gestation, pregnant, toddler, prenatal, breeding, embryo, womb	- 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 Working scientifically skills: - Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Take measurements, using a range of scientific equipment, with increasing accuracy and precision, and take repeat readings when appropriate - Identify scientific evidence that has been used to support or refute ideas or arguments - Plan different types of scientific enquiries to answer questions, and recognise and control variables where necessary - Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations Vocabulary: circulatory system, BPM, diet, pulse, oxygenated, deoxygenated, atrium, ventricle, vessel, valve, diffusion, osmosis
Living things and their habitats		Knowledge: - 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		Knowledge: - 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	Knowledge: - 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 Working scientifically skills: - Plan different types of scientific enquiries to answer questions,	Knowledge: 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

		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 Working scientifically skills: - Ask simple questions and recognise that they can be answered in different ways - Gather and record data to help in answering questions - Use my observations and ideas to suggest answers to questions - Observe closely, using simple equipment - Identify and classify Vocabulary: Senses, nutrition, reproduce, breathe, habitat, microhabitat, survive, producer, consumer		- Recognise that environments can change and that this can sometimes pose dangers to living things Working scientifically skills: - Identify differences, similarities or changes related to simple scientific ideas and processes - Gather, record, classify and present data in a variety of ways to help in answering questions - Use straightforward scientific evidence to answer questions or to support their findings - Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Vocabulary: Ecosystem, rainforest, deforestation, drought biodiversity, recycling, fossil fuels, pollution, greenhouse gases, emissions, climate change, endangered, conserve, habitat, microhabitat, vertebrate, invertebrate, adaptation, ecosystem, species, climate, exposure, camouflage	including recognising and controlling variables where necessary - Report and present findings from enquiries - including conclusions, causal relationships and explanations of and a 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 Vocabulary: naturalist, metamorphosis, endangered, asexual, reproduction, larva, pupa, embryo, fertilisation	- Give reasons for classifying plants and animals based on specific characteristics Working scientifically skills: - Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs. - Plan different types of enquiries to answer questions including recognising and controlling variables where necessary - Identify scientific evidence that has been used to support or refute ideas or arguments - Report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays or other presentations - Identify scientific evidence that has been used to support or refute ideas - Group and classify - Record scientific data using diagrams Vocabulary: classify, prokaryote, species, vertebrate, invertebrate, microorganism, fungi, kingdom
Plants	Knowledge: - Identify and name a variety of common and wild and garden plants, including deciduous and evergreen trees - Identify and describe the basic structure of a variety	Knowledge: - Observe and describe how seeds and bulbs turn into mature plants - Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	Knowledge: - 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			

	of common flowering plants, including trees Working scientifically skills: • Ask simple questions • Observe closely and use observations and ideas to suggest answers to questions • Identify and classify • Gather and record data Vocabulary: seed, plant, tree, soil, deciduous, evergreen, stem, petal, leaf, root, flower	Working scientifically skills: • Perform simple tests • Use observations and ideas to suggest answers to questions • Gather and record data to help in answering questions • Identify and classify • Observe closely, using simple equipment • Perform simple tests Vocabulary: seeds, bulbs, growth, plant, photosynthesis, carbon, dioxide, oxygen, pollination, life cycle germination, reproduction, seedling, suitable temperature, survive, light	(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 Working scientifically skills: • Ask relevant questions and use different types of scientific enquiries to answer them • Set up simple practical enquiries, comparative and fair tests • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • 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 • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Vocabulary: nutrients, fertiliser, chlorophyll, stomata, photosynthesis, UV light, pollination, pollen nectar, seed, dispersal, pollinator, germination, seed dispersal,			
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 Working scientifically skills: - Report and present findings from enquiries - including conclusions, causal relationships and explanations of and a 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 Vocabulary: adaptation, climate, inheritance, evolution, DNA, natural selection, ancestor, husbandry, generation, fossilisation, genetic modification
Materials	Everyday Materials Knowledge: - 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 Working scientifically skills: - Perform simple test - Identify and classify - Use observations and ideas to suggest answers to questions - Gather and record data to help in answering questions Vocabulary:	Uses of Everyday Materials Knowledge: - 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 Working scientifically skills: - Use observations and ideas to suggest answers to questions - Perform simple tests - Gather and record data to help in answering questions Vocabulary: material, property, obstacle, construction, stretchy, elastic, force, bend, wood, metal, plastic, brick, rock, paper, glass	Rocks Knowledge: - 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 Working scientifically skills: - 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 - Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range	States of Matter Knowledge: - Compare and group materials together, according to whether they are solids, liquids or gases - Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) - Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature Working scientifically skills: - Gather, record, classify and present data in a variety of ways to help in answering questions - Use straightforward scientific evidence to answer questions or to support their findings - Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of	Properties of Materials/Changes of Materials Knowledge: - 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	

	material, fabric, wood, plastic, metal, property, opaque, transparent, strong, clay, brick, roof, slate, window pane, window frame, cotton, waterproof		of equipment, including thermometers and data loggers Identify differences, similarities or changes related to simple scientific ideas and processes Vocabulary: igneous rocks intrusive extrusive crystals magma sedimentary rock metamorphic rock limestone marble sandstone fossil organic matter mineral	equipment, including thermometers and data loggers - Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables - Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Vocabulary: thermometer, melting point, freezing point, boiling point, solid, liquid, gas, evaporation, condensation, particles, water vapour, substance,	usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda Working scientifically skills: - Take measurements, using a range of scientific equipment, with increasing accuracy and precision, and 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 findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations - Plan different types of scientific enquiry to answer questions, including recognising and controlling variables where necessary - Identify scientific evidence that has been used to support or refute ideas or arguments - Use test results to make predictions to set up further comparative and fair tests Vocabulary: conductive, magnetic, durable, transparent versatile, insulator dissolve, solute, insoluble, soluble, solvent, solution, evaporation, condensation, chemical change, physical change, reversible, irreversible change, states of matter, corrosion, combustion	
Sound				Knowledge: - Know 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 Working scientifically skills: • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusion • Identify differences, similarities or changes related to simple scientific ideas and processes • Set up simple practical enquiries, comparative and fair tests • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Vocabulary: sound source, vibration, medium, sound waves, eardrum, pitch, volume, insulate, ear canal, amplitude,		
Earth and space				Knowledge: • 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		

					Working scientifically skills: • Identify scientific evidence that has been used to support or refute ideas or arguments • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, and take repeat readings when appropriate • Identify scientific evidence that has been used to support or refute ideas or arguments • Report and present findings from enquiries - including conclusions, causal relationships and explanations of and a degree of trust in results - in oral and written forms such as displays and other presentations • Use test results to make predictions to set up further comparative and fair tests Vocabulary: Solar System, spherical, orbit, astronomy, heliocentric, geocentric, axis, poles, hemisphere, gravitation force,	
Light			Knowledge: • Recognise that they need light in order to see things and that dark is the absence of light • Notice that light is reflected from surfaces • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes • Recognise that shadows are formed when the light from a light source is blocked by an opaque object • Find patterns in the way that the size of shadows change Working scientifically skills: • Gather, record, classify and present data in a variety of ways to help in answering questions • Record findings using simple scientific language,		Knowledge: • 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 Working scientifically skills: • Identify scientific evidence that has been used to support or refute ideas or arguments • Plan different types of scientific enquiries to answer questions, and recognise and control variables where necessary • Record data and results of increasing complexity using	

			drawings, labelled diagrams, keys, bar charts, and tables • Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • Identify differences, similarities or changes related to simple scientific ideas and processes Vocabulary: light, source, natural, artificial, reflect, ultraviolet rays, exposure, protection, fluorescent, reflective, shadow, opaque, sundial, rays			scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations Vocabulary: opaque, transparent, translucent, reflection, light source, refraction, light ray, pupil, angle, disperse, spectrum,
Forces and Magnets			Knowledge: • Compare how things move on different surfaces • Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance • Observe how magnets attract or repel each other and attract some materials and not others • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • Describe magnets as having 2 poles Predict whether 2 magnets will attract or repel each other, depending on which poles are facing Working scientifically skills: • Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts,		Knowledge: • 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 Working scientifically skills: • Identify scientific evidence that has been used to support or refute ideas or arguments • Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations • Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Vocabulary:	

			and I can set up simple practical enquiries, comparative and fair tests Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Vocabulary: force, contact force, non-contact force, air resistance, friction, attraction, repulsion, motion, gravity, magnetism		Gravity, resistance, surface, friction, pulley, lever, gear/cog, weight mass, upthrust, pivot	
Electricity			- 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 conductor Working scientifically skills: - Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions - Use straightforward scientific evidence to answer questions or to support their findings - Gather, record, classify and present data in a variety of ways to help in answering questions - Set up simple practical enquiries, comparative and fair tests		Knowledge: - 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 Working scientifically skills: - Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Plan different types of scientific enquiries to answer questions, and recognise and control variables where necessary - Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations - Take measurements, using a range of scientific equipment, with increasing accuracy and precision, and take repeat readings when appropriate Vocabulary: battery, wires, current, voltage, resistor, amps, output, complete circuit, incomplete circuit,	

				• Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Ask relevant questions and use different types of scientific enquiries to answer them Vocabulary: circuit, battery, buzzer, bulb, motor, switch, electrical current, wires, electrical conductor, electrical insulator, electrical appliances, non-renewable energy, renewable energy, wind turbines, solar panels, hydropower		conductor, insulator, voltmeter, ammeter, component
Seasonal changes	Knowledge: • Observe changes across the 4 seasons • Observe and describe weather associated with the seasons and how day length varies Working scientifically skills: • Use my observations and ideas to suggest answers to question • Identify and classify • Perform simple tests • Gather and record data to help in answering questions Vocabulary: season, spring, summer, autumn, winter, hibernate, temperature, weather					