

Goring CE Primary School
Progression Map
Science

Curriculum strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working scientifically	<p>CONTINUOUS PROVISION →</p> <p>Early Learning Goals Characteristics of Effective Learning Early Learning Goals: The Natural World</p> <ul style="list-style-type: none"> Explore the natural world around them, making observations and drawing pictures of animals and plants Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter 						
Plan (Questioning and Predicting)	<ul style="list-style-type: none"> Think of some questions to ask Choose the resources they need for their chosen activities and say when they do or do not need help 	<ul style="list-style-type: none"> Ask simple questions with scaffolding if necessary within taught science topics and in everyday Suggest ways of answering a question. 	<ul style="list-style-type: none"> Ask simple questions. Recognise that questions can be answered in different ways. 	<ul style="list-style-type: none"> Ask relevant questions with support if necessary. Use different types of scientific enquiry to answer questions. Set up simple & practical enquiries. Begin to understand what comparative & fair tests are and why they are important. 	<ul style="list-style-type: none"> Ask relevant questions. Use different types of scientific enquiries to answer their questions. Set up simple and practical enquiries, comparative and fair tests. 	<ul style="list-style-type: none"> Plan different types of scientific enquiries to answer questions. With modelling and support, recognise and control variables where necessary within enquiries. 	<ul style="list-style-type: none"> Plan different types of scientific enquiries to answer questions. Recognise and control variables where necessary.

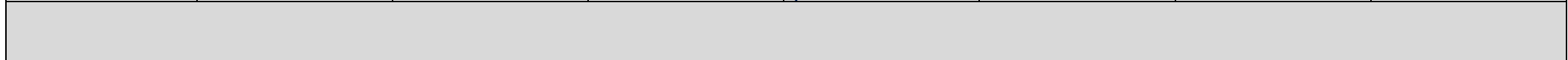
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<p style="text-align: center;">Do (Planning and Carrying Out Investigations)</p>	<ul style="list-style-type: none"> • Perform a simple test • Discuss what they can see, touch, smell, hear, feel or taste • Identify and classify things they observe 	<ul style="list-style-type: none"> • With direction when needed, observe closely. • Conduct simple tests, with support. • Identify and classify with guidance. 	<ul style="list-style-type: none"> • Observe closely, using simple equipment. • Perform simple tests. • Identify and classify. 	<ul style="list-style-type: none"> • Make systematic and careful observations, using simple equipment. • Begin to explore using a range of simple equipment to take such measurements e.g., thermometers and data loggers • Use standard units when taking measurements where appropriate. 	<ul style="list-style-type: none"> • Make systematic and careful observations using a range of equipment, including thermometers and data loggers. • Take accurate measurements using standard units, where appropriate. 	<ul style="list-style-type: none"> • Continue to explore using a range of scientific equipment to take measurements, working with increasing accuracy and precision. • Begin to understand the need for, and to take repeat readings of measurements. 	<ul style="list-style-type: none"> • Use a range of scientific equipment to take measurements. • Take measurements with increasing accuracy and precision. • Take repeat readings when appropriate.
<p style="text-align: center;">Record (Taking and Recording Observations, Measurements and Results)</p>	<ul style="list-style-type: none"> • Show their work using pictures, labels and captions • Use simple equipment to help them make observations 	<ul style="list-style-type: none"> • Gather and record data to help in answering questions in a variety of ways. • With modelling and scaffolding as appropriate, begin to use simple scientific language in their recording. 	<ul style="list-style-type: none"> • Record and communicate their findings in a range of ways and begin to use simple scientific language. • Gather and record data to help answer questions. 	<ul style="list-style-type: none"> • With modelling & guidance, gather, record, classify & present data in a variety of ways to help to answer questions. • Use various ways of recording, grouping & displaying evidence • suggest how findings may be tabulated. 	<ul style="list-style-type: none"> • Gather, record, classify & present data in a variety of ways to help to answer questions. • Record findings using simple scientific language, drawings and labelled diagrams, keys, bar charts, and tables. 	<ul style="list-style-type: none"> • With modelling and guidance, record data and results. • Record data using labelled diagrams, keys, tables and charts. • Begin to use line graphs to record data. 	<ul style="list-style-type: none"> • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar charts and line graphs.
<p style="text-align: center;">Review</p>	<ul style="list-style-type: none"> • Describe / explain what they have done • Explain what they have found out • Answer some scientific questions • Give a simple reason for their answer 	<ul style="list-style-type: none"> • Use their observations and own ideas to suggest answers to questions 	<ul style="list-style-type: none"> • Use their observations and ideas and developing scientific knowledge to suggest answers to questions. 	<ul style="list-style-type: none"> • Begin to separate results and conclusions and with support, report on their enquiry in relation to the question asked • With modelling and support, use results to make simple conclusions, suggest improvements & raise further questions. • Report their findings in a variety of ways 	<ul style="list-style-type: none"> • Report on their findings, results and conclusions in different ways including oral & written explanations, displays and presentations. • Identify differences, similarities or changes related to simple scientific ideas & processes. • Use straightforward scientific evidence to answer questions or to support their findings. • Use results to draw simple conclusions, make predictions for new values, 	<ul style="list-style-type: none"> • Report and present findings from enquiries, including conclusions and, with support, suggest causal relationships. • Continue to develop ways in which to present findings from enquiries, both orally and in writing, • Suggest further comparative or fair tests and introduce the concept of 'trust' in results. 	<ul style="list-style-type: none"> • Report and present findings from enquiries, including conclusions and causal relationships. • Report & present findings from enquiries in oral and written forms such as displays and other types of presentation. • Report and present findings from enquiries, including explanations of, & degree of, trust in results. • Identify scientific evidence that has been used to

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					suggest improvements & raise further questions.		support or refute ideas or arguments. • Use test results to make predictions to set up further comparative and fair tests.
Vocabulary (related to scientific enquiry)	Build up vocabulary that reflects the breadth of their experience Working scientifically - experiment, test, fair, senses. observe	Questions, answers, equipment, gather, measure, record, results, sort (classify), group, test, explore, observe, compare, describe, similar/ties, different/ces	Previous vocab plus observe changes over time, notice patterns, secondary sources, identify, classify, data	Previous vocabulary plus changes over time, patterns, secondary sources, comparative tests, fair tests, accurate observations, equipment, gather, measure, record, data, evidence, results, keys, bar charts, table, results, conclusions, predictions,	Previous vocab plus enquiry types increase, decrease, identify, classify, order, notice patterns, relationships, appearance, present results, data loggers	Previous vocab plus, notice patterns, relationships, independent variable, dependent variable, controlled variable, accuracy, precision, classification keys, scatter graphs, line graphs, causal relationships, support/refute, data loggers	Previous vocab plus opinion/fact, confidently name scientific enquiry types



	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	<ul style="list-style-type: none"> Plant seeds and care for growing plants Understand the key features of the life cycle Observe and draw pictures of things that grow Developing an understanding of growth, decay and changes over time Identify similarities 	<ul style="list-style-type: none"> Identify & describe the basic structure of a variety of common flowering plants, inc trees. Identify and name a variety of common wild and garden plants, including deciduous & evergreen trees 	<ul style="list-style-type: none"> Observe and describe how seeds & bulbs grow into mature plants Find out & describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<ul style="list-style-type: none"> Identify & describe the functions of different parts of flowering plants: roots, stem/trunk, leaves & flowers Explore the requirements of plants for life & growth (air, light, water, nutrients from soil, & room to grow) & 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, 			

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	and differences in relation to living things			including pollination, seed formation & seed dispersal.			
Vocabulary related to Plants	plants – leaf, stem/stalk, root, flower, seed, soil, fruit, growth, decay, environment	Roots, stem, leaves, flowers, petals, trunk, branch, fruit, seeds, bulb, wild plants, garden plants, weeds, deciduous, evergreen	Germination, sprout, shoot, (seed dispersal), 'flowering' plants, life cycle, sunlight, water, temperature, nutrition, absorb, air (oxygen / carbon dioxide)	Nutrients, evaporation, transports, fertilisation, stamen – anther, filament, sepal, ovule, carpel – stigma, style, ovary, pollination, pollinator, seed dispersal, seed formation			
Animals, including humans	<ul style="list-style-type: none"> Identify similarities and differences between animals Observe and draw pictures of animals Begin to understand the need to respect and care for the natural environment and all living things Identify similarities and differences in features of their own immediate environment 	<ul style="list-style-type: none"> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify & name a variety of common animals that are carnivores, herbivores & omnivores Describe & compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) Identify, name, draw & label the basic parts of the human body & say which part of the body is associated with each sense. 	<ul style="list-style-type: none"> Find out about & 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, & hygiene. Notice that animals, including humans, have offspring which grow into adults 	<ul style="list-style-type: none"> Identify that animals, including humans, need the right types & amount of nutrition, & that they cannot make their own food; they get nutrition from what they eat Identify that humans & some other animals have skeletons & muscles for support, protection and movement. 	<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. 	<ul style="list-style-type: none"> Describe the changes as humans develop to old age 	<ul style="list-style-type: none"> Identify & name the main parts of the human circulatory system, & describe the functions of the heart, blood vessels & blood Recognise the impact of diet, exercise, drugs & lifestyle on the way their bodies function Describe the ways in which nutrients & water are transported within animals, including humans.
Vocabulary related to Animals, including humans	animals, - humans, insects, birds, fish, fur, feather, scales, horns,	Amphibians, birds, fish, mammals, reptile, carnivore, herbivore, omnivore, senses – sight, hearing, smell, touch, taste, parts of the body	Adult, develop, life cycle, offspring, dehydrate, diet, disease, energy, exercise, health, hygiene, vitamins, calories, exercise, germs,	Nutrients, balanced diet, saturated / non-saturated fats, carbohydrates, protein, fibre, vitamins, minerals, vertebrate, invertebrate, muscles, tendons,	Digest, digestive system oesophagus, stomach, small intestine, large intestine, rectum. Tooth decay, Canine, incisor, premolar, producer,	Fertilisation, prenatal, gestation, reproduce, asexual reproduction, sexual reproduction, life cycle, adolescence, puberty,	Circulatory system, heart, blood vessels, oxygenated blood, deoxygenated blood, drug, alcohol, nutrients,

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				joints, endo / exo / hydrostatic skeleton, contract, relax, backbone / spine, ribs, skull, protect, organs – heart, lungs, brain,	predator, prey, food chain,	menstruation, adulthood, life expectancy,	
Materials	<ul style="list-style-type: none"> Identify and name everyday materials Explore and talk about changing state 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 			<ul style="list-style-type: none"> compare & group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical & thermal), & response to magnets. know that some materials will dissolve in liquid to form a solution, & 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. Demonstrate that dissolving, mixing and changes of state are reversible changes. Give reasons, based on evidence from comparative & fair tests, for the particular uses of everyday materials, 	

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						<p>including metals, wood and plastic.</p> <ul style="list-style-type: none"> • 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. 	
Vocabulary related to Materials	<p>everyday materials – wood, metal, plastic, glass , waterproof, natural, change,</p>	<p>Material, wood, metal, glass, plastic, waterproof, bendy, rigid, shiny, hard, soft, stretchy, dull, rough, absorbent, transparent, opaque,</p>	<p>Suitability, properties, flexible, lightweight, stiff, hard-wearing, strong, easy to wash, bend, twist, stretch, squash,</p>			<p>Solids, liquid, gases, melting, freezing, evaporating, condensing, electrical / thermal conductivity, flexibility, hardness, insulators, magnetism, transparency, solubility, changes of state, reversible and irreversible changes, sieving, filtering, particles, dissolving, reactants,</p>	
Seasonal changes	<ul style="list-style-type: none"> • Children know about similarities and differences in relation to places, objects, materials and living things. (ELG 14) • Make observations of animals and plants and explain why some things occur and talk about changes. (ELG14) 	<ul style="list-style-type: none"> • Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies. 					

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<p>Vocabulary related to Seasonal Changes</p>		<p>Weather, seasons, climate, shadows, temperature, elements, rainfall gauge, rainfall, precipitation, thermometer,</p> <p>polar, cold, temperate, dry and tropical,</p>					
<p>Living things and their habitats</p>	<ul style="list-style-type: none"> • Children know about similarities and differences in relation to places, objects, materials and living things. (ELG 14) • Talk about the features of their own immediate environment and how environments might vary from one another (ELG14) • Make observations of animals and plants and explain why some things occur and talk about changes. (ELG14) 		<ul style="list-style-type: none"> • Explore & compare the differences between things that are living, dead, & things that have never been alive • Identify that most living things live in habitats to which they are suited & describe how different habitats provide for the basic needs of different kinds of animals & plants, & how they depend on each other • Identify & name a variety of plants & animals in their habitats, including microhabitats • Describe how animals obtain their food from plants & other animals, using the idea of a simple food chain, & identify & name different sources of food. 		<ul style="list-style-type: none"> • Recognise that living things can be grouped in a variety of ways • Explore & use classification keys to help group, identify & name a variety of living things in their local & wider environment • Recognise that environments can change & that this can sometimes pose dangers to living things. 	<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. 	<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 microorganisms, plants and animals. • Give reasons for classifying plants and animals based on specific characteristics.
<p>Vocabulary related to Living Things</p>			<p>Life processes, living, dead, never living, food chains, food sources, habitat, microhabitat, depend, survive</p>		<p>Classification, vertebrates, invertebrates, specimen, characteristics, organisms, life processes, respiration,</p>	<p>Asexual reproduction, fertilise, gestation, life cycle, metamorphosis, pollination, reproduction, sexual reproduction</p>	<p>Characteristics, classify, taxonomist, key, bacteria, microorganism, microscope, species,</p>

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and their Habitats					sensitivity, reproduction, excretion, nutrition, habitat, environment, endangered species, extinct		
Rocks				<ul style="list-style-type: none"> • 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 			
Vocabulary related to Rocks				Igneous rock, sedimentary rock, metamorphic rock, magma, lava, sediment, permeable, impermeable, durable, high density / dense, fossilisation, Palaeontology, soil, erosion, organic matter, minerals,			
Light				<ul style="list-style-type: none"> • 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 			<ul style="list-style-type: none"> • 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

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				<p>blocked by a solid object</p> <ul style="list-style-type: none"> Find patterns in the way that the size of shadows change. 			<p>objects and then to our eyes.</p> <ul style="list-style-type: none"> Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Vocabulary related to Light				<p>Light, light source, dark, reflection, reflect, reflective, ray, pupil, retina, opaque, translucent, transparent, shadow,</p>			<p>Incident ray, the law of reflection, refraction, visible spectrum, prism, shadow, transparent, translucent, opaque, prism</p>
Forces and magnets				<ul style="list-style-type: none"> 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 & attract some materials & not others Compare & group together a variety of everyday materials on the basis of whether they are attracted to a magnet, & 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. 			<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.

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Vocabulary related to Magnets				Forces, friction, surface, push, pull, magnet, magnetic, non-magnetic, magnetic field, poles, repel, attract,		Gravity, Earth's gravitational pull, action and reaction force, air and water resistance, friction, mass, weight, mechanisms – levers, pulleys, gears, buoyancy, viscosity, streamlining, Newton metre,	
States of matter					<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 or research the temperature at which this happens in degrees Celsius (°C) • Identify the part played by evaporation and condensation in the water cycle & associate the rate of evaporation with temperature. 		
Vocabulary related to States of Matter					Changes of state, freezing, melting, temperature, condensation, evaporation, solid, liquid, gas, particles, water cycle, water vapour, melting point, precipitation,		
Sound					<ul style="list-style-type: none"> • Identify how sounds are made, associating some of them with something vibrating 		

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					<ul style="list-style-type: none"> • Recognise that vibrations from sounds travel through a medium to the ear • Find patterns between the pitch of a sound & features of the object that produced it • Find patterns between the volume of a sound & the strength of the vibrations that produced it • Recognise that sounds get fainter as the distance from the sound source increases. 	
Vocabulary related to Sound					Vibration, sound wave, volume, amplitude, pitch, ear, particles, distance, soundproof, absorb sound, vacuum, ear drum.	
Electricity					<ul style="list-style-type: none"> • Identify common appliances that run on electricity • Construct a simple series electrical circuit, identifying & naming its basic parts, including cells, wires, bulbs, switches & 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 & closes a circuit and 	<ul style="list-style-type: none"> • 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.

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					<p>associate this with whether or not a lamp lights in a simple series circuit</p> <ul style="list-style-type: none"> Recognise some common conductors and insulators, & associate metals with being good conductors 	
Vocabulary related to Electricity					<p>Electricity, generate, renewable, appliance, battery, lightning, static electricity, appliances, circuit, mains electricity, battery electricity, conductor, insulator,</p>	<p>Circuit, symbol, cell, battery, current, amps, voltage, resistance, electrons, series circuit,</p>
Earth and space					<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 & Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night & the apparent movement of the sun across the sky. 	
Vocabulary related to Earth and Space					<p>Sun, star, moon, planet, sphere, spherical bodies. Satellite, orbit, rotate, axis, geocentric model, heliocentric model, astronomer,</p>	



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<p>Evolution and inheritance</p>							<ul style="list-style-type: none"> • Recognise that living things have changed over time & 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 & are not identical to their parents. • Identify how animals & plants are adapted to suit their environment in different ways & that adaptation may lead to evolution.
<p>Vocabulary related to Evolution and Inheritance</p>							<p>Offspring, inheritance, variations, characteristics, adaptation, habitat, environment, natural selection, fossil, adaptive traits, inherited traits,</p>