Curriculum Plan

Science

'Spirituality is the bitter-sweet yearning for beauty, truth, love and wonder beyond ourselves. It is a longing we pursue together and a treasure we glimpse in ourselves and one another and seek beyond us into eternity. It is life in all its fullness.'

Nebula Spirituality Statement







EYFS Statutory Programme		Statutory National Curriculum			
EYFS	Key Stage One	Lower Key Stage Two	Upper Key Stage 2		
EYFS	Year 1	Year 3	Year 5		
Understanding the WorldThe Natural World ELG	Plants Y1Animals, including Humans Y1	Plants Y3Animals, Including Humans Y3	Living Things and Their Habitats Y5Animals, including Humans Y5		
	Everyday Materials Y1	Rocks Y3	Properties and Changes in Materials Y5		
	Seasonal Changes Y1	Light Y3Forces and Magnets Y3	Earth and Space Y5Forces Y5		
	Year 2				
	Plants Y2	Year 4	Year 6		
	Animals, including Humans Y2	Animals, Including Humans Y4	Living Things and Their Habitats Y6		
	 Living Things and Their Habitats Y2 	 Living Things and Their Habitats Y4 	 Animals, including Humans Y6 		
	 Uses of Everyday Materials Y2 	Sound Y4	• Light Y6		
		Electricity Y4	Electricity Y6		
	Year 1 and 2 Working Scientifically – Covered in the skills map	States of Matter Y4	Evolution and Inheritance Y6		
		Year 3 and 4 Working Scientifically -	Year 5 and 6 Working scientifically –		
		Covered in skills map	Covered in skills map		



Class One	Class Two	Class 3
Reception and Year 1	Year 2 and 3	Year 4, 5 and 6
(1 Year Plan)	(2 Year Plan)	(3 Year Plan)
Understanding the World EYFS	Plants Y2	Living Things and Their Habitats Y4
The Natural World EYFS ELG	Animals, including Humans Y2	Animals, Including Humans Y4
Disaste V4	 Living Things and Their Habitats Y2 	States of Matter Y4
Plants Y1	 Uses of Everyday Materials Y2 	Sound Y4
Animals, including Humans Y1		Electricity Y4
Everyday Materials Y1	Plants Y3	
Seasonal Changes Y1	Animals, Including Humans Y3	 Living Things and Their Habitats Y5
ear 1 and 2 Working Scientifically – skills map	Rocks Y3	Animals, including Humans Y5
ear 1 and 2 Working Scientifically – Skills Map	• Light Y3	 Properties and Changes in Materials Y5
	 Forces and Magnets Y3 	Earth and Space Y5
		Forces Y5
	Year 1 and 2 Working Scientifically - skills map	
	Year 3 and 4 Working Scientifically - skills map	 Living Things and Their Habitats Y6
		Animals, including Humans Y6
		Evolution and Inheritance Y6
		Light Y6
		Electricity Y6
		Year 3 and 4 Working Scientifically - skills map
		Year 5 and 6 Working scientifically - skills map



Class 1 (Reception and Year 1)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS Understanding the World	observations and drawing plants; • Know some similarities natural world around the environments, drawing has been read in class; • Understand some import the natural world around and changing states of the Name and describe pectors. • Talk about members of community.	on their experiences and what rtant processes and changes in ad them, including the seasons	observations and draplants; • Know some similarit the natural world are environments, draw what has been read • Understand some im changes in the naturincluding the season matter.	world around them, making awing pictures of animals and lies and differences between ound them and contrasting ing on their experiences and in class; apportant processes and lal world around them, is and changing states of see, hear and feel whilst	natural world around the environments, drawing o has been read in class; Understand some import the natural world around and changing states of material world.	g pictures of animals and and differences between the am and contrasting in their experiences and what cant processes and changes in them, including the seasons
Year A 2024-2025	Animals including humans (humans) identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Seasonal changes (Autumn and Winter) observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies.	Animals including humans (animals) 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)	Plants (growing fruit) 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.	Everyday Materials (Adventures of an eggbox dragon) 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.	Seasonal changes (Spring and Summer) observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies.



EYFS Understanding the World	observations and draplants; • Know some similarit the natural world are environments, draw what has been read • Understand some in changes in the natur including the season matter.	world around them, making awing pictures of animals and lies and differences between bound them and contrasting ling on their experiences and lin class; apportant processes and lal world around them, is and changing states of liee, hear and feel whilst	observations and draplants; • Know some similarit the natural world are environments, draw what has been read • Understand some important changes in the nature including the season matter.	world around them, making awing pictures of animals and lies and differences between ound them and contrasting ing on their experiences and in class; apportant processes and lal world around them, is and changing states of see, hear and feel whilst	observations and draplants; • Know some similarit the natural world are environments, draw what has been read • Understand some in changes in the natur including the season matter.	world around them, making awing pictures of animals and lies and differences between bund them and contrasting ing on their experiences and in class; apportant processes and all world around them, is and changing states of see, hear and feel whilst
Year B 2025-2026	Everyday Materials (Outer space) 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.	Seasonal changes (Autumn) observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies.	Animals including humans (animals – Snail and the Whale) 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.	Seasonal changes (Winter) observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies	Plants - (sunflowers and pumpkins) 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.	Seasonal changes (Spring and Summer) observe changes across the four seasons observe and describe weather associated with the seasons and how day length varies.



Year 1: Working	During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study
Scientifically	content:
(Skills Map)	 asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment performing simple tests identifying and classifying using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions.
EYFS ELG: The Natural World (Skills Map)	 Children at the expected level of development will: 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.

Class 2 (Year 2 and 3)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year A 2024/25	Uses of Everyday Materials (Y2) identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	Uses of Everyday Materials (Y2) • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	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.	Light (Y3) 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 changes	Plants (Y2) 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.	Plants (Y3) 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 (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.



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Animals including Humans (Y2)

- 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 amounts of different types of food, and hygiene.

Animals including Humans (Y3)

- identify that humans and some other animals have skeletons and muscles for support, protection and movement.
 - identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat

Living Things and their Habitats (Y2)

- explore and compare the differences between things that are living, dead, and things that have never been alive
- 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.

Living Things and their Habitats (Y2)

- identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- identify and name a
 variety of plants and
 animals in their habitats,
 including micro-habitats

Forces and Magnets (Y3)

- compare how things move on different surfaces (gravity and friction)
- notice that some forces need contact between two objects (push and pull) but magnetic forces can act at a distance

Forces and Magnets (Y3)

- observe how magnets attract or repel each other and attract some materials and not others
- compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- describe magnets as having two poles
- predict whether two magnets will attract or repel each other, depending on which poles are facing.

Year 2: Working Scientifically (Skills Map)

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions.

Year 3: Working Scientifically (Skills Map)

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings.





Class 3 (Year 4, 5 and 6)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year A 2025/26	Sound (Y4) recognise that vibrations from sounds travel through a medium to the ear 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. identify how sounds are made, associating some of them with something vibrating find patterns between the pitch of a sound and features of the object that produced it Inquiry: Make earmuffs, soundproofing and instruments for their Anderson shelter	Properties and changes of materials (Y5) part A 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 give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic Inquiry: building an Anderson shelter	Animals including Humans (Y4) construct and interpret a variety of food chains, identifying producers, predators and prey identify the different types of teeth in humans and their simple functions describe the simple functions of the basic parts of the digestive system in humans Inquiry: Food chains in the Mayan jungles	Living things and their habitats (Y6) describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms give reasons for classifying micro-organisms based on specific characteristics. describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including plants and animals give reasons for classifying plants and animals based on specific characteristics. Inquiry: design a zoo for animals across the Americas (trip to Amazona zoo)	Light (Y6) 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 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 Inquiry: periscopes and magnifying glasses	Properties and changes of materials (Y5) part B • 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 • 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 Inquiry: kitchen mix-ups
Year B 2026/27	States of Matter (Y4) compare and group materials together, according to whether	Forces (Y5) part A • explain that unsupported objects fall towards the Earth because of the force of gravity acting	relative to the Sun in the se	the Earth, and other planets, olar system the Moon relative to the Earth	Animals, including humans (Y6) identify and name the main parts of the human circulatory system, and describe the functions of	Electricity (Y6) associate the brightness of a lamp or the volume of a buzzer with the



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	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 Links to Geography and the water cycle and raising awareness for WaterAid	between the Earth and the falling object • identify the effects of air resistance and water resistance, that act between moving surfaces Inquiry: make a Viking longship with sails, buoyancy and hydrodynamics		rotation to explain day and evement of the sun across the	the heart, blood vessels and blood describe the ways in which nutrients and water are transported within animals, including humans. recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Links to mummification	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 Inquiry: make a mummification buzzer game in the style of Operation
Year C 2027/28	Living Things and their Habitats (Y4) recognise that living things can be grouped in a variety of ways explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment recognise that environments can change and that this can sometimes pose dangers to living things. Inquiry: classify and identify wildlife in a local woods and protect it from deforestation	Animals, including humans (Y5) describe the changes as humans develop to old age Link to RSE expectations	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	• identify the effects of friction and air resistance, that act between moving surfaces • recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect Inquiry: make their car with mechanisms, aerodynamics and friction on tyres	Living things and their habitats (Y5) 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. Inquiry: help the reproduction of wildlife (birds, butterflies, bees, frogs, flowers, potatoes, hedgehogs)	Evolution and inheritance (Y6) 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



		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 Inquiry: make a circuit for an electric car			adaptation may lead to evolution. Links: evidence of human evolution at the Time and Tide Museum
Year 4: Working Scientifically (Skills Map)	During years 3 and 4, pupils should be taught to use content: asking relevant questions and using different ty setting up simple practical enquiries, comparat making systematic and careful observations and thermometers and data loggers gathering, recording, classifying and presenting recording findings using simple scientific languate reporting on findings from enquiries, including using results to draw simple conclusions, make identifying differences, similarities or changes reusing straightforward scientific evidence to ans	rpes of scientific enquiries to ans ive and fair tests d, where appropriate, taking according data in a variety of ways to help age, drawings, labelled diagrams, oral and written explanations, di predictions for new values, sugg elated to simple scientific ideas	wer them urate measurements using st in answering questions , keys, bar charts, and tables isplays or presentations of res gest improvements and raise tand processes	andard units, using a range of sults and conclusions	
Year 5 and 6: Working Scientifically (Skills Map)	During years 5 and 6, pupils should be taught to use content: • planning different types of scientific enquiries to taking measurements, using a range of scientific recording data and results of increasing complete using test results to make predictions to set up reporting and presenting findings from enquiries forms such as displays and other presentations identifying scientific evidence that has been use	o answer questions, including re c equipment, with increasing acc exity using scientific diagrams and further comparative and fair tes es, including conclusions, causal	ecognising and controlling var curacy and precision, taking re d labels, classification keys, ta ts relationships and explanation	ables where necessary epeat readings when appropribles, scatter graphs, bar and I	ate ine graphs



Reception, Year 1	Year 2, 3 and 4	Year 5 and 6
The Natural World EYFS ELG Plants Y1 Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, Names of trees in local area, Names of garden and wild lowering plants in local area Animals, including Humans Y1 Head, body, eyes, ears, mouth, teeth, leg, tail, ving, claw, fin, scales, feathers, fur, beak, paws, noves, Names of animals experienced first-hand from each vertebrate group, Parts of the body including those linked to PSHE teaching Senses – touch, see, smell, taste, hear, fingers skin), eyes, nose, ear and tongue Everyday Materials Y1 Diject, material, wood, plastic, glass, metal, vater, rock, brick, paper, fabric, elastic, foil, vaterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through Deasonal Changes Y1 Weather (sunny, rainy, windy, snowy etc) Deasons (winter, summer, spring, autumn)	Plants Y2 As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy Animals, including Humans Y2 Offspring, reproduction, growth, child, young/old, (e.g. chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (e.g. meat, fish, vegetables, bread, rice, pasta) Living Things and Their Habitats Y2 Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, Names of local habitats e.g. pond, woodland, Names of micro-habitats e.g under logs, in bushes Uses of Everyday Materials Y2 Names of materials – as for year 1 plus new examples that are used first-hand Properties of materials – as for year 1 plus opaque, transparent, translucent, reflective, non-reflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching	Living Things and Their Habitats Y5 Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings Animals, including Humans Y5 Puberty – the vocabulary to describe sexual characteristics linked to PSHE teaching. Properties and Changes in Materials Y5 Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material Earth and Space Y5 Earth, Sun, Moon, Mercury, Jupiter, Saturn, Mars, Uranus, Neptune, spherical, solar system, rotates star, orbit, planets Forces Y5 Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears Living Things and Their Habitats Y6



Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal)

Animals, Including Humans Y3

Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine

Rocks Y3

Rock, stone, pebble, boulder, grain, crystals, layer, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil

Light Y3

Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous

Forces and Magnets Y3

Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole

Living Things and Their Habitats Y4

Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate

Animals, Including Humans Y4

Animals, including Humans Y6

Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle

Evolution and Inheritance Y6

Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils

Light Y6

As for year 3 -Light, plus straight lines, light rays

Electricity Y6

Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage (use volts/voltage to describe different batteries – do not need to understand what voltage is)



Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain

States of Matter Y4

Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle

Sound Y4

Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation

Electricity Y4

Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol

Standard symbols for electrical components are taught in Y6.