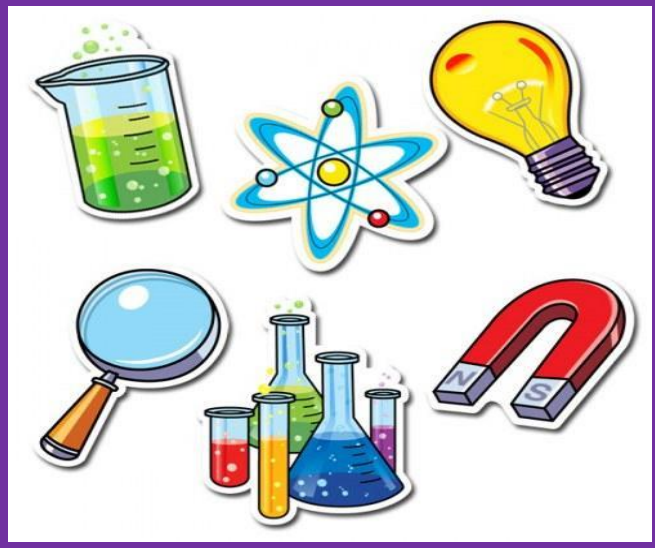
Curriculum Skills and Progression
Science: 2025 to 2026



The Science Curriculum and Christian Distinctiveness at

Horsford CofE VA Primary School

At Horsford Primary School, we encourage our children to embrace our Christian Distinctiveness and school's Key Values: compassion, courage and responsibility. Our rich and varied Science curriculum encourages pupils to explore, challenge and wonder at the world around them. At our school, children are given varied opportunities to observe closely and have the courage to question the world around them. We instil a school ethos whereby our children have the courage to embrace challenge and risk to deepen their scientific knowledge. Our school community fosters caring for each other whilst engaging with challenging ideas, listening to the views of others and sharing our own in a safe, respectful and supportive environment. Children will gain a sense of responsibility towards caring for our planet through the exploration of the science behind our natural world. Whilst the discovery of new knowledge is integral within our science curriculum, we also promote an awareness that this knowledge cannot stand alone and should be used for the benefit of ourselves and others. As the good Samaritan demonstrated when he cared for not only the individual but also the communities around him.

'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
where stars are born

The Science Curriculum and Provision for Pupils with SEND

At Horsford C of E VA Primary school, we believe all pupils should have the opportunity to learn to the best of their capabilities through a broad and balanced, inclusive curriculum. For our pupils with a Special Educational Need, we scaffold their learning to provide them with the strongest opportunities for success in our school. We believe firmly in the SEND Code of Practice's statement that 'every teacher is a teacher of SEN' and that our pupils with SEN should be provided with the same opportunities as their peers in our school. This means that, with their learning being personalised to meet their areas of need, they feel included in the classroom and make progress year on year. Reasonable adjustments are made in all lessons to enable this.

The Science curriculum can be adapted to meet the needs of children with SEND in the following ways.

Word Banks for pre-learning and to support during topics and themes	Writing frames and scaffolding
Print out portions of work and learning objectives to minimise writing	Close to adult support where possible and appropriate.
Breaking down lessons into short, manageable chunks	Visual and Picture aids
Mixed ability groups – using peers as support and role models	Allow talk time for those who find recording difficult
Using another student as a reader/support	Keeping instructions short and one at a time
Draw answers or explanations	Equipment adapted for needs (books, scissors, pencils, whiteboard)
Use of a scribe where appropriate	Recording devices to record their answers/sentences – talking tins, iPad

When planning for Science class teachers should adapt their lessons where necessary using ideas taken from this list, however it is important to remember this list is not exhaustive and other adaptations may be needed for children with specific needs.

Science- EYFS

Understanding the World

EYFS Statutory Educational Programme: Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension.

Natural World ELG

- 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.

Vocabulary

Animals
Changes
Describe
Different
Environment
Investigate
Observation
Plants
Seasons
Senses
Similar
Sort
Test

Enquiry

Science is covered throughout the year through weekly themes taken from the interests of the children. A weekly hook sheet is published and scientific work can be identified on it. Weekly enhanced provision is planned to ensure the children have the opportunity to explore science skills independently throughout the week.

Early Years – Working Scientifically

Reception Statements

- Explore the natural world around them.
- Describe what they see, hear and feel whilst outside.
- Recognise some environments that are different to the one in which they live.
- Understand the effect of changing seasons on the natural world around them.

Observing closely	Performing Tests	Identifying and Classifying	Recording findings
• Discuss what they can see, touch, smell, hear or taste? • Use simple equipment to help them make observations. • Talk about changes with the seasons.	• Perform a simple test? • Describe/ explain what they have done?	• Identify and classify things they observe? • Think of some questions to ask? • Answer some scientific questions? • Give a simple reason for their answer? • Explain what they have found out? • Talk about how environments are different and similar	• Show their work using pictures, labels and captions? • Record their findings. • Record some information in a chart or table, or using ICT

Early Years Greater Depth

• Can they find out by watching, listening, tasting, smelling and touching? • Can they give reasons for their answers?	• Can they give reasons for their answers?	• Can they discuss similarities and differences? • Can they explain what they have found out using scientific vocabulary? • Can they give reasons for their answers?	• Can they compare measurements? • Can they give reasons for their answers?

Substantive knowledge progression Year 1-6

Animals including humans

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
-Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. -Identify and name a variety of common animals that are carnivores, herbivores and omnivores. -Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). -Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	- Notice that animals, including humans, have offspring which grow into adults. -Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). -Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	-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. -Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	-Describe the simple functions of the basic parts of the digestive system in humans -Identify the different types of teeth in humans and their simple function. -Construct and interpret a variety of food chains, identifying producers, predators and prey.	- Describe the changes as humans develop to old age.	-Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. -Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. - Describe the ways in which nutrients and water are transported within animals, including humans.
Autumn (Wk 1-6) **Spring (Wk 2-7)**	**Autumn (Wk 1-6)**	**Autumn (Wk 1-9)**	**Summer (Wk 6- Wk 12)**	**Spring (Wk7 – Wk10)**	**Autumn (Wk 13-15)** **Spring (Wk 1 – 3)**

Living things and their habitats

Year 2	Year 4	Year 5	Year 6
-Explore and compare the differences between things that are living, dead, and things that have never been alive. -Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. -Identify and name a variety of plants and animals in their habitats, including microhabitats	-Recognise that living things can be grouped in a variety of ways. - Explore and use classification keys to 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.	-Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. -Describe the life process of reproduction in some plants and animals	-Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. -Give reasons for classifying plants and animals based on specific characteristics
Spring (Wk 5-9)	**Autumn (Wk 1-6)** **Spring (Wk 6)** **Summer (Wk 1-2)**	**Summer (Wk 1-6) (Wk 13)**	**Spring (Wk 1-5)**

Plants

Year 1	Year 2	Year 3
-Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. -Identify and describe the basic structure of a variety of common flowering plants, including trees.	-Observe and describe how seeds and bulbs grow into mature plants. -Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	-Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers -Explore the requirements of plants for life and growth (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.
Spring (Wk 1 and Wk 11) **Summer (Wk 1-Wk 5)**	**Spring (Wk 1-3 and Wk 11)** **Summer (Wk 1-2 and Wk 9)**	**Summer (Wk 1-5 and Wk 12)**

Materials

Year 1

-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

Autumn (Wk 9-13)

Year 2

-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

Autumn (Wk 9-13)

Year 5

-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.

Spring (Wk 1-4)
Summer (Wk 8-11)

Electricity

Year 4

-Identify common appliances that run on electricity.
-Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
-Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.
-Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
-Recognise some common conductors and insulators, and associate metals with being good conductors.

Spring (Wk 7-10)

Year 6

-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.

Autumn (Wk 7-10)

Rocks

Year 3

-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

Autumn (Wk 12-14)
Spring term (Wk 1- 5)

States of matter

Year 4

-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.

Autumn (Wk 7-13)

Earth and Space

Year 5

-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

Autumn (Wk 8-12)

Seasonal Change

Year 1

-Observe changes across the 4 seasons.
-Observe and describe weather associated with the seasons and how day length varies.

Autumn (Wk 8 and 15)
Spring (Wk 9)
Summer (Wk 7)

Sound

Year 4

-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 source increases.
Spring (Wk 1-4)

Light

Year 3

-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

Spring (Wk 7-10)

Year 6

-Recognise that light travels 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.

Spring (Wk 5-9)

Forces and magnets

Year 3

-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.

Summer (Wk 7-10)

Year 5

-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.

Autumn (Wk 1-6)

Evolution and inheritance

Year 6

-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.

Summer term (Wk 1-11)

Disciplinary knowledge progression Year 1-6

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Ask questions	- Ask simple questions.	- **Ask simple questions and recognise that they can be answered in different ways.**	- Ask questions and understand there are different enquiry types they could use to answer them.	**- Ask relevant questions and use different types of scientific enquiry to answer them.**	- Ask scientific questions and begin to understand which questions would be best suited to each enquiry type.	- Ask relevant scientific questions and choose which enquiry type would be best suited to answer them.
Plan	Planning is not explicitly mentioned in the KS1 curriculum. However, where appropriate, children can verbally state what they will investigate, what they will change and what they will keep the same.		-Make relevant predictions. - Identify what they will change, observe and keep the same. - With support, set up simple practical enquiries.	-Make predictions based on simple scientific knowledge. -Identify what they will change, observe or measure and keep the same. -**Set up simple practical enquiries, comparative and fair tests.**	-Make predictions based on scientific knowledge. -With support, plan different types of scientific enquiry. Where appropriate, identify the dependent, independent and controlled variables.	-Make predictions based on scientific knowledge. -**Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.**
Make observations	- Observe closely.	- **Observe closely, using simple equipment.**	- Make careful observations using scientific equipment.	- **Make systematic and careful observations** using scientific equipment.	- Use a range of scientific equipment to make systematic and careful observations.	- Use a range of scientific equipment to make systematic and careful observations with increased complexity.
Take measurements	-Carry out simple tests using non-standard measurements when appropriate	- **Perform simple tests** using standard units when appropriate.	- Perform tests and simple experiments and taking measurements using standard units.	**-Take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.**	- Take accurate measurements using a range of scientific equipment. Start to take repeat readings when appropriate.	**-Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.**
Gather, record and classify data	-Gather and record simple data. -Sort objects and living things into	-**Gather and record data to help in answering questions.**	-Recording findings using simple scientific language, drawings, labelled diagrams,	-**Gather, record and classify data in a variety of ways to**	-Record data using scientific diagrams and labels, classification keys,	**-Record data and results of increasing complexity using scientific diagrams**

	groups based on simple properties.	**-Identifying and classifying.**	bar charts, and tables.	**help in answering questions.** **-Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.**	tables, bar and line graphs.	**and labels, classification keys, tables, scatter graphs, bar and line graphs.**
Present findings	-Explain what they found out to an adult or a partner.	-**Talk about what they have found out and how they found it out. (non-statutory).**	-Report on findings from enquiries, including oral and written explanations.	-**Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.**	-Report and present findings from enquiries, including conclusions. -Begin to identify causal relationships in oral and written forms such as displays and other presentations.	- **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.**
Answer questions and make conclusions	-Answer simple questions.	- **Use their observations and ideas to suggest answers to questions.**	-Make simple conclusions. -Use results, findings or observations to answer questions	-**Use straight-forward scientific evidence to answer questions or to support their findings.** **-Use results to draw simple conclusions.** **- Begin to identify differences, similarities or changes related to simple ideas or processes.**	-Use scientific evidence to answer questions. -Make conclusions based on scientific evidence and from their own testing and findings.	- Make conclusions based on scientific evidence and from their own testing and findings. -**Identify scientific evidence that has been used to support or refute ideas or arguments.**
Evaluate	Evaluating is not explicitly mentioned in the KS1 curriculum.		- Suggest questions for further investigation.	- U**se results to draw simple conclusions, make predictions for new values, suggest improvements and**	- Continue to use results to draw simple conclusions, suggest improvements and	**• Use test results to make predictions to set up further comparative and fair tests.**

		raise further questions.	raise further questions for possible testing.	-Provide some simply examples of how to extend the investigation.

Substantive vocabulary progression Year 1 – 6

Animals including humans

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
hair, eyes, face, nose, ears, teeth, mouth, head, neck, arm, elbow, hand, leg, knee, foot light, dark, blind, hear, loud, quiet, noisy, sweet, salty, sour, bitter, savoury, skin, rough, smooth, hard, soft, smell, scent, sniff, stench animal, mammal, fur, wild mammal, pet, bird, wings, beak, feathers, webbed feet, flippers, tail, fins, scales, gills, amphibian, frog, toad, newt, reptile, lizard, crocodile, turtle, carnivore, sharp teeth, herbivore, plants, vegetable, fruit, omnivore	shelter, heart, exercise, physical health, mental health, healthy diet, unhealthy diet, meat, sugar, germs, hygiene, doctor, disease, plaque, gums, filling offspring, egg, parent, baby, child, teenager, life cycle, adolescent, frogspawn, tadpole, froglet, caterpillar, pupa, butterfly, insect, adult	skeleton, skull, ribcage, pelvis, femur, spine, antennae, exoskeleton, joint, hinge joint, ball-and socket joint, muscle, biceps, triceps, contract, relax carbohydrates, proteins, dairy products, fats, fruit and vegetables, balanced diet, balanced meal, nutrition, Eatwell Guide, vegan diet, vegetarian diet, omnivorous diet, pescatarian diet	incisors, canines, premolars, molars, enamel, root, decay, digestive system, mouth, oesophagus, stomach, small intestine, large intestine, rectum, saliva producer, consumer, prey, predator, farming, overfishing, hunting	foetus, elderly adult, milestone, womb, period, reproduce, hormone, puberty, life expectancy, gestation period, gestation	circulatory system, blood vessels, arteries, veins, capillaries, red blood cells, white blood cells, lungs, plasma, oxygen, atria, ventricles, right atrium, left atrium, right ventricle, left ventricle, oxygenated blood, deoxygenated blood calories, saturated fats, unsaturated fats, trans fats, drug, painkiller, depressant, stimulant, cigarette, tar, nicotine, vape, carbon monoxide, addiction, heart rate

Living things and their habitats

Year 2	Year 4	Year 5	Year 6
Arctic plants, hibernate, habitat, cactus, desert, rainfall, ocean, seagrass, woodland, fern, moss, microhabitat, spider, snail, diet, food chain, living, dead, never alive	vertebrate, invertebrate, soft-bodied invertebrate, flowering plant, non-flowering plant, seasonal changes, natural resources, rewilding, nature reserve	monotreme, mammary gland, metamorphosis, larva, chrysalis, hatchling, nestling, fledgling, fertilisation, embryo, sperm cells, egg cells, sexual reproduction, anther, stigma, style, filament, ovary, ovule, clone, runner, tuber, asexual reproduction, cutting, parent plant	organism, excretion, reproduction, mollusc, arachnid, classification, coniferous tree, microorganism, bacteria, virus, fungi, characteristics

Plants

Year 1	Year 2	Year 3
plant, flower, leaf, petals, stem, roots, branch, trunk, roots, wildflower, daisy, garden plant, sunflower, nettle, buttercup, dandelion, deciduous tree, horse chestnut, oak, sycamore, evergreen tree, pine, holly, needles, seed, soil, growth	sunlight, compost, herb, blossom, bulb, shoot	water transportation, seedling, seed coating, germination, stamen, pistil, pollen, reproductive organs, pollination, pollinators, wind dispersal, animal dispersal, water dispersal, explosion dispersal, seed dispersal

Materials

Year 1

material, shiny, dull, rock, heavy, light, object, wood, metal, plastic, glass, wool, solid, liquid, melt, freeze, ice, float, sink, absorb, transparent, opaque

Year 2

natural material, human-made material, recycle, flexible, rigid, stone, pebble, brick, brittle, flexible, translucent, tough, lightweight, strong, breakable, waterproof

Year 5

electrical conductor, electrical insulator, thermal insulator, properties, lifespan, dissolve, soluble, insoluble, solution, mixture, reversible changes, reverse, chemical reaction, irreversible change, burning, heating, vinegar, bicarbonate of soda

Electricity

Year 4

appliances, plug, socket, cell, electrocuted, circuit, switch, battery, buzzer, conductor, insulator

Year 6

series circuit, voltage, current, complete circuit, incomplete circuit

Rocks

Year 3

granite, pumice, sandstone, chalk, marble, gneiss, crystals, grains, layers, texture, hardness, weathering, fossil, shell, fossilisation, sediment, sandy soil, clay soil, peat soil, chalky soil, organic matter, nutrients, deforestation, habitat loss

States of matter

Year 4

solid, liquid, gas, states of matter, pouring solid, ooblek, flow, freezing, melting, boiling, condensation, evaporation, melting point, water cycle, precipitation, atmosphere, petri dish

Earth and Space

Year 5

Solar System, orbit, Sun, planets, Pluto, celestial body, gravity, heliocentric model, geocentric model, rotate, axis, North Pole, South Pole, Earth, night, day, moon, gravitational force, satellite

Seasonal Change

Year 1

autumn, daylight, night, weather, season, rainfall, rain gauge, winter, rainy, snowy, windy, cloudy, frosty, sunny, spring, summer

Sound

Year 4

vibration, sound, volume, pitch, outer ear, ear bones, cochlea, ear drum, ear canal, decibel, insulate, high-pitched, low-pitched, background noise

Light

Year 3

light sources, natural light sources, artificial light sources, Sun, sunglasses, protect, reflection, shadow

Year 6

retina, iris, pupil, lens, ray diagram, solar eclipse, refraction, medium, rainbow, prism, coloured filter, spectrum of light

Forces and magnets

Year 3

push, pull, force, contact force, friction, magnet, magnetic, poles, magnetic force, non-metal, iron, aluminium, steel, attract, repel

Year 5

frictional force, motion, air resistance, parachute, surface area, water resistance, streamlined, non-contact force, gravity, weight, lever, gear, pulley, machine

Evolution and inheritance

Year 6

variation, species, inheritance, desirable characteristics, polar habitat, desert habitat, adaptations, evolution, common ancestor, natural selection, finch, Galapagos Islands, decompose, Charles Darwin, palaeontologist, Mary Anning

Disciplinary vocabulary progression Year 1 – 6

Key Vocabulary

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
measure, observe, compare, measurement, growth, temperature, bend, squash, twist, stretch, absorb		hardness, reaction, bar chart, pictogram, data, increase, decrease, prediction, dissection, scales, filter paper, filter funnel, measuring cylinder, thermometer, conclusion, evaluation, data, volume, decibel meter, stopwatch, beaker, temperature, Petri dish, block chart, bar graph, classifying, classification key		line graph, microscope, anomaly, anomalous result, control, control beaker, sieve, filtering, repeatability, accuracy, correlation, precision, angle, periscope, line graph, scatter graph, independent variable, dependent variable, controlled variables, duration, theory	

Exposure

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
draw, label, change, same, table, record, tally, pipette, size, predict, similar, different, sort, group, identify, pattern, height, number, amount, hand lens, ruler, counting cubes, centimetres, meters, suitable, unsuitable, match, test, scientific enquiry, comparative test, research, pattern seeking		fair test, identify, group and classify, model, modelling, investigate, changed, measured, stayed the same, millimetres, millilitres, data logger, tape measure, features, scientists, diagram, sorting diagram, block diagram, distance, results		causal relationships, decimals, analyse, interpret, conclude, capacity, mass, approximate, justify, secondary source, evidence, duration, mean, calculate, method	

Sustainability vocabulary progression Year 1 – 6

Sustainability					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Earth, helpful, harmful, recycle, reuse, crops, farmer, cook	single-use plastic, wildlife, nature, local	food waste, landfill, food waste recycling, edible, inedible, biodiversity, rewilding, endangered, extinct	mains electricity, battery-powered, renewable energy, non-renewable energy, energy usage, habitat destruction, palm oil, sustainable	global warming, greenhouse gases, fossil fuels, climate change, glacier, carbon footprint, plastic pollution, pollution, microplastic	solar power, wind power, solar panels, wind turbine, migration, glare, light pollution, light trespass, skyglow, urban, rural, light emission

Year 1 LTP

Autumn term															
	Wk1 (3 days)	**Wk2**	**Wk3**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**	**Wk12**	**Wk13**	**Wk14**	**Wk15**
	Animals, including Humans (Biology)						**Consolidation/ Assessment point**	**Seasonal changes (Biology)**	**Materials (Chemistry)**					**Consolidation/ Assessment point**	**Seasonal changes (Biology)**
Substantive	-Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.						**End of unit assessment- Human Body** Revisit gaps in knowledge and skills.	-To observe and describe changes across the four seasons and how day length varies.	-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.					**End of unit assessment- Materials** Revisit gaps in knowledge and skills.	-To observe and describe changes across the four seasons and how day length varies.
Disciplinary	- Ask simple questions. -Carry out simple tests using non-standard measurements when appropriate. -Answer questions and make conclusions							-Gather and record simple data.	- Carry out simple tests using non-standard measurements when appropriate. - Observe closely. -Gather and record simple data. -Sort objects and living things into groups based on simple properties. -Answer simple questions.						-Gather and record simple data.
Enquiry	**Pattern seeking** Do the oldest children have the longest feet?							**Observation over time** What are the main changes in each season?	**Comparative** Which material would be best for a pair of curtains?						**Observation over time** What are the main changes in each season?

	Spring Term										
	Wk1 (4 days)	**Wk2**	**Wk3**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk 8**	**Wk9**	**Wk10**	**Wk11**
	Planting (Biology)	**Animals, including Humans (Biology)**						**Consolidation/ Assessment point**	**Caring for the planet (Sustainability)**	**Seasonal changes (Biology)**	**Planting (Biology)**
Substantive	-Identify and describe the basic structure of a variety of common flowering plants, including trees.	-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).						**End of unit assessment- Animals including Humans** Revisit gaps in knowledge and skills.	-Everyone should look after the planet. - Some actions help the Earth. - Some actions harm the Earth. -Looking after the planet helps to care for humans, other animals and plants.	-To observe and describe changes across the four seasons and how day length varies.	-Identify and describe the basic structure of a variety of common flowering plants, including trees.
Disciplinary	- Ask simple questions.	- Ask simple questions. -Gather and record simple data. -Sort objects and living things into groups based on simple properties. -Answer simple questions.							-Explore the world around them and raise their own questions (non-statutory). -Answer simple questions.	-Gather and record simple data.	- Observe closely. - Gather and record simple data.
Enquiry	**Observation over time (revisited)** How do the things I plant change over time?	**Identifying and classifying** Are all animals the same?							**Research** How can we care for our planet?	**Observation over time** What are the main changes in each season?	**Observation over time (revisited)** How do the things I plant change over time?

	Summer Term												
	Wk1 (4 days)	**Wk2**	**Wk3**	**Wk4 (4 days)**	**Wk5**	**Wk6**	**Wk7**	**Wk 8**	**Wk9**	**Wk10**	**Wk 11**	**Wk12**	**Wk 13**
	Plants (Biology)					**Planting (Biology)**	**Seasonal changes (Biology)**	**Consolidation/ Assessment point**	**Growing and Cooking (Sustainability)**		**Consolidation- Materials**	**Consolidation- Animals including Humans**	**Consolidation- Working Scientifically**
Substantive	-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.					-Identify and describe the basic structure of a variety of common flowering plants, including trees.	-To observe and describe changes across the four seasons and how day length varies.	**End of unit assessment- Plants** **End of unit assessment- Seasonal Changes across the year** Revisit gaps in knowledge and skills.	-Some fruit and vegetables can be grown for food. -Farmers are people who grow crops to be used as food. -Fruit is the part of a flowering plant that contains seeds. -Vegetables are parts of plants that you can eat. Usually the stems, leaves and roots.		Teachers to revisit and consolidate knowledge of materials unit (Autumn wk 9-13)	Teachers to revisit and consolidate knowledge of animals including humans unit (Spring wk 2-7)	Teachers to incorporate identified gaps in knowledge where appropriate.
Disciplinary	- Observe closely. -Gather and record simple data. -Sort objects and living things into groups based on simple properties. -Answer simple questions.					- Observe closely. -Gather and record simple data.	-Gather and record simple data.		- Gather and record simple data.		Teachers to incorporate identified gaps in skills.	Teachers to incorporate identified gaps in skills.	Teachers to incorporate identified gaps in skills.
Enquiry	**Identifying and classifying** How can we sort plants into different groups?					**Observation over time (revisited)** How do the things I plant change over time?	**Observation over time** What are the main changes in each season?		**Research** Where does my food come from?		Teachers to identify possible enquiry question where appropriate.	Teachers to identify possible enquiry question where appropriate.	Teachers to identify possible enquiry question where appropriate.

Year 2 LTP

Autumn Term															
	Wk1 (3 days)	**Wk2**	**Wk3**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**	**Wk12**	**Wk13**	**Wk14**	**Wk15**
	Animals needs for survival (Biology)					**Humans (Biology)**		**Consolidation/ Assessment point**	**Materials (chemistry)**					**Consolidation/ Assessment point**	**Plastic (Sustainability)**
Substantive	-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.		End of unit assessment- **Animals needs for survival** End of unit assessment- **Humans** Revisit gaps in knowledge and skills.	- 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.					End of unit assessment- **Materials** Revisit gaps in knowledge and skills.	-Plastic can be helpful. -Plastic can be harmful for humans and other animals. -There are ways to reduce your plastic waste -Some plastic can be recycled. -Some plastic cannot be recycled.
Disciplinary	- Asking simple questions and recognising that they can be answered in different ways. - Identifying and classifying. – Using their observations and ideas to suggest answers to questions.					- Gathering and recording data to help in answering questions. - Identifying and classifying. - Observing closely, using simple equipment.			- Identifying and classifying. - Performing simple tests using standard units when appropriate. - Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (non-statutory). - Asking simple questions and recognising that they can be answered in different ways. -Observing closely, using simple equipment. - Using their observations and ideas to suggest answers to questions.						- Explore the world around them and raise their own questions (non-statutory). - Using their observations and ideas to suggest answers to questions.
Enquiry	**Identifying and classifying** How can animals be grouped based on their needs for survival?					**Pattern seeking** Do the oldest children have the most teeth?			**Comparative** Which material would be the best for an umbrella?						**Research** How is plastic helpful and harmful?

	Spring Term										
	Wk1 (4 days)	**Wk2**	**Wk3**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**
	Plants (Light and dark) (Biology)			**Living Thing and their Habitats (Biology)**					**Consolidation/ Assessment point**	**Plants (Light and dark) (Biology)**	**Consolidation/ Assessment point**
Substantive	- Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.			- Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. - Identify and name a variety of plants and animals in their habitats, including microhabitats. -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. -Explore and compare the differences between things that are living, dead, and things that have never been alive.					End of unit assessment- **Living things and their habitats** Revisit gaps in knowledge and skills.	- Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	End of unit assessment- **Plants** Revisit gaps in knowledge and skills.
Disciplinary	- Observing closely, using simple equipment - Asking simple questions and recognising that they can be answered in different ways. - Performing simple tests using standard units when appropriate.			- Gathering and recording data to help in answering questions. - Using their observations and ideas to suggest answers to questions. - Observing closely, using simple equipment. - Identifying and classifying.						-Gathering and recording data to help in answering questions.	
Enquiry	**Comparative (revisited)** Do plants grow healthier in the light or dark?			**Research** What different habitats are there on planet Earth and what lives in each habitat?						**Comparative (revisited)** Do plants grow healthier in the light or dark?	

	Summer Term												
	Wk1 (4 days)	**Wk2**	**Wk3**	**Wk4 (4 days)**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**	**Wk12**	**Wk13**
	Plants (bulbs and seeds) (Biology)		**Consolidation/ Assessment point**	**Growing up (Biology)**				**Consolidation/ Assessment point**	**Bulbs and seeds B (Biology)**	**Growing up B (Biology)**	**Wildlife (Sustainability)**		**Consolidation -Working scientifically**
Substantive	-Observe and describe how seeds and bulbs grow into mature plants.		End of unit assessment- **Plants (bulbs and seeds).** Revisit gaps in knowledge and skills.	- Notice that animals, including humans, have offspring which grow into adults.				End of unit assessment- **Growing up.** Revisit gaps in knowledge and skills.	-Observe and describe how seeds and bulbs grow into mature plants.	- Notice that animals, including humans, have offspring which grow into adults.	-Wildlife is the animals and plants that live in nature and are not looked after by humans. -Some plants can be eaten as food. - There are many ways to care for local wildlife. - It is important to care for plants and animals.		Teachers to incorporate identified gaps in knowledge where appropriate.
Disciplinary	-Observing closely, using simple equipment. -Record and communicate their findings in a range of ways and begin to use simple scientific language (non-statutory). -Asking simple questions and recognising that they can be answered in different ways. -Performing simple tests, using standard units when appropriate.			- Identifying and classifying. - Asking simple questions and recognising that they can be answered in different ways. - Record and communicate their findings in a range of ways and begin to use simple scientific language (non-statutory). - Observing closely, using simple equipment. - – Using their observations and ideas to suggest answers to questions.					- Observing closely, using simple equipment.	-Observing closely, using simple equipment.	- Asking simple questions and recognising that they can be answered in different ways. - Using their observations and ideas to suggest answers to questions.		Teachers to incorporate identified gaps in skills.
Enquiry	**Observation over time (revisited)** How do bulbs and seeds change over time?			**Pattern seeking (revisited)** Are there patterns between the life cycles of different animals?					**Observation over time (revisited)** How do bulbs and seeds change over time?	**Pattern seeking (revisited)** Are there patterns between the life cycles of different animals?	**Research** Why is it important to care for wildlife?		Teachers to identify possible enquiry question where appropriate.

Year 3 LTP

Autumn														
	Wk1 (3 days)	**Wk2**	**Wk3**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**	**Wk12**	**Wk13**	**Wk14**	**Wk15**
	Skeletons (Biology)				**Movement (Biology)**	**Consolidation/ Assessment point**	**Nutrition and Diet (Biology)**			**Food Waste (Sustainability)**	**Consolidation/ Assessment point**	**Rocks (Chemistry)**			**Consolidation/ Assessment point**
Substantive	- Identify that humans and some other animals have skeletons and muscles for support, protection and movement.				-Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	End of unit assessment- **Skeletons** End of unit assessment- **Movement** Revisit gaps in knowledge and skills.	- 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.			-Food waste is food that is safe to eat but is thrown away instead. -A lot of food waste and food remains end up in landfill sites, where they rot and have negative impacts on the planet.	End of unit assessment- **Nutrition and Diet** Revisit gaps in knowledge and skills.	-Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.			End of unit assessment- **Rocks** Revisit gaps in knowledge and skills.
Disciplinary	-Ask questions and understand there are different enquiry types they could use to answer them. -Recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables. -Report on findings from enquiries, including oral and written explanations. - Talk about criteria for grouping, sorting and classifying (non-statutory).				- Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations (non-statutory). - Communicate their findings in ways that are appropriate for different audiences (non-statutory).		-Make simple conclusions. -Use results, findings or observations to answer questions. -Report on findings from enquiries, including oral and written explanations. - Talk about criteria for grouping, sorting and classifying (non-statutory). .			-Ask questions and understand there are different enquiry types they could use to answer them. -Report on findings from enquiries, including oral and written explanations.		-Make careful observations using scientific equipment. - Perform tests and simple experiments and taking measurements using standard units. -Recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables. - Talk about criteria for grouping, sorting and classifying (non-statutory).		
Enquiry	**Identifying and classifying** How can animals be sorted and grouped based on their skeletons?						**Research** What is a balanced diet and is it important?			**Research** What is food waste and how can it be reduced?		**Identifying and classifying** How can rocks be identified and grouped based on their properties?			

	Spring Term										
	Wk1 (4days)	**Wk 2**	**Wk3**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk 11**
	Fossils (Chemistry)		**Soils (Chemistry)**			**Consolidation/ Assessment point**	**Light (Physics)**				**Consolidation/ Assessment point**
Substantive	- 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.			End of unit assessment- **Fossils** End of unit assessment- **Soils** Revisit gaps in knowledge and skills.	-Recognise that they need light in order to see things and that dark is the absence of light. - Recognise that light from the Sun can be dangerous and that there are ways to protect their eyes. - Notice that light is reflected from surfaces. - 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.				End of unit assessment- **Light** Revisit gaps in knowledge and skills.
Disciplinary	- Ask questions and understand there are different enquiry types they could use to answer them. -Report on findings from enquiries, including oral and written explanations.		- Make relevant predictions. - Identify what they will change, observe and keep the same. - With support, set up simple practical enquiries. - Make careful observations using scientific equipment. - Perform tests and simple experiments and taking measurements using standard units. -Recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables. -Make simple conclusions. -Use results, findings or observations to answer questions - Suggest questions for further investigation.				- Make relevant predictions. - Identify what they will change, observe and keep the same. - With support, set up simple practical enquiries. - Make careful observations using scientific equipment. -Recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables. -Make simple conclusions. -Use results, findings or observations to answer questions. - Suggest questions for further investigation.				
Enquiry	**Research** How are fossils formed?		**Comparative** Which soil absorbs the most water?				**Fair test** How does the distance between the light source and the object affect the size of a shadow?				

	Summer Term												
	Wk1 4 days	**Wk2**	**Wk3 4 days**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk 8**	**Wk9**	**Wk10**	**Wk 11**	**Wk12**	**Wk13**
	Plants A (Biology)					**Consolidation/ Assessment point**	**Forces (Physics)**		**Magnets (Physics)**		**Consolidation/ Assessment point**	**Plants B (Biology)**	**Biodiversity (Sustainability)**
Substantive	-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.					End of unit assessment- **Plants A** Revisit gaps in knowledge and skills.	- 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.		End of unit assessment- **Forces** End of unit assessment- **Magnets** Revisit gaps in knowledge and skills.	- 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.	-Biodiversity describes the variety of living things within a habitat. -Human actions can reduce biodiversity. -Plants and animals may become endangered or extinct if their habitats are continually destroyed.
Disciplinary	- Ask questions and understand there are different enquiry types they could use to answer them. - Make relevant predictions. - Identify what they will change, observe and keep the same. - With support, set up simple practical enquiries. -Recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables. -Make simple conclusions. -Use results, findings or observations to answer questions -Report on findings from enquiries, including oral and written explanations. -Talk about criteria for grouping, sorting and classifying (non-statutory). -Use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences (non-statutory).						- Make relevant predictions. - Identify what they will change, observe and keep the same. - With support, set up simple practical enquiries. - Suggest questions for further investigation. - Make simple conclusions. -Use results, findings or observations to answer questions		- Make relevant predictions. - Identify what they will change, observe and keep the same. - With support, set up simple practical enquiries. -Recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables. -Report on findings from enquiries, including oral and written explanations. -Make simple conclusions. -Use results, findings or observations to answer questions			- Suggest questions for further investigation. -Make simple conclusions. -Use results, findings or observations to answer questions	- Ask questions and understand there are different enquiry types they could use to answer them. -Report on findings from enquiries, including oral and written explanations.
Enquiry	**Observation over time (revisited)** Does the number of seeds within one plant pot affect the growth of the plants?						**Pattern seeking** How does the material on the ramp affect the distance a car travels?		**Pattern seeking** Are all metals magnetic?			**Observation over time (revisited)** Does the number of seeds within one plant pot affect the growth of the plants?	**Research** What is biodiversity and how can we increase it?

Year 4 LTP

Autumn														
	Wk1 (3 days)	**Wk2**	**Wk3**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk 10**	**Wk 11**	**Wk12**	**Wk13**	**Wk14**	**Wk15**
	Teach the following units on White Rose Hub for Year 3 curriculum coverage. **Rocks- Autumn term Week 9-11 (Chemistry)** **Fossils- Spring term Week 1-2 (Chemistry)** **Soils- Spring term Week 3-5 (Chemistry)**								**Consolidation/ Assessment point**	**Teach the following units on White Rose Hub to complete Year 4 unit 'Living Things and their Habitats'.** **Group and Classify Living Things- Autumn term Week 1- 3 (Biology)**					**Consolidation/ Assessment point**
Substanti	**Rocks Week 1 – 4** -Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.				**Fossils- Week 5- 6** - Describe in simple terms how fossils are formed when things that have lived are trapped within rock.		**Soils- Week 7-8** - Recognise that soils are made from rocks and organic matter.		End of unit assessment- **Rocks** End of unit assessment- **Fossils** End of unit assessment- **Soils** Revisit gaps in knowledge and skills	-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.					End of unit assessment- **Group and Classify Living Things** Revisit gaps in knowledge and skills
Disciplinary	**Rocks** -Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. - Talk about criteria for grouping, sorting and classifying (non-statutory).				**Fossils** - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.		**Soils** -Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. -Using straightforward scientific evidence to answer questions or to support their findings. -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. -Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.		- Talk about criteria for grouping, sorting and classifying (non-statutory). - Asking relevant questions and using different types of scientific enquiries to answer them. - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. - Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.					
Enquiry	**Rocks- Identifying and classifying** How can rocks be identified and grouped based on their properties?				**Fossils- Research** How are fossils formed?		**Soils- Comparative** Which soil absorbs the most water?			**Living Things- Identifying and classifying** How can living things be grouped and classified?					

	Spring Term										
	Wk1 (4 days)	**Wk2**	**Wk3**	**Wk4**	**Wk 5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**
	Teach the following units on White Rose Hub for Year 4 curriculum coverage. **States of Matter- Autumn term Week 5-11 (Chemistry)**							**Consolidation/ Assessment point**	**Teach the following units on White Rose Hub for Year 4 curriculum coverage.** **Food Chains- Summer term Week 11-12 (Biology)**		**Consolidation/ Assessment point**
Substantive	- 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.							End of unit assessment- **States of Matter** Revisit gaps in knowledge and skills	- Construct and interpret a variety of food chains, identifying producers, predators and prey.		End of unit assessment- **Food Chains** Revisit gaps in knowledge and skills
Disciplinary	- Talk about criteria for grouping, sorting and classifying (non-statutory). - Identifying differences, similarities or changes related to simple scientific ideas and processes. - Asking relevant questions and using different types of scientific enquiries to answer them. - Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. - Setting up simple practical enquiries, comparative and fair tests. - Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.								- Using straightforward scientific evidence to answer questions or to support their findings. - 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.		
Enquiry	**Fair test** How does the temperature of the water affect the time it takes for ice to melt?								**Research** How has human activity affected food chains?		

	Summer Term												
	Wk1 (4 days)	**Wk2**	**Wk3**	**Wk4 (4 days)**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**	**Wk12**	**Wk13**
	Teach the following units on White Rose Hub for Year 3 curriculum coverage. **Plants A – Summer term Week 1 – 6 (Biology)** **(The unit is being taught by Year 3 at the same time).**					**Consolidation/ Assessment point**	**Teach the following units on White Rose Hub for Year 3 curriculum coverage.** **Skeletons – Autumn term Week 1-3 (Biology)** **Movement- Autumn term Week 4 (Biology)** **Nutrition and Diet Autumn term Week 5-7 (Biology)** **(These units have been previously taught by Year 3 this academic year- may need modifications to fit week allocation)**					**Teach the following units on White Rose Hub for Year 3 curriculum coverage.** **Plants B (Biology)- Summer term Week 11** **(This is being taught by Year 3 at the same time)**	**Consolidation/ Assessment point**
Substantive	-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.					End of unit assessment- **Plants** Revisit gaps in knowledge and skills	- 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.					- 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.	End of unit assessment- **Skeletons** End of unit assessment- **Movement** End of unit assessment- **Nutrition and Diet** Revisit gaps in knowledge and skills
Disciplinary	-Using straightforward scientific evidence to answer questions or to support their findings. -Talk about criteria for grouping, sorting and classifying (non-statutory). -Asking relevant questions and using different types of scientific enquiries to answer them. -Setting up simple practical enquiries, comparative and fair tests. -Identifying differences, similarities or changes related to simple scientific ideas and processes. -Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. -Use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences (non-statutory). -Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.						-Asking relevant questions and using different types of scientific enquiries to answer them. - Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. - Talk about criteria for grouping, sorting and classifying (non-statutory). - Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. - Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations (non-statutory). - Communicate their findings in ways that are appropriate for different audiences (non-statutory). - Using straightforward scientific evidence to answer questions or to support their findings. - Identifying differences, similarities or changes related to simple scientific ideas and processes.					- Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	
Enquiry	**Observation over time (revisited)** Does the number of seeds within one plant pot affect the growth of the plants?						**Identifying and classifying** How can animals be sorted and grouped based on their skeletons? **Research** What is a balanced diet and is it important?					**Observation over time (revisited)** Does the number of seeds within one plant pot affect the growth of the plants?	

Year 5 LTP

Autumn term															
	Wk1 (3 days)	**Wk2**	**Wk3**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**	**Wk12**	**Wk13**	**Wk14**	**Wk15**
	Forces (Physics)						**Consolidation/ Assessment point**	**Space (Physics)**					**Consolidation/ Assessment point**	**Global Warming (Sustainability)**	
Substantive	- Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. -Explain that unsupported objects fall towards the Earth because of gravity acting between the Earth and the falling object. -Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.						End of unit assessment **- Forces** Revisit gaps in knowledge and skills.	- Describe the Sun, Earth and Moon as approximately spherical bodies. -Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. -Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. - Describe the movement of the Moon relative to the Earth.					End of unit assessment- **Space** Revisit gaps in knowledge and skills.	-The greenhouse effect is caused by greenhouse gases trapping heat from the Sun. This leads to global warming. -Global warming can lead to glaciers and ice caps melting. This can cause sea levels to rise, leading to flooding. -Global warming can change weather patterns and can lead to drought or flooding. Drought and flooding make it hard to grow crops. Global warming affects humans, animals and plants. -Global warming and climate change can cause icy habitats to melt due to increasing temperatures. -Humans, animals and plants are affected by flooding and drought by global warming.	
Disciplinary	-Ask scientific questions and begin to understand which questions would be best suited to each enquiry type. -Make predictions based on scientific knowledge. -With support, plan different types of scientific enquiry. Where appropriate, identify the dependent, independent and controlled variables. - Use a range of scientific equipment to make systematic and careful observations. - Take accurate measurements using a range of scientific equipment. Start to take repeat readings when appropriate. -Report and present findings from enquiries, including conclusions. -Begin to identify causal relationships in oral and written forms such as displays and other presentations. -Use scientific evidence to answer questions. -Make conclusions based on scientific evidence and from their own testing and findings. - Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory). - Recognise which secondary sources will be most useful to research their ideas (non-statutory).							-Record data using scientific diagrams and labels, classification keys, tables, bar and line graphs. -Report and present findings from enquiries, including conclusions. -Begin to identify causal relationships in oral and written forms such as displays and other presentations. -Use scientific evidence to answer questions. -Make conclusions based on scientific evidence and from their own testing and findings. - Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time (non-statutory).				- Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact (non-statutory). -Use scientific evidence to answer questions. -Make conclusions based on scientific evidence and from their own testing and findings.	
Enquiry	**Fair Test** Does the size of a parachute affect the time it takes for it to fall to the ground?							**Research** How have ideas about the Solar System changed over time?						**Research** What is global warming and how can we help to reduce it?	

	Spring Term										
	Wk1 (4days)	**Wk2**	**Wk3**	**Wk4**	**Wk5**	**Wk 6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**
	Properties of Materials (Chemistry)				**Consolidation/ Assessment point**	**Plastic Pollution (Sustainability)**	**Animals including Humans (Biology)**				**Consolidation/ Assessment point**
Substantive	-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.				End of unit assessment- **Properties of Materials** Revisit gaps in knowledge and skills.	-Plastics are man-made materials that are often strong, lightweight and can be used to make plastic bottles, carrier bags and containers. -Plastics are designed to last a very long time and do not break down easily. -Plastics can end up in landfill sites as well as the oceans. This has an impact on animal and plant life. -As a result of plastic pollution, lots of plastic ends up in landfill sites and the oceans.	-Describe the changes as humans develop to old age.				End of unit assessment- **Animals including Humans** Revisit gaps in knowledge and skills.
Disciplinary	-Ask scientific questions and begin to understand which questions would be best suited to each enquiry type. -Make predictions based on scientific knowledge. -With support, plan different types of scientific enquiry. Where appropriate, identify the dependent, independent and controlled variables. - Use a range of scientific equipment to make systematic and careful observations. - Take accurate measurements using a range of scientific equipment. Start to take repeat readings when appropriate. - Record data using scientific diagrams and labels, classification keys, tables, bar and line graphs. - Continue to use results to draw simple conclusions, suggest improvements and raise further questions for possible testing. -Use and develop keys and other information records to identify, classify and describe living things and materials (non-statutory). - Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).					-Report and present findings from enquiries, including conclusions. -Begin to identify causal relationships in oral and written forms such as displays and other presentations. -Use scientific evidence to answer questions. -Make conclusions based on scientific evidence and from their own testing and findings.	- Ask scientific questions and begin to understand which questions would be best suited to each enquiry type. -Make predictions based on scientific knowledge. -With support, plan different types of scientific enquiry. Where appropriate, identify the dependent, independent and controlled variables. Record data using scientific diagrams and labels, classification keys, tables, bar and line graphs. -Report and present findings from enquiries, including conclusions. -Begin to identify causal relationships in oral and written forms such as displays and other presentations. -Use scientific evidence to answer questions. -Make conclusions based on scientific evidence and from their own testing and findings.				
Enquiry	**Comparative** Which material is the best insulator of heat?					**Research** What is plastic pollution and what are the impacts of plastic pollution on planet Earth?	**Pattern seeking** Are there patterns linking gestation periods and lifespans?				

	Summer Term												
	Wk1 (4 days)	**Wk2**	**Wk3**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**	**Wk12**	**Wk13**
	Lifecycles (Biology)			**Reproduction (Biology)**			**Consolidation / Assessment point**	**Reversible and irreversible changes (Chemistry)**				**Consolidation/ Assessment point**	**Reproduction (Biology B)**
Substantive	- 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.			End of unit assessment- **Lifecycles** End of unit assessment- **Reproduction** Revisit gaps in knowledge and skills.	- 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.				End of unit assessment- **Reversible/ Irreversible changes** Revisit gaps in knowledge and skills.	- Describe the life process of reproduction in some plants and animals.
Disciplinary	- Report and present findings from enquiries, including conclusions. -Begin to identify causal relationships in oral and written forms such as displays and other presentations. -Use scientific evidence to answer questions. -Make conclusions based on scientific evidence and from their own testing and findings. -Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas' (non-statutory).			- Ask scientific questions and begin to understand which questions would be best suited to each enquiry type. -Make predictions based on scientific knowledge. -With support, plan different types of scientific enquiry. Where appropriate, identify the dependent, independent and controlled variables. - Use a range of scientific equipment to make systematic and careful observations. - Take accurate measurements using a range of scientific equipment. Start to take repeat readings when appropriate. -Record data using scientific diagrams and labels, classification keys, tables, bar and line graphs. -Report and present findings from enquiries, including conclusions. -Begin to identify causal relationships in oral and written forms such as displays and other presentations. -Use scientific evidence to answer questions. -Make conclusions based on scientific evidence and from their own testing and findings. - Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).					- Record data using scientific diagrams and labels, classification keys, tables, bar and line graphs. - Use a range of scientific equipment to make systematic and careful observations. - Take accurate measurements using a range of scientific equipment. Start to take repeat readings when appropriate. - Continue to use results to draw simple conclusions, suggest improvements and raise further questions for possible testing. -Use scientific evidence to answer questions. -Make conclusions based on scientific evidence and from their own testing and findings. -Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory).			- Continue to use results to draw simple conclusions, suggest improvements and raise further questions for possible testing.
Enquiry	**Research** How are the life cycles of animals similar and how are they different?			**Observation over time (revisited)** Which plant cutting produces the tallest plant?				**Identifying and classifying** Which changes are reversible and which are irreversible?					**Observation over time** Which plant cutting produces the tallest plant?

Year 6 LTP

Autumn term															
	Wk1 (3 days)	**Wk2**	**Wk3**	**Wk4**	**Wk 5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**	**Wk12**	**Wk13**	**Wk14**	**Wk15**
	Living Things and their habitats (Biology)					**Consolidation/ Assessment point**	**Electricity (Physics)**				**Renewable energy (Sustainability)**	**Consolidation/ Assessment point**	**The Circulatory System (Biology)**		
Substantive	-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.					End of unit assessment **- Living things and their habitats.** Revisit gaps in knowledge and skills.	-Use recognised symbols when representing a simple circuit in a diagram. - 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. - Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.				-Solar power uses light energy from the Sun to generate electricity. -Wind power uses wind to generate electricity. -Solar and wind power are renewable energy sources. This means that they will not run out. -Fossil fuels are non-renewable energy sources. This means that they will eventually run out. -In the UK, burning fossil fuels to generate electricity is the largest source of greenhouse gas emissions. -Emissions of greenhouse gases lead to the greenhouse effect and global warming. -Renewable energy sources, such as solar and wind energy, can help limit the impact of global warming.	End of unit assessment **- Electricity** Revisit gaps in knowledge and skills.	- Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. - Describe the ways in which nutrients and water are transported within animals, including humans.		
Disciplinary	- Identifying scientific evidence that has been used to support or refute ideas or arguments. - Use and develop keys and other information records to identify, classify and describe living things (non-statutory). - Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment (non-statutory). - Reporting and presenting 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 relevant scientific language and illustrations to discuss, communicate and justify their ideas and should talk about how scientific ideas have developed over time (non-statutory).						- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Reporting and presenting 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. - Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. - Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. - Using 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. - Reporting and presenting findings from enquiries in oral and written forms such as displays and other presentations.		- Explore ideas and raise different kinds of questions (non-statutory). - Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory). - Reporting and presenting 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.		
Enquir	**Identifying and classifying** **Observation over time** How can animals, plants and microorganisms be identified, grouped and classified?						**Fair test** How does the voltage in a circuit affect the loudness of a buzzer?				**Research** What is renewable energy and how can we use it to generate electricity?		**Research** What is the circulatory system and how does it work?		

	Spring Term										
	Wk1 (4 days)	**Wk2**	**Wk3**	**Wk4**	**Wk5**	**Wk6**	**Wk7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**
	Diet, drugs and lifestyle (Biology)			**Consolidation/ Assessment point**	**Light (Chemistry)**					**Light pollution (sustainability)**	**Consolidation/ Assessment point**
Substantive	-Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.			**End of unit assessment- Circulatory system** **End of unit assessment- Diet, drugs and lifestyle** Revisit gaps in knowledge and skills.	-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 that objects are seen because they give out or reflect light into the eye. -Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. -Recognise that light appears to travel in straight lines.				-Glare, light trespass and skyglow are all types of light pollution. - Glare is caused by brightness from car or vehicle headlights. - Light trespass is where light shines into areas it is not intended to. -Skyglow is the brightening of the sky at night. -There are ways to reduce our light emissions. -Turning off lights, devices, appliances and machines, unplugging electronic equipment and using natural light as much as possible helps to reduce light pollution.	**End of unit assessment- Light** Revisit gaps in knowledge and skills.
Disciplinary	-Identifying scientific evidence that has been used to support or refute ideas or arguments. -Recognise which secondary sources will be most useful to research their ideas and begin the separate opinion from fact (non-statutory). -planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. -Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. - Using test results to make predictions to set up further comparative and fair tests.				-Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory). -Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. -Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. -Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. – Identifying scientific evidence that has been used to support or refute ideas or arguments. -Talk about how scientific ideas have changed over time (non-statutory).				- Identifying scientific evidence that has been used to support or refute ideas or arguments. - Reporting and presenting 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.	
Enquiry	**Fair test** How does the duration of exercise affect heart rate?				**Fair test** How does the distance from a light source affect the size of the shadow?					**Research** What is light pollution and how can we reduce it?	

	Summer Term											
	Wk1 (4 days)	**Wk2**	**Wk3**	**Wk4 (4 days)**	**Wk 5**	**Wk 6**	**W k7**	**Wk8**	**Wk9**	**Wk10**	**Wk11**	**Wk12**
	Variation (biology)		**Consolidation / Assessment point**	**Adaptations**				**Consolidation/ Assessment point**	**Fossils**		**Consolidation/ Assessment point**	**Themed projects (Year 7 ready)**
Substantive	-Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.		**End of unit assessment- Variation** Revisit gaps in knowledge and skills.	-Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.				**End of unit assessment- Adaptations** Revisit gaps in knowledge and skills.	- Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.		**End of unit assessment- Fossils** Revisit gaps in knowledge and skills.	Teachers to use 'Big Ideas' guidance to support (melting points/thermal insulation).
Disciplinary	-Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas (non-statutory). -Recording data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar charts and line graphs.			-Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact (non-statutory). -Identifying scientific evidence that has been used to support or refute ideas or arguments. -Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time (non-statutory).					- Identifying scientific evidence that has been used to support or refute ideas or arguments. - Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time (non-statutory). - Reporting and presenting 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.		Teachers to use the scientific enquiry process within 'Big ideas' guidance to support coverage of disciplinary skills.
Enquiry	**Pattern seeking (within adaptation unit)** Is the type of food a bird eats related to the shape of its beak?			**Pattern seeking** Is the type of food a bird eats related to the shape of its beak?					**Research** How have fossils changed over time and does this provide evidence for evolution?			Teachers/ Children to plan as part of 'big ideas' guidance.