SCIENCE
Subject Profile

Last updated 19.11.25

	Substantive Knowledge **End Points (Unit outcomes)**	**Substantive Knowledge Strands**	**Disciplinary Knowledge** ***Scientific enquiry Skills:*** Pattern seeking Comparative tests Observing over time Researching Sustainability Identifying, grouping and classifying Conducting Fair tests ***Working Scientifically:*** Ask questions Make conclusions Answer questions and make conclusions Take measurements Gather, record and classify data Make observations Present findings Plan Evaluate
		Animals, including humans **Plants** **Seasonal changes** **Materials** **Earth and space** **Habitats** **Rocks** **Light** **Sound** **Forces** **Electricity** **Sustainability** **States of matter**	
EYFS	• To know their body can sense things around them - smell, touch, hearing, sight, taste. • To know basic similarities and differences of animals and plants. • To know the names of the seasons and some seasonal weather • Children observe and interact with natural processes (eg an object casting a shadow, floating and sinking, freezing and melting, day and night) • To know some ways we can care for our environment. • To know different materials have different properties • To know that animals live in different places • To know that plants can provide food		

YEAR 1			
The Human Body (biology)	• To know the five senses and which part of the body is associated with it. • To know that humans can see where there is light. • To know key parts of the human body (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth)	**Animals, including humans**	***Scientific enquiry skills:*** Pattern seeking ***Working Scientifically:*** Ask questions Answer questions and make conclusions Take measurements
Seasonal Changes A (biology)	• To know the order of four seasons are spring, summer, autumn, and winter. • To know that some trees lose their leaves in autumn and common weather patterns.	**Seasonal Changes**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Gather, record and classify Ask questions
Materials (Chemistry)	• To know that there are different materials and to name wood, plastic, glass, metal, water and rock. • To know physical properties of a variety of everyday materials. • To know how to compare and group a variety of everyday materials based on their properties.	**Materials**	***Scientific enquiry skills:*** Comparative test ***Working Scientifically:*** Make observations Gather, record and classify Answer questions and make conclusions Ask questions Take measurements
Seasonal Changes B (biology)	• To know that in winter, there are fewer hours of daylight, and the nights are longer and common weather patterns.	**Seasonal Changes**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Ask questions Gather, record and classify

Planting A (Biology)	• To know a plant is a living thing that usually grows in soil. • To know that a seed can be planted to grow into a new plant.	**Plants**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Ask questions
Animals (Biology)	• To know a variety of common animals (including fish, amphibians, reptiles, birds and mammals). • To compare similarities and differences between these groups of animals and group them. • To know what a carnivore, herbivore and omnivore is and give examples.	**Animals, including humans**	***Scientific enquiry skills:*** Research ***Working Scientifically:*** Gather, record and classify Answer questions and make conclusions
Caring for the planet (sustainability)	• To know that some actions (e.g. recycling) are helpful for the Earth • To know that some actions (e.g. single use plastic) are harmful for the Earth.	**Sustainability**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Ask questions Answer questions and make conclusions
Seasonal Changes C (biology)	• To know that in spring, plants start to grow and some trees regrow their leaves and common weather patterns.	**Seasonal Changes**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Ask questions Gather, record and classify
Planting B (Biology)	• To know that some plants have roots, leaves and a stem.	**Plants**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Make observations Gather, record and classify

Plants (biology)	• To know that flowering plants have flowers, stems, roots and leaves • Identify and name a variety of common wild and garden plants • To know that deciduous trees lose their leaves in autumn and evergreen trees keep their leaves all year round. •	**Plants**	***Scientific enquiry skills:*** Identifying, grouping and classifying ***Working Scientifically:*** Gather, record and classify Make observations Answer questions and make conclusions
Planting C (biology)	• To know that plants change over time e.g. longer stem, longer roots, new leaves)	**Plants**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Make observations Gather, record and classify
Growing and cooking	• To know that fruit and vegetables can be grown for food. • To know that a fruit contains the seed. • To know that vegetables are parts of the plant that you can eat (usually the stems, roots and leaves).	**Plants**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Ask questions Answer questions and make conclusions
Seasonal Changes D (biology)	• To know that in summer, there are the most hours of daylight, and the nights are shorter. • To know that more animals are active in summer and common weather patterns.	**Seasonal Changes**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Gather, record and classify Ask questions Answer questions and make conclusions
YEAR 2			

Animals' needs for survival (biology)	• To know common examples of animals such as mammals, birds, fish, amphibians, reptiles and humans. • To know that all animals (including humans) need air, water, food and shelter to survive. • To know and describe the basic needs of survival of animals groups such as mammals, birds, fish, amphibians, reptiles and humans.	**Animals, including humans**	***Scientific enquiry skills:*** Identifying, grouping and classifying ***Working Scientifically:*** Gather, record and classify Answer questions and make conclusions Ask questions
Humans (biology)	• To know that exercise keeps you mentally and physically healthy. • To know some examples of foods that are healthy/unhealthy. • To know the importance of hygiene and self-care, (including washing hands and cleaning teeth)	**Animals, including humans**	***Scientific enquiry skills:*** Pattern seeking ***Working Scientifically:*** Gather, record and classify Make observations
Materials (chemistry)	• To know that different materials are suitable for different purposes and identify why, including wood, metal, plastic, glass, brick, rock, paper and cardboard • To know that some materials can change shape (by twisting, bending, squishing etc.) and some cannot. • To know that materials are natural or human made.	**Materials**	***Scientific enquiry skills:*** Comparative test ***Working Scientifically:*** Ask questions Make observations Gather, record and classify Take measurements Answer questions and make conclusions
Plastic pollution **Sustainability-**	• To know that plastic can be helpful but plastic can also be harmful to humans and other animals. • To know that some plastic can be recycled, and some cannot. • To know that there are ways to reduce your plastic waste.	**Materials** **Sustainability**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Ask questions Answer questions and make conclusions

Plants (light and dark) (biology)	• To know that plants need water to grow and stay healthy and what happened when one is absent.	**Plants**	***Scientific enquiry skills:*** Comparative test ***Working Scientifically:*** Make observations Ask questions Take measurements
Living things and habitats (biology)	• To know that a habitat is where a plant or animal lives and it provides everything a plant or animal needs to survive. • To know that there are a variety of plants and animals in different habitats including microhabitats. • To know that a food chain shows how different living things rely on each other. • To know that some things were never alive, some things are dead (once alive), and somethings are still living.	**Habitats**	***Scientific enquiry skills:*** Research ***Working Scientifically:*** Gather, record and classify Answer questions and make conclusions Make observations
Plants (light and dark) (biology)	• To know that plants need water and light to grow and stay healthy and what happens when one is absent. • (revisit from previous plant unit)	**Plants**	***Scientific enquiry skills:*** Comparative test ***Working Scientifically:*** Gather, record and classify
Plants (bulbs and seeds) (biology)	To know that bulbs and seeds grow into mature plants and how they begin to do this.	**Plants**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Make observations Gather, record and classify Ask questions Take measurements

Growing up (biology)	• To know that animals including humans have offspring that grow into adults • To know that most mammals give birth to live young. • To know that reptiles, amphibians and birds (and most insects) lay eggs. • To know a life cycle has different stages for different animals (including humans, frogs and butterflies).	**Animals, including humans**	***Scientific enquiry skills:*** Pattern seeking ***Working Scientifically:*** Gather, record and classify Answer questions and make conclusions Ask questions Make observations
Plants (bulbs and seeds) (biology)	• To know that plants need a suitable temperature to grow and stay healthy.	**Plants**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Make observations
Wildlife – sustainability	• To know that wildlife is the animals and plants that live in nature and are not looked after by humans. • To know that are many ways to care for local wildlife.	**Sustainability**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Ask questions Answer questions and make conclusions

YEAR 3			
Skeletons (biology)	• To know that skeletons have three functions (support, protection and movement) • to know that some animal groups (e.g. mammals, birds, fish, amphibians and reptiles) have skeletons inside their body. • To name some examples of animals with and without a spine.	**Animals, including humans**	***Scientific enquiry skills:*** Identifying, grouping and classifying ***Working Scientifically:*** Ask questions Gather, record and classify Present findings

Movement (biology)	• to know that a joint is where two or more bones connect. • To know that movement happens because muscles are attached to bones.	**Animals, including humans**	***Scientific enquiry skills:*** Identifying, grouping and classifying ***Working Scientifically:*** Answer questions and make conclusions Present findings
Nutrition and Diet (biology)	• To know the five food groups (fruit & vegetables, dairy and alternatives, protein, carbohydrates, and fats & sugars) • To know that animals including humans cannot make their own food so they get their nutrition from the food they eat. • To know that humans need to eat a healthy balanced diet to maintain good health.	**Animals, including humans**	***Scientific enquiry skills:*** Research ***Working Scientifically:*** Gather, record and classify Answer questions and make conclusions Present findings
Food waste **Sustainability**	• To know that food waste is food that is edible but is thrown away instead. • To know that food waste and food remains end up in landfill sites where they rot and have negative impacts on the planet.	**Sustainability**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Ask questions Present findings
Rocks (chemistry)	• To know that rocks can be grouped according to what they look like (e.g. grains, crystals or layers) • To know that rocks have different properties (e.g. hard, brittle, acid reactive, float, sink). • To know that rocks change overtime because of their properties	**Materials**	***Scientific enquiry skills:*** Identifying, grouping and classifying ***Working Scientifically:*** Make observations Gather, record and classify
Fossils (chemistry)	• To know that a fossil is the remains or trace of a living thing that lived a long time ago in trapped rock.	**Rocks**	***Scientific enquiry skills:*** Research

	• To know that both plants and animals can become fossils.		***Working Scientifically:*** Ask questions Present findings
Soils (chemistry)	• To know that organic matter is the remains of dead plants and animals. • To know that soils are made from rocks, organic matter and water. • To know that different types of soils have different properties.	**Rocks**	***Scientific enquiry skills:*** Comparative test ***Working Scientifically:*** Gather, record and classify Answer questions and make conclusions Take measurements
Light (physics)	• To know that natural light sources are objects in nature that give out light (e.g. sun) and artificial light sources are made by humans. • To know that light from the sun can be dangerous and that there are ways to protect our eyes. • To know that darkness is the absence of light • To know that reflection is return of light from a material or surface • To know that shadows are formed when the light from a light source is blocked by opaque object.	**Light**	***Scientific enquiry skills:*** Fair test ***Working Scientifically:*** Make observations Gather, record and classify Answer questions and make conclusions Ask questions Plan
Plants A (biology)	• To know that plants are made up of different parts and these have different functions. • To know how water is transported in plants. • To know the parts of flowering plants and their function in the plant's life cycle including pollination, seed formation and seed dispersal. • To know that pollination is the transfer of pollen so the plant can reproduce. • To know that seed dispersal is the movement of seeds away from the parent plant for the life cycle process to begin again.	**Plants**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Answer questions and make conclusions Gather, record and classify Ask questions Plan Make observations Present findings
Forces (physics)	• To know that forces are pushes or pulls	**Forces**	***Scientific enquiry skills:***

	• To know that a contact force is a push or pull that affects objects that are touching • To know that friction is a contact force that can slow down or stop a moving object • To know that the properties of different surfaces affect the levels of friction.		Pattern seeking ***Working Scientifically:*** Make observations Plan Answer questions and make conclusions
Magnets (physics)	• To know that a magnetic force is a non-contact force • To know that magnets have two poles (a north pole and a south pole) • To know that the opposite poles on two magnets will attract each other and that the same poles on two magnets will repel each other. • To know that some metals are magnetic and some metals are not.	**Forces**	***Scientific enquiry skills:*** Pattern seeking ***Working Scientifically:*** Pattern seeking Gather, record and classify Make observations Plan Present findings
Plants B (biology)	• To know that plants need air, light, water, nutrients from soil and room to grow (from plants grown in plant A unit).	**Plants**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Answer questions and make conclusions
Biodiversity – sustainability	• To know that biodiversity describes the variety of living things within a habitat • To know that animals and plants may become endangered or extinct if their habitats are continually destroyed.	**Sustainability**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Ask questions Present findings
YEAR 4			
Group and classify living things (biology)	• To know that living things can be grouped in a variety of ways. • To know that animals with a spine are called vertebrates and those without a spine are called invertebrates.	**Animals, including humans**	***Scientific enquiry skills:*** Identifying, grouping and classifying ***Working Scientifically:*** Gather, record and classify

	To know how to use classification keys to group, identify and name living things.		Ask questions Present findings
Data collection A (biology)	• To know how to gather and record data. • To know how to present data using bar charts and pictograms to spot patterns and trends easily.	**Animals, including humans**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Gather, record and classify
States of Matter (chemistry)	• To know that materials can be compared and grouped according to whether they are solids, liquids or gases. • To know 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) • To know the part played by evaporation and condensation in the water cycle. • To know how temperature effects the rate of evaporation. •	**States of matter**	***Scientific enquiry skills:*** Fair test ***Working Scientifically:*** Gather, record and classify Make observations Ask questions Plan Answer questions and make conclusions
Sound (physics)	• To know that sound is the result of vibrations. • To know that vibrations from sound travel though a medium to the ear. • To know how vibrations affect the pitch and volume of sound. • To know that sounds get fainter as the distance from the sound source increases.	**Sound**	***Scientific enquiry skills:*** Fair test ***Working Scientifically:*** Ask questions Gather, record and classify Take measurements Answer questions and make conclusions Make observations Plan
Data collection B (biology)	• To know how to gather and record data. • To know how to present data using bar charts and pictograms to spot patterns and trends easily.	**Animals, including humans** **Plants**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:***

			Gather, record and classify
Electricity (physics)	• To know common appliances that run on electricity, identify their power source and how to be safe with electricity. • To know how to construct a simple series electrical circuit, identifying and name its basic parts, including cells, wires, bulbs, switches and buzzers. • To know when a bulb will or will not light up in a circuit. • To know that a switch opens and closes a simple series circuit. • To know that a conductor is a material which allows energy to flow through it, such as metal and that an insulator does not allow energy to flow through it. •	**Electricity**	***Scientific enquiry skills:*** Pattern seeking ***Working Scientifically:*** Gather, record and classify Answer questions and make conclusions Ask questions
Energy- sustainability	• To know that it is important to reduce our energy usage as this means we burn less oil, coal and natural gas. • To know that turning off lights and appliances and unplugging electronic equipment helps to reduce our energy usage.	**Sustainability**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Answer questions and make conclusions Gather, record and classify
Data collection C	• To know that data can be used to observe how something changes over time • To know that data can be used to make conclusions and suggest further questions.	**Animals, including humans** **Plants**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Observation over time Gather, record and classify Present findings
Habitats (biology)	• To know that there are lots of different habitats (including fields, woodlands, urban areas and aquatic habitats)	**Habitats**	***Scientific enquiry skills:*** Research ***Working Scientifically:***

	• To know how to use and create classification keys to group, identify and name living things. • To know that environments can change and that this can sometimes pose dangers to living things.		Ask questions Gather, record and classify Present findings
Deforestation- sustainability	• To know that humans are responsible for the destruction of habitats through deforestation. • To know that when habitats are destroyed, the plants and animals that live there, become at risk of becoming endangered or extinct.	**Sustainability**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Ask questions Present findings
The digestive system (biology)	• To know some parts of the digestive system and explain how food travels through and is broken down to be used for energy • To know that humans have different types of teeth- incisors, canines, premolars, and molars. • To know that carnivores, herbivores and omnivores have different shaped teeth according to their diet.	**Animals, including humans**	***Scientific enquiry skills:*** Research ***Working Scientifically:*** Make observations Ask questions Plan Present findings Gather, record and classify
Food chains (biology)	• To know how to construct and interpret a variety of food chains. • To know that a food chain consists of producers, consumers, predators and prey. • To know that humans can affect food chains through farming, destroying habitats, hunting and overfishing.	**Animals, including humans**	***Scientific enquiry skills:*** Research ***Working Scientifically:*** Answer questions and make conclusions Gather, record and classify Present findings

YEAR 5			
Forces (physics)	• To know that friction can produce heat and can cause some materials to wear away. • To know that air resistance is a friction force between the air and a moving object. • To know that water resistance is a type of friction force between the liquid and a moving object. • To know that gravity is a non-contact force that pulls an object to the centre of the Earth (or other planet).	**Forces**	***Scientific enquiry skills:*** Fair test ***Working Scientifically:*** Present findings Plan Take measurements Answer questions and make conclusions
Space (physics)	• To know that the Sun is at the centre of our solar system and our solar system is a collection of 8 planets, moons and the Sun. • To know how the movement of the Earth and other planets is relative to the sun in the solar system. • To know how the movement of the moon relates to the Earth. • To understand how the Earth's rotation causes day and • night and the apparent movement of the Sun across the sky.	**Earth and space**	***Scientific enquiry skills:*** Research ***Working Scientifically:*** Answer questions and make conclusions Present findings Gather, record and classify
Sustainability-Global warming	• To know that global warming is the gradual increase in the Earth's temperature. • To know that climate change is the long-term changes in the temperature and weather patterns of the Earth.	**Sustainability Climate**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Answer questions and make conclusions Gather, record and classify

Properties of materials (chemistry)	• Compare and group together everyday materials based on 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.	**Materials**	***Scientific enquiry skills:*** Comparative test ***Working Scientifically:*** Gather, record and classify Plan Take measurements Evaluate Answer questions and make conclusions
Animals including humans (biology)	• To know that the human life cycle has 6 main stages- foetus, baby, child, adolescent, adult, elderly adult. • To know that puberty is the process that prepares humans for reproduction, and it causes physical and emotional changes.	**Animals, including humans**	***Scientific enquiry skills:*** Pattern seeking ***Working Scientifically:*** Ask questions Plan Gather, record and classify Answer questions and make conclusions Present findings
Life cycles (biology)	• To know that the life cycles of a mammal, an amphibian, an insect and a bird are different to each other and to describe some of these differences.	**Animals, including humans**	***Scientific enquiry skills:*** Research ***Working Scientifically:*** Present findings Gather, record and classify
Reproduction A (biology)	• To know that sexual reproduction requires two parents, whereas asexual reproduction only requires one parent. • To know that plants reproduce sexually through pollination. • To know that there are female parts of a flowering plant (stigma, style and ovary) and male parts of a flowing plant (stamen, anther, filament).	**Plants** **Animals, including humans**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Present findings Gather, record and classify Answer questions and make conclusions Plan

			Take measurements
Reversible and irreversible changes (chemistry)	• To know that some materials will dissolve in a liquid to form a solution • To know that a soluble substance can dissolve in a liquid, but an insoluble substance cannot. • To know how mixtures can be separated through filtering/sieving and evaporation. • To know that some changes can be reversed such as dissolving, mixing and changes of state. • To know that an irreversible change is when a change cannot be undone to get the same substances back.	**States of matter**	***Scientific enquiry skills:*** Identifying, grouping and classifying ***Working Scientifically:*** Evaluate Gather, record and classify Take measurements Present findings Evaluate
Plastic pollution- sustainability	• To know that plastics are designed to last a long time and do not break down easily. • To know that plastics can end up in landfill sites as well as the oceans which has an impact on animal and plant life.	**Sustainability**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Answer questions and make conclusions Present findings
Reproduction B (biology)	• Describe the life process of reproduction in some plants. • (follow up observations and data from Reproduction A)	**Plants**	***Scientific enquiry skills:*** Observation over time ***Working Scientifically:*** Evaluate
YEAR 6			
Living Things & Their Habitats (biology)	• To know that a living organism moves, reproduces, grows, and excretes. • To know characteristics of vertebrates/invertebrates and how to classify organisms into broad groups according to observable characteristics. • Microorganisms (such as bacteria, viruses and fungi) can be classified based on their features such as shape. • To know how organisms are classified using the Linnean system and know why scientists such as Carl Linnaeus are so significant.	**Animals, including humans** **Habitats**	***Scientific enquiry skills:*** Identifying, grouping and classifying Observation over time ***Working Scientifically:*** Answer questions and make conclusions Gather, record and classify data Present findings

Electricity (physics)	• To know how to use recognised symbols when representing a simple circuit in a diagram. • To know that when a circuit is incomplete, there may be a break in the wires, a switch may be open, or there may be an issue with the cell. • To give reasons for variations in how components function including brightness of a bulb/loudness of buzzers etc. • To know that the voltage of a circuit can be changed and how this affects bulb brightness (or buzzer volume).	**Electricity**	***Scientific enquiry skills:*** Fair test ***Working Scientifically:*** Gather, record and classify data Present findings Plan Take measurements Evaluate
Renewable energy **Sustainability**	• To know that fossil fuels are non-renewable energy sources which means that they will eventually run out. • To know that solar and wind power are renewable energy sources which means that they will not run out. • To know that renewable energy sources can limit the impact of global warming.	**Sustainability**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Answer questions and make conclusions Present findings
Light (physics)	• To know that light travels in straight lines • To know that light travels from a light source to an object and then reflects into our eyes. • To know that shadows have the same shape as the • objects that cast them because of light travelling in straight lines.	**Light**	***Scientific enquiry skills:*** Fair test ***Working Scientifically:*** Answer questions and make conclusions Gather, record and classify data Plan Take measurements
Light pollution (sustainability)	• To know that there are ways to reduce our light emissions e.g. turn off lights and devices	**sustainability**	***Scientific enquiry skills:*** Sustainability ***Working Scientifically:*** Answer questions and make conclusions Present findings

The Circulatory system (biology)	• To know that the circulatory system moves blood around the body and is made up of the heart, blood vessels (including arteries and veins) and blood. • To know that blood transports nutrients and oxygen to all parts of the body and takes waste such as carbon dioxide away. •	**Animals, including humans**	***Scientific enquiry skills:*** Research ***Working Scientifically:*** Ask questions Answer questions and make conclusions Make observations Present findings Evaluate
Diet, drugs and lifestyle (biology)	• To know the impact of diet, exercise and drugs on the way their bodies function.	**Animals, including humans**	***Scientific enquiry skills:*** Fair test ***Working Scientifically:*** Answer questions and make conclusions Plan Take measurements Evaluate
Variation (biology)	• To know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • To know that characteristics, which are the features of an organism, are passed onto offspring and this is called inheritance.	**Animals, including humans**	***Scientific enquiry skills:*** Pattern seeking ***Working Scientifically:*** Gather, record and classify data
Adaptations (biology)	• To know that adaptations are characteristics which improve an animal's chances of survival in a habitat • To know that evolution, over a long period of time, allows animals and plants to better adapt to their environment • To know that Charles Dawin completed research on adaptations, and this led to his Theory of Evolution	**Animals, including humans**	***Scientific enquiry skills:*** Pattern seeking ***Working Scientifically:*** Answer questions and make conclusions Plan Present findings
Fossils (biology)	• To know that fossils provide information about living things that inhabited the Earth millions of years ago.	**Rocks**	***Scientific enquiry skills:*** Research

	• To know that Mary Anning was a famous palaeontologist who discovered fossils during the 1800s.		***Working Scientifically:*** Answer questions and make conclusions Present findings

Progression of Working Scientifically Disciplinary Knowledge

Text in **bold** - direct from national curriculum

Ask Questions

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Planning is not explicitly mentioned in the KS1 curriculum however, if 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

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Carry out simple tests using non-standard measurements when appropriate.	**Perform simple tests** using standard units when appropriate.	Perform tests and simple experiments and take measurements using standard units.	**Take accurate measurements using standard units, using a range of equipment, including**	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,**

			thermometers and data loggers.		**taking repeat readings when appropriate.**
Gather, record and classify data					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Gather and record simple data. Sort objects and living things into groups based on simple properties.	**Gather and record data to help in answering questions. Identifying and classifying.**	Recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables.	**Gather, record and classify data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.**	Record data using scientific diagrams and labels, classification keys, tables, bar and line graphs.	**Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.**
Present findings					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Explain what they found out to an adult or a partner. (non-statutory)	**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 and 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.**