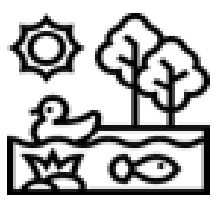
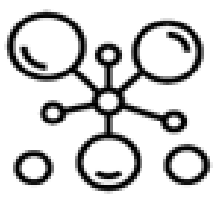
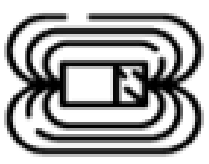
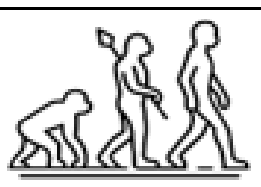
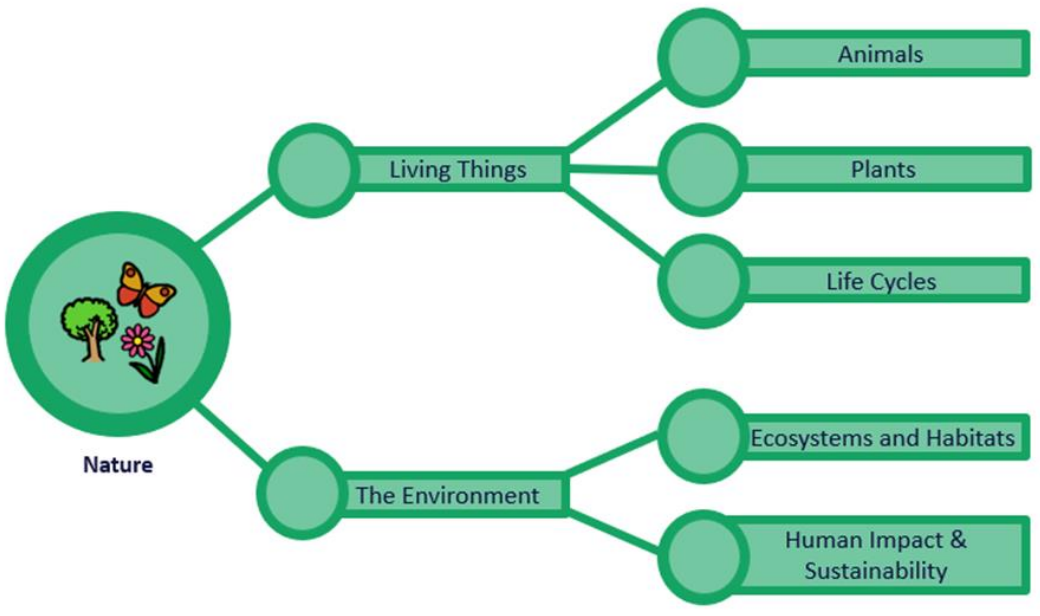
Science Curriculum Map L1 - U4

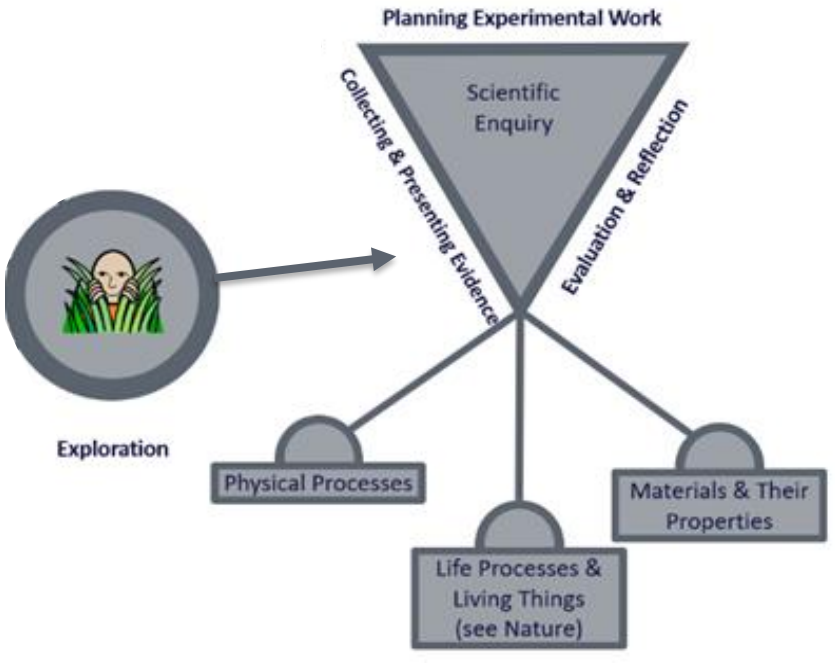
The intent of Science is to inspire curiosity, provoke thinking and investigate questions. We also believe that linking creative and scientific thinking is a fundamental attribute for preparing for adulthood and lifelong learning. Our learners love the practical element of the subject, which allows them to understand scientific concepts with greater ease and enables them to see its relevance to their own lives and future aspirations. Pupils develop their knowledge and skills through the grades and steps driven by topic every half term that uses the 4 corners of Engage, Develop, innovate and Express to embed learning.

Within science, the following key foci have been identified and mapped out over the course of the curriculum . . .

Cells		All organisms are constituted of one or more cells. Organisms are organised on a cellular basis. All the basic functions of life are the result of what happens inside the cells which makeup an organism. Growth is the result of multiple divisions
Energy		Many processes or events involve change and require energy to make them happen. Energy can be transferred from one body to another in various ways. In these processes some energy is changed to a form that is less easy to use. Energy cannot be created or destroyed. Energy obtained from fossil fuels is no longer available in a convenient form for use.
Earth and Space		The composition of the Earth and its atmosphere and the processes occurring within them to shape the Earth's surface and its climate. Our solar system is a very small part of the one of millions of galaxies in the Universe
Ecosystems		Organisms require a supply of energy and materials for which they are often dependent on or in completion with other organisms.
Particles		All material in the universe is made of very small particles. Atoms are the building blocks of all materials, living and non-living. The behaviour of atoms explains the properties of different materials. Chemical reactions involve the rearrangement of atoms in substances to form new substances. Each atom has a nucleus containing neutrons and protons surrounded by electrons. The opposite electric charge of protons and electrons attract each other, keeping atoms together and accounting for the formation of some compounds
Fields and Lightwaves		Objects can affect other objects at a distance, through light and sound, effect of radiation travelling out from the source to the receiver.
Evolution		The diversity of organisms living and extinct is the result of evolution.

Science creates cross-curricular links through the 'nature' and 'exploration' big ideas.





By prioritising safeguarding as a thread throughout the science curriculum, this ensures that the skills and knowledge that children require to keep themselves safe is consistently taught.

Safeguarding Link

Entry Level Science: Chemistry, Module 3 (C3) Elements, mixtures and compounds	Entry Level Science: Biology, Module 1 (B1) The Human Body	Entry Level Science: Biology, Module 1 (B1) The Human Body
Entry Level Science: Chemistry, Module 3 (C3) Elements, mixtures and compounds	Entry Level Science: Physics, Module 6 (P6) Electricity, magnetism and wave	Entry Level Science: Physics, Module 6 (P6) Electricity, magnetism and wave
Projects for the half term: Are all liquids runny? Is custard a liquid?	Projects for the half term: Lights Electrical amenities Smoke signals Conductors and insulators	Projects for the half term: How do smells get up your nose? What is spit for? How does toothpaste protect teeth?
Projects for the half term: Did the Romans use toilet paper?	Projects for the half term: What conducts electricity? Can you make a circuit from play dough? How do plugs work? Can we block sound? How can we change a sound? How far can sound travel?	Projects for the half term: How far can an arrow travel? What are catapults for?
Physics and Biology Activities to be covered this topic include 'Rock Hunt', 'Geologist Visit', 'Investigating rock properties' and 'Earth's layers'.	Physics and Chemistry Activities to be covered this topic include 'Playground Visit', Sorting and Classifying', 'Slip and Slide', 'Magnetic Object Hunt', 'Investigating Magnets', 'North or South?', 'Attract or Repel?', 'Cleaning Pennies', 'Time for a fair test', 'Magnetic Metals' and 'Quiz Time'.	Light and dark; Sources and reflectors; Shadows; Sun safety; Working scientifically Students will complete the following 3 projects over the course of the half term, with the aim of answering the following wicked questions: Why do Shadows change? What are sunglasses for? Why do cat's eyes glow in the dark?
Biology Activities to be covered this topic 'Exploring Foods', 'Bouncy Eggs' and 'Healthy Lifestyle'.	Biology Activities to be covered this topic include 'Villains or Superheroes?', 'Investigating Senses', 'Super Skills' and 'What happens if?'.	Physics and Chemistry Introduction to Secondary Science ('Science is Magic'). Introduce lab etiquette and the concept of a scientific write up, through an array of experiments and STEAM projects.
Food chains; Fossils; Plant parts and functions; Water transportation in plants; Skeletal systems; Working scientifically	Speed, distance and friction; how fast can a bouncy ball travel?	Lifecycles of Mammals, Amphibians, Insects and Birds; Working Scientifically
Sound; Working scientifically	Everyday materials; Working scientifically	Chemistry Chemical Reactions Everyday materials; Working scientifically
Biology lifecycles of Mammals, Amphibians, Insects and Birds; Working Scientifically	Biology Activities to be covered this topic include 'Bacterial Growth', 'Herbal Remedies', 'Life Cycles' and 'Pet Rats'.	Biology Living Things and their Habitats
Physics Activities to be covered this topic include 'What makes the loudest sound?'	Chemistry and Biology Activities to be covered this topic include 'Local Community Walk', 'Natural and man-made materials' and 'Journeys to school'.	Biology and Chemistry Activities to be covered this topic include 'Investigating Materials', 'Floating Boats' and 'Abandon Ship'
Activities to be covered this topic include 'Meet dinosaurs', 'Reptile Day', 'How Big?', 'Dino dentist!', 'Same or different?'	Exploring and using media and materials. Activities to be covered include 'I want to be a Lion' and 'African Landscapes'.	Exploring and using media and materials; Being imaginative
Exploring and using media and materials. Activities to be covered include 'Building Bridges' and 'Sweet Treats'.	Exploring and using media and materials; Being imaginative	Exploring and using media and materials. Activities to be covered include 'Friendship Colours', 'The Gathering Drum' and 'Hearts'.

U2/3/4

U1

L4/5

L3

L2

L1