Y4 Science Overview 2023-2024

Science Activity	Building Skills and Disciplinary Knowledge	Approaches to Developing Skills and Disciplinary Knowledge	Building Substantive Knowledge and Understanding	Approaches to Developing Substantive Knowledge and Understanding	Curricula Materials	Assessed through (T1 T2 T3) Scientific Enquiry Planning & Presenting Critically Observing/ Classifying/ Evaluating Scientific Knowledge		
Scientific Enquiry	• Can raise questions about the world around them • Can talk about criteria for grouping, sorting and classifying; and use simple keys • Begin to look at naturally occurring patterns and relationships and decide what data to collect to identify them • Can suggest simple ideas and suggest how to find things out • Can make and record a prediction before testing • Can explain a fair test and explain why it was fair • Can make up a simple fair test to make comparisons	• Create a topic Mind Map: evidence recall of prior knowledge and skills; evidence short-term recall of learnt skills; evidence questions to explore • Introduce and model practical activities involving skills of investigating, contrasting, analysing, recording • Make observations • Review of investigations against criteria • Out of the class room learning experiences to support enquiry	• Recognise that living things can be grouped in a variety of ways (plants, vertebrates, invertebrates • Can compare the classification of common plants and animals found in other places (under the sea, prehistoric) • Can name and group a variety of living things based on feeding patterns (producer, consumer, predator, prey, herbivore, carnivore, omnivore) • To recognise the environments can change and this can sometimes pose a danger to living things • Can identify, name and describe the basic parts of the human digestive system • Can identify the simple function of different types of human teeth • Can compare the teeth of herbivores and carnivores • Can compare and group materials together, according to whether they are solids, liquids or gases • Can explain what happens to materials when they are heated or cooled, and measure or research the temperature at which this happens • Can identify the part played by evaporation and condensation in the water cycle and understand that the temperature affects the rate of evaporation • Can identify how sounds are made, associating some of them with something vibrating • Can describe and explain how a sound a sound travels from a source to the ear • Can find patterns between the volume of a sound and the strength of the vibrations that produced it • Can explain what happens to the sound as it travels away from its source • Can explain how you could change the pitch of the sound	• Opportunities to recall prior learning • Teacher led presentations • Opportunities for research modelled by Teacher • Opportunities for children to act upon their own curiosity and research their own questions • Opportunities for group work and collaboration to research and investigate • Research opportunities through home/school learning projects • Planned opportunities for use of and access to varied resources • School visits to places and organisations related to topic and learning • Exploration opportunities for pupils to discover the methods that scientists use to answer questions; the different apparatus and techniques, including measurement that scientists use; the different data analysis used by scientists; and how science uses evidence to develop explanations	TERM1: Animals including Humans Living Things and their habitats	Most children will be able to... (working at)	Some children will not yet be able to... (working towards)	Some children are confidently able to... (exceeding)
Planning and Presenting	• Can set up a simple fair test to make comparisons • Can plan a fair test and isolate variables and explain why it was fair and explain why variables have been isolated • Can suggest improvements and predictions • Can decide which information needs to be collected and decide which is the best way for collecting it • Can use their finding to draw a simple conclusion • Can take measurements using different equipment and units of measure and record what they have found in a range of ways • Can make accurate measurements using standard units • Can explain their findings in different ways • Can use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences	• Teacher led lessons demonstrating skills of investigating, recording, analysing • Modelling use of scientific vocabulary in comparisons, contrasts, investigations • To use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences • Planned practical activities to engage children in above activities						
Critically Observing/ Classification/ Evaluating	• Can find patterns in their evidence or measurements • Can make a prediction based on something they have found • Can record and present what they have found using scientific language, drawings, labelled diagrams, bar charts and tables • Can give reasons for how they have classified using their characteristics • Can, with support, identify new questions arising from data, making predictions within or beyond the data they have collected and finding ways to improve what they have already done	• Observing changes over time • Investigating habitats and environments • Learning to compare and contrast • Talking about what they have learnt and observed • Begin to record data			TERM2: States of Matter Sound			

Scientific Knowledge	• Can understand and use the correct scientific vocabulary related to the topic • Can observe, comment and ask questions about the world around them • Can connect ideas from previous learning and experiences • Can learn about change through observations and practical experiences, activities and over time • Can begin to set up an investigation • Is beginning to gain an understanding of fair testing and variables • Can know where to access information (books, internet sources)	• Planned opportunities to observe, investigate and comment using scientific vocabulary based on topics and experiences • Opportunities for children research their own line of enquiry through research and investigations • To understand when and how secondary sources might help them to answer questions that cannot be answered through practical investigations	• Can investigate how different materials can affect the pitch and volume of sounds • Can explain how electricity is useful • Can construct a simple circuit • Can explain what a what a conductor is and test materials for conductivity • Can explain closed and open circuits • Can construct a circuit with a switch • Can recognise some common conductors and insulators					
Maths links	• Can use labels, diagrams and charts to record their observations • Can compare objects, plants, animals by size, height and weight • Can take accurate measurements using standard units, using a range of equipment, including thermometers • Can accurately interpret these measurements	• Planned opportunities depending on topic such as deciding how to present findings via tally counting, graphs, and data analysis or measures			**TERM3:** Electricity Living Things and their Habitats: Help our Habitats!			
SMSC	• Can work with others of different religious, ethnic and socioeconomic backgrounds, according to given briefs of the Y4 science curriculum • Can resolve conflicts and differing opinions should these arise • Can reflect on choices • Can investigate and offer views on ethical issues in topics studied • Can show willingness to explore and understand scientific beliefs from a variety of cultural backgrounds • Can study science, and investigate with a team knowledge of the wider world, including interviewing with older people, archaeologists, and museum and exhibition personnel	• Plan visits, opportunities to investigate with a group or partner • Plan visits in the local environment Visit Parks, Museums, laboratories						