



St. Mary's Catholic Primary School

Skills and Knowledge Progression for Science – Scientific Enquiry

SCIENCE	RECEPTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	Upper KS2 (Y5 and Y6)		
QUESTION	Ask simple questions about immediate environment.	Ask questions and know some can be answered using scientific enquiry.		Identify scientific questions. ie can be investigated through scientific enquiry.		Raise scientific questions and hypothesise		
SCIENTIFIC ENQUIRY	OBSERVE	Qualitative Talk about similarities and differences.	Qualitative and Simple Quantitative		Qualitative and Quantitative		Qualitative and Quantitative	
			Observe change over time. Use Senses/ equipment.	Measure change over time e.g. plant growth. Select equipment	Systematic/ careful observations. Use bar charts, pictograms, tables.	Accurate measurements. Use time graphs and other graphs.	Accurate/ precise measurements, Diagrams, tables, bar and line graphs.	Take repeat readings when appropriate. Scatter graphs.
	CLASSIFY and FIND PATTERNS	Talk and Sort Use simple scientific criteria.	Identify and Classify		Classify and Find Patterns		Classify and Find Patterns	
			e.g. familiar plants, animals, materials Compare and contrast	e.g. living/ dead/ never alive; materials Compare differences	Classify animals/ materials. Link two variables e.g. <i>the closer the magnet the bigger the force.</i>	Use simple classification keys. Link two variables e.g. <i>the more cells in a circuit, the brighter the bulb.</i>	Use complex classification keys. Identify causal relationships.	Develop classification keys. Identify evidence that supports/ refutes causal relationship.
	CONTROL INVESTIGATIONS: comparative and fair testing	Explore objects/ materials/ living things/ resources designed to model scientific processes.	Simple comparative tests		Comparative and fair tests		Design own comparative and fair tests	
			e.g. <i>What is the best material for an umbrella?</i>	e.g. <i>What if plants do not get light and water?</i>	Predict. Fair tests e.g. <i>How does distance affect magnet strength?</i>	Predict. Language of independent and control variable.	Identify when and how to use tests. Recognise and control variables. Make predictions based on previous test results.	
RESEARCH	Listen and respond to stories about scientific processes/ events/ objects.	Find information using given sources. e.g. <i>animals.</i>	Select information from a range of given sources.	Research using given sources. e.g. <i>research different food groups and how they keep us healthy</i>	Select information to support findings. e.g. <i>research animals</i>	Explore relevant information by using a wide range of secondary sources.		
						Explore how scientific ideas have developed over time.	Identify evidence that has been used to support or refute ideas.	
MODEL	Concrete context. Create drawings and models of their environment	Concrete context Draw diagrams e.g. <i>parts of plants/ the body.</i>	Explore and create drawings and physical models e.g. <i>habitats.</i>	Abstract contexts e.g. processes and phenomena such as forces/ light. Use labelled diagrams and drawings and physical models.	Abstract contexts e.g. processes and phenomena such as sound/ electricity. Create labelled diagrams and drawings and physical models.	Abstract contexts. Evaluate diagrams/ models e.g. states of matter; solar system.	Abstract contexts. Create own versions of models. e.g. circulatory system; light.	



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CONCLUDE	Explain simple phenomena: How? Why?	Describe what has happened or been observed.	Explain why a simple observation occurred. Evaluate the effectiveness of observations.	Explain an observation or an event in scientific terms. Distinguish between what has been observed and why it happened. Begin to link evidence from secondary sources as well as primary. Suggest improvements.	Evaluate original hypothesis against observed evidence and reach appropriate conclusions. Identify causal relationships. Begin to identify how reliable the data is.
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