Featherstone Primary School: Progression and Sequencing within Science

Aspire, Believe, Succeed

Intent: Albert Einstein said, "The important thing is not to stop questioning; curiosity has its own reason for existing." Through our teaching and learning of Science, children develop a sense of excitement and curiosity about natural phenomena and whilst there are often answers in Science, this knowledge is only as good as the latest, accepted theory and so children are encouraged to question evidence and discoveries from the scientific greats of the past and present.
During learning, the knowledge, methods, processes and uses of Science are taught and learnt in a variety of contexts. We apply constructivist theory to many areas of our Curriculum and especially Science, acknowledging that children are not 'empty vessels' that come to school to be 'filled' with 'real, correct Science.' Children question and often lead the line of scientific enquiry. Ultimately, learning is an active, not passive process, and teachers facilitate this learning, helping children to deepen their scientific understanding.

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Content Knowledge (refer to NC)		Plants Animals incl. humans Everyday materials Seasonal changes	Living things and their habitats Plants Animals incl. humans Everyday materials	Plants Animals incl. humans Rocks Light Forces and magnets	Living things and their habitats Animals incl. humans States of Matter Sound Electricity	Living things and their habitats Animals incl. humans Properties and changes in materials Earth and Space Forces	Living things and their habitats Animals incl. humans Evolution and inheritance Light Electricity
Skills	**Planning a scientific investigation**	With support, identify whole-class questions that can be tested Perform simple tests Observe changes over time	Identify questions that can be tested Identify that questions can be answered in a variety of ways Perform simple tests Observe changes over time, noticing the patterns and relationships	Identify variables: independent, dependent and controlled Choose a question to answer in a scientific enquiry based on the above Conduct a range of scientific enquiries with scaffolded support/investigation frames Make predictions	Identify and suggest variables: independent, dependent and controlled. Suggest a question to answer in a scientific enquiry based on the above Conduct a range of scientific enquiries with some support by listing a teacher-led method and equipment Make predictions and give a reason	Identify and list multiple variables: independent, dependent and controlled. Suggest and refine a question to answer in a scientific enquiry based on the above Conduct a range of scientific enquiries by suggesting a method and equipment Make and fully justify predictions	Identify and decide variables: independent, dependent and controlled. Choose the most appropriate type of scientific enquiry based on these Design a range of scientific enquiries: fair tests, pattern seeking, observations over time, identifying and classifying and research Make and fully justify predictions Suggest risks and safety advice
	Working with data (create, collect, analyse)	Discuss method and findings Use senses and simple equipment to gather data Present data in templates provided	Identify relevant things to measure to answer the question Use appropriate non-standard measurements (i.e. cubes) and a greater range of equipment to gather data Record simple data in a variety of ways: drawings, photographs, labelled diagrams, orally or in simple prepared tables or charts Suggest answers to scientific questions	Take measurements using a range of scientific equipment Collect and present scientific data with diagrams and labels, tables and bar charts Use this to answer scientific enquiry questions Make a simple conclusion about what the test shows	Take measurements using a range of scientific equipment using increasing accuracy Identify patterns Collect and accurately/neatly present scientific data with diagrams and labels, tables and bar charts Compare conclusion to prediction Identify anomalies	Take accurate and more complex measurements using a range of scientific equipment Identify patterns and suggest a reason why it may have occurred Collect and accurately/neatly present scientific data in a range of ways: scientific diagrams and labels, tables, bar charts and line graphs Draw conclusions to prove ideas Identify and explain anomalies	Choose the most appropriate format to accurately collect and present data, with increasing complexity: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Identify and fully explain patterns Draw conclusions to: refute or prove ideas Identify and explain anomalies
	Evaluation of a scientific investigation	Give ideas about whether or not the scientific question has been answered	State one good thing about an investigation and one bad thing about the investigation	Identify things that help to make scientific data valid	Explain what helps to make scientific data valid Understand how/why accuracy is important in collecting data (i.e. reduction in the chance of an anomaly)	Evaluate why or why not a test has been fair, accurate or reliable by discussing what could be done differently/better	Increase validity of results and prevent anomalies through: • Justifying the choice of the equipment to support data collection • Repeating observations • Suggesting alternative investigations to yield similar results