SBSP PROGRESSION OF COMPONENT KNOWLEDGE THROUGH SCIENCE UNITS

SCIENTIFIC ENQUIRY

Year 3 NC links:

- Asking relevant questions and using different types of scientific enquiries to answer them
- Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units
- Using a range of equipment, including thermometers and data loggers
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables
- Identifying differences, similarities or changes related to simple scientific ideas and processes
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- Setting up simple practical enquiries and comparative and fair tests

Year 3 Component Knowledge

- Give a prediction to a scientific question
- Pose a scientific question and give a prediction
- Design a scientific investigation with more than one variable and give a plausible prediction
- Take careful measurements and record results in a table
- Take careful, systematic measurements and record results in a table and, with support, use data to draw a graph
- Use data collected from an investigation to produce a graph to show results
- Write a method for a scientific investigation
- Write a comprehensive method for a scientific investigation and use it to carry out practical work
- Evaluate the effectiveness of the method after the practical investigation has been carried out
- Explain what happened during an investigation
- Explain what happened during an investigation and give scientific evidence to support the findings
- Explain scientifically the results of an investigation and suggest further lines of enquiry that could be tested
- Understand what a control test is
- Understand what a control test is and suggest variables to compare
- Understand what a control test is and carry out a fair test, varying only one aspect at a time

Working Scientifically Component Knowledge

- Asking relevant questions and using different types of scientific enquiries to answer them
- Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units
- Using a range of equipment, including thermometers and data loggers
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables
- Identifying differences, similarities or changes related to simple scientific ideas and processes
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- Setting up simple practical enquiries and comparative and fair tests

Key Vocabulary

- solar, renewable energy, scientific investigation, prediction, plausible
- record, results, graph, data, table
- acid, practical, method, alkali, pH Scale
- evidence, compare, enquiry, conclusion, explanation
- baking, variable, control experiment, fair test, measurement

KS3 NC links:

Ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experiences. Make predictions using scientific knowledge and understanding. Select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate. Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety. Make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements. Apply mathematical concepts and calculate results. Present observations and data using appropriate methods, including tables and graphs. Interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions. Present reasoned explanations, including explaining data in relation to predictions and hypotheses. Evaluate data, showing awareness of potential sources of random and systematic error. Identify further questions arising from their results.