



## Science Inquiry Skills (Year 8/9) - 2012

### Description

Concepts such as fair test and variables will be covered in the Thinking Science lessons. Planning and conducting investigations will occur throughout each unit. This short unit aims to supplement the content covered in the Thinking Science lessons and previous investigations. These include: using basic laboratory equipment and following the safety rules, measuring, recording and manipulating data. The students will also be taught how to write up experiments and investigations in the **Practical Report** book. SIS is embedded into all areas of the Science curriculum. This unit seeks to develop the basics at the start of the year from which students will be able to apply logical processes into their investigations. Scientific Literacy is developed through the use of a faculty produced aide memoir, and displaying the key words in each laboratory.

### Planning and Conducting

1. Types of investigation.
2. Formulate hypotheses or questions suitable for testing\* (Science)
3. Identify variables: independent, dependent and controlled.
4. Design an investigation.
5. Plan for safety.
6. Selection and use of accurate techniques.
7. How to record data and make observations.
8. The value of repeat trials.

### Processing and analysing data and information

9. Collecting data to use as evidence.
10. Graphing to support an explanation and to look for relationships.
11. Critically analysing data in order to make a relevant conclusion and to evaluate a method.

### Evaluate

12. Evaluate the reliability of the data
13. Compare observations with secondary sources such as other groups and "true values".
14. Reflect on the investigation, including whether a test was fair or not.
15. Suggest improvements to the methods used to investigate a question or solve a problem and make recommendations for further investigations.

### Communication

16. Communicate using scientific language, representations and evidence-based arguments using a range of mediums and collaborate with others as part of an investigation.
17. Present findings in an appropriate form.



## **ACARA elaborations**

1. identify and construct questions and problems that they can investigate scientifically
2. consider safety and ethics when planning investigations, including designing field or experimental methods
3. identify variables to be changed, measured and controlled
4. construct representations of their data to reveal and analyse patterns and trends, and use these when justifying their conclusions
5. explain how modifications to methods could improve the quality of their data
6. apply their own scientific knowledge and investigation findings to evaluate claims made by others
7. use appropriate language and representations to communicate science ideas, methods and findings in a range of text types

**Assessments: Homework      100%**