**Scientific Studies**

When undertaking their investigations, students may apply scientific methods and/or engineering design processes. Teachers may find the following framework helpful when guiding students through the engineering design process.

**Steps in the Engineering Design Process**

Identify the problem, need or opportunity

Describe the challenge

Related scientific concepts

Identify the limitations

**IAE 3**

**IAE 4**

Improve

Evaluate the solution and identify possible design improvements

Create

Construct a prototype

**IAE 2**

Design and test a solution or model

Use innovation and imagination to propose a variety of solutions

Consider factors such as size, materials, cost, etc

Select a solution / model to test

Determine success criteria for prototype (in relation to science) and testing process to measure its suitability

Justify design and testing process

Research and Explore

What have others done?

What materials are available?

**IAE 1**

Test

Conduct scientific testing of prototype and present data appropriately

Review

Analyse primary data in relation to scientific concepts and success criteria