**Scientific Studies**

**Assessment Type 1: Inquiry Folio**

**Individual Inquiry Design Proposal**

In readiness for their external assessment, students individually prepare a proposal for a practical scientific investigation for which the outcome is uncertain. The proposal will form the basis of Assessment Type 3: Individual Inquiry. Students may use a scientific method or engineering design process to obtain primary data. The investigation should be linked to the focus of the program that the students are undertaking.

The design proposal includes:

* a statement of an investigable question or hypothesis, problem, need, or opportunity depending on whether the student chooses to use a scientific method or engineering design processes
* a deconstruction of the problem
* an appropriate method designed to obtain primary data
* a justification of the plan of action

The design proposal should be a maximum of 4 sides of an A4 page if written or diagrammatic, or the equivalent in multimodal form. If the design proposal is an oral presentation, it should be recorded and available for moderation.

The Investigation

Ideally, students should investigate something that interests them. It should be connected to the general theme or focus of the teaching program or be an extension of the Collaborative Inquiry. It must be an investigation for which the outcome is uncertain.

Once the area of investigation is determined, students should deconstruct the problem to narrow down their thinking to a specific factor that can be tested or model that can be designed using the engineering process.

*Either*

Scientific Method

If students choose to investigate a problem using a scientific method, they need to:

* state the question to be solved and the hypothesis developed
* deconstruct the problem
* identify the following types of variables and explain how each variable could impact on the results:
* independent
* dependent
* controlled variables. Students should indicate how these variables will be controlled.
* variables that cannot be controlled (and an explanation of why not)
* prepare a method (annotated with reasons to justify the plan of action) that can be used to test the hypothesis. This includes what primary data will be collected and how it will be recorded.

*Or*

Engineering Process

*(see Engineering process framework sheet in Stage 2 Support Materials)*

If students choose to investigate a problem using an engineering design process, they need to:

* describe the challenge
* deconstruct the problem
* identify the limitations
* explain the criteria for success
* list the materials that may be used and reasons for their selection
* prepare a design (annotated with reasons to justify the plan of action) that can be used for the prototype
* outline the proposed testing process. This includes what data will be collected and how it will be recorded.

The assessment of this task provides evidence for specific features IAE1, KA1, and KA4.