**Stage 1 Scientific Studies:**

**Assessment Type 1: Inquiry Folio**

**Science Inquiry Skills – Practical Investigation: Ten-second rule**

When small children drop food onto the ground, they or their parents often pick it up and say ‘10 second rule – it’s safe to eat’.

In this task, you will design an investigation into whether or not this is a safe thing to do. There are many factors which you could consider when thinking about this, but only one of them can be tested.

**Part A**

As a group, you will need to:

* deconstruct the problem to work out what some of the testable factors are
* research how factors could be tested
* consider the possible variables that would need to be controlled when designing an investigation to test any of these factors
* decide on a different factor for each person to investigate.

Each person will record their understanding of the deconstruction to a maximum of 1 single-sided A4 page 10 point font.

**Part B**

*Individually*, you will design an investigation to test the factor that you have been allocated by the group.

In your design, you will need to identify:

* 1. Hypothesis
  2. Variables: one independent variable, one dependent variable, constant variables
  3. Materials and equipment required
  4. Method suitable to test the hypothesis
  5. Blank data table to show the type and amount of data to be collected.

The choices that you make when preparing this design should have reasons to justify the decision that you make. For example, why did you choose particular apparatus, method of testing/measuring?

The design should be a maximum of 1½ single-sided A4 pages 10 point font.

**Part C**

Your group will collaborate to undertake the testing of one hypothesis or proposed solution. The hypothesis to be tested will be decided in consultation with the teacher.

You will individually record the results of the investigation.

**Part D**

Individually, you will:

* Represent and analysis the data
* Evaluate the procedure
* Formulate and justify a conclusion

The representation, analysis, evaluation, and conclusion should be a maximum of 1½ single-sided A4 pages 10 point font.

**Assessment conditions**

Your final submission should be a maximum of 4 pages or the equivalent in multimodal form. Pages should be single-sided A4 with minimum font size 10. Page reduction, such as two A4 pages reduced to fit on one A4 page, is not acceptable

The submissions from all four parts **must** be combined into a single practical report and submitted electronically using the following naming protocol:

*SACE registration number-1STU10-AT1-SIS task 2*

**Assessment Design Criteria**

Your work will be assessed against the following Performance Standards

* Investigation, Analysis, and Evaluation: IAE 1, 2, 3, 4
* Knowledge and Application: KA 2, 4

| - | Investigation, Analysis, and Evaluation | Knowledge and Application |
| --- | --- | --- |
| A | Critically deconstructs a problem and designs a logical and coherent scientific investigation with detailed justification.  Obtains, records, and represents data, using appropriate procedures, conventions, and formats accurately and highly effectively.  Systematically analyses and interprets data and evidence to formulate logical conclusions with detailed justification.  Critically and logically evaluates procedures and their effect on data.  Critically and perceptively evaluates the effectiveness of collaboration and its impact on results/outcomes. | Demonstrates deep and broad knowledge and understanding of a range of science inquiry skills and scientific concepts.  Applies science inquiry skills and scientific concepts highly effectively in new and familiar contexts.  Critically explores and understands in depth the interaction between science and society.  Communicates knowledge and understanding of scientific concepts coherently, with highly effective use of appropriate terms, conventions, and representations. |
| B | Logically deconstructs a problem and designs a well-considered and clear scientific investigation with reasonable justification.  Obtains, records, and represents data, using appropriate procedures, conventions, and formats mostly accurately and effectively.  Logically analyses and interprets data and evidence to formulate suitable conclusions with reasonable justification.  Logically evaluates procedures and their effect on data.  Critically evaluates the effectiveness of collaboration and its impact on results/outcomes. | Demonstrates some depth and breadth of knowledge and understanding of a range of science inquiry skills and scientific concepts.  Applies science inquiry skills and scientific concepts mostly effectively in new and familiar contexts.  Logically explores and understands in some depth the interaction between science and society.  Communicates knowledge and understanding of scientific concepts, with mostly coherent and effective use of appropriate terms, conventions, and representations. |
| C | Deconstructs a problem and designs a considered and generally clear scientific investigation with some justification.  Obtains, records, and represents data, using generally appropriate procedures, conventions, and formats, with some errors but generally accurately and effectively.  Undertakes some analysis and interpretation of data and evidence to formulate generally appropriate conclusions with some justification.  Evaluates procedures and some of their effect on data.  Evaluates the effectiveness of collaboration and its impact on results/outcomes. | Demonstrates knowledge and understanding of a general range of science inquiry skills and scientific concepts.  Applies science inquiry skills and scientific concepts generally effectively in new or familiar contexts.  Explores and understands aspects of the interaction between science and society.  Communicates knowledge and understanding of scientific concepts, with generally effective use of appropriate terms, conventions, and representations. |
| D | Prepares a basic deconstruction of a problem and an outline of a scientific investigation.  Obtains, records, and represents data, using procedures, conventions, and formats inconsistently, with occasional accuracy and effectiveness.  Describes data and undertakes some basic interpretation to formulate a basic conclusion.  Attempts to evaluate procedures or suggest an effect on data.  Attempts to evaluate the effectiveness of collaboration and its impact on results/outcomes. | Demonstrates some basic knowledge and partial understanding of science inquiry skills and scientific concepts.  Applies some science inquiry skills and scientific concepts in familiar contexts.  Partially explores and recognises aspects of the interaction between science and society.  Communicates basic scientific information, using some appropriate terms, conventions, and/or representations. |
| E | Attempts a simple deconstruction of a problem and a procedure for a scientific investigation.  Attempts to use some procedures and record and represent some data, with limited accuracy or effectiveness.  Attempts to describe results and/or interpret data to formulate a basic conclusion.  Acknowledges that procedures affect data.  Acknowledges the effectiveness of collaboration and its impact on results/outcomes. | Demonstrates limited recognition and awareness of science inquiry skills and/or scientific concepts.  Attempts to apply science inquiry skills and/or scientific concepts in familiar contexts.  Attempts to explore and identify an aspect of the interaction between science and society.  Attempts to communicate information about science. |

Performance Standards for Stage 1 Scientific Studies