**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

Performance Standards for Stage 1 Scientific Studies

| - | **Investigation, Analysis, and Evaluation** | **Knowledge and Application** |
| --- | --- | --- |
| **A** | **Critically** deconstructs a problem and designs a **logical**, **coherent**, and **detailed** scientific investigation using a scientific method and/or engineering design process.  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 science 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 using a scientific method and/or engineering design process.  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 science 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 using a scientific method and/or engineering design process.  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 science 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 using a scientific method and/or engineering design process.  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 using a scientific method and/or engineering design process.  **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. |