**Stage 1 Scientific Studies:**

**Assessment Type 1: Inquiry Folio**

**Science as a Human Endeavour Investigation**

Cuts and burns are common wounds in the kitchen. Keeping wounds clean and as germ-free as possible as they heal has been a problem for the medical profession for hundreds of years. New techniques (that are sometimes based on ancient remedies) are always being searched for.

One of these techniques was announced recently (<https://www.sciencealert.com/researchers-have-created-an-antibiotic-spider-silk-that-can-heal-wounds>)

In this task, you will:

* explore one or more of the key concepts of science as a human endeavour in the context of keeping wounds clean and as sterile as possible.
* undertake a search for information (articles, data, or other information) that you could use to support your discussion and conclusions. Record the resources in a reference list
* choose the format of your work: scientific article, expert report, oral presentation, or discuss another alternative with your teacher.

**Part A: Research and Planning**

You may begin your research with the article referred to above or some other source of information about new techniques to keep wounds clean and sterile.

You will then need to consider:

* which key concept(s) of SHE you will explore in this task
* the type of new technique will link well to the SHE focus that you have chosen
* the biological concepts relevant to the technique you have chosen to explore
* future directions of this technique
* what format your report will take

Prepare an outline of your article/report/oral presentation/approved alternative.

Submit your outline to your teacher for advice before you proceed.

Date Due: \_\_\_\_\_\_\_\_\_\_\_\_

**Part B: Science as a Human Endeavour article/report/oral presentation/approved alternative**

This part is completed after Part A has been submitted and feedback provided.

Due Date for Part B: \_\_\_\_\_\_\_\_\_\_\_\_\_

Your article/report/oral presentation/approved alternative should include:

* an introduction to identify the focus of the investigation and the aspect of science as a human endeavour that it links to
* relevant scientific concepts or background
* an explanation of how the focus of the investigation illustrates the interaction between science and society
* a discussion of the potential impact or application of the focus of the investigation, e.g. further development, effect on quality of life, environmental implications, economic impact, intrinsic interest
* a conclusion
* citations and referencing.

**Assessment conditions**

* 3 weeks to complete
* Class time for research and support
* You may submit one draft for feedback. (This does not include the feedback on your outline from Part A.)
* Word Count: maximum of 1000 words for Part B, if written, 6 minutes for an oral presentation, or equivalent if multimodal.
* Your investigation report must be submitted electronically using the following naming protocol:

*SACE registration number-1STU10-AT1-SHE task*

**Assessment Design Criteria**

Your report will be assessed against the following Performance Standards

* Knowledge and Application: KA 1, 3, 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. |