**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

| - | 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