# Sample Assessment Task Year 12

# Investigating Science

## Sample for implementation for Year 12 from Term 4, 2018

### Context:

The basis for study of Module 7: ‘Fact or Fallacy’ is to investigate claims through conducting practical and secondary-sourced investigations and evaluate these based on scientific evidence.

Students carry out a depth study and will be assessed on the report of their findings.

| Task number: 2 | Weighting: 30% | Timing: Due Term 2, Week 6 |
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| Outcomes assessed:A student:* develops and evaluates questions and hypotheses for scientific investigation **INS11/12-1**
* selects and processes appropriate qualitative and quantitative data and information using a range of appropriate media **INS11/12-4**
* analyses and evaluates primary and secondary data and information **INS11/12-5**
* communicates scientific understanding using suitable language and terminology for a specific audience or purpose **INS11/12-7**
* uses evidence-based analysis in a scientific investigation to support or refute a hypothesis **INS12-14**
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| Nature of the taskStudents investigate the claims made by three different products from three different industries:* cosmetic
* food
* pharmaceutical.

The claims about the product are evaluated based on the scientific evidence for the claim or the product.Findings are presented to the class in a format chosen by the student. The presentation should last no more than five minutes. |
| Feedback provided: To inform future learning your feedback will consist of:* an annotated marking guidelines rubric
* annotations on the submitted abstract
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### Marking criteria:

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| Knowledge and understanding**INS12-14** uses evidence-based analysis in a scientific investigation to support or refute a hypothesisStudents:* provide comprehensive evidence of validity of research method
* describe how this work will contribute to the field, including limitations and future directions

Questioning and predicting**INS11/12-1** develops and evaluates questions and hypotheses for scientific investigationStudents:* develop and evaluate inquiry questions and hypotheses to identify a concept that can be investigated scientifically, involving primary and secondary data
* modify questions and hypotheses to reflect new evidence

Processing and analysing data**INS11/12-4** selects and processes appropriate qualitative and quantitative data and information using a range of appropriate mediaStudents:* select qualitative and quantitative data and information and represent them using a range of formats, digital technologies and appropriate media
* apply quantitative processes where appropriate

**INS11/12-5** analyses and evaluates primary and secondary data and informationStudents:* derive trends, patterns and relationships in data and information
* assess error, uncertainty and limitations in data
* assess the relevance, accuracy, validity and reliability of primary and secondary data and suggest improvements to investigations

Communicating**INS11/12-7 c**ommunicates scientific understanding using suitable language and terminology for a specific audience or purpose* select and use suitable forms of digital, visual, written and/or oral forms of communication
* select and apply appropriate scientific notations, nomenclature and scientific language to communicate in a variety of contexts
* construct evidence-based arguments and engage in peer feedback to evaluate an argument or conclusion
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##### Marking guidelines:

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| Students: | Range of Marks |
| * describe and evaluate the idea, focus and rationale for this research work, including a detailed hypothesis
* process data in a logical manner to enable clear and concise meaning
* provides a thorough analysis of appropriate quantitative data and report using appropriate media, providing suggestions for additional data for consideration
* explain strengths and weaknesses of claims through thorough analysis of results, including validity and reliability of claims
* presents a logical and well-organised analysis of findings
 | 17-20 |
| * describe and evaluate the idea and focus of this research work, including a hypothesis
* process data in an appropriate manner to enable clear meaning
* provides an analysis of appropriate quantitative data and report using suitable media, providing suggestions for additional resources for consideration
* describe strengths and weaknesses of claims through analysis of results, including validity and reliability of claims
* presents a well-organised analysis of findings
 | 11-16 |
| * describe the focus of this research work, including a hypothesis
* process data to enable clear meaning
* provides a basic analysis of appropriate data and report using suitable media
* identifies strengths and weaknesses of claims stating results, including validity and reliability of claims
* presents a basic analysis of findings
 | 5-10 |
| * states a hypothesis
* present quantitative and qualitative data
* provides a limited analysis of data
* identifies strengths or weaknesses of claims stating results, including validity or reliability of claims
* makes simple statements
 | 1-4 |