# 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 |
| --- | --- | --- |
| 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** | | |
| Nature of the task Students 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 | | |

### Marking criteria:

|  |
| --- |
| Knowledge and understanding **INS12-14** uses evidence-based analysis in a scientific investigation to support or refute a hypothesis  Students:   * 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 investigation  Students:   * 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 media  Students:   * 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 information  Students:   * 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 |

##### Marking guidelines:

|  |  |
| --- | --- |
| 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 |