THE UNIVERSITY OF ADELAIDE AUSTRALIA | Chemistry Curriculum and Methodology B

Summative Task: Investigations Folio - Deconstruct and Design Investigation

Construct a Deconstruct and Design Investigation appropriate for use in the Stage 2 Chemistry curriculum as an Investigations Folio task.

Select and modify an existing investigation or construct a new investigation. The practical investigation may be derived from those selected for the Topic Teaching Folio.

Assign Assessment Design Criteria which reflect the appropriate selection and application of Specific Features and Performance Standards.

The investigation must be appropriate for use in a secondary school setting, in terms of access to, and safety of the reagents and apparatus.

Consult the required MSDS documentation and undertake a Risk Assessment for the required apparatus and reagents (to be submitted with the final investigation).

Assessment

The constructed Deconstruct and Design Investigation, is to be submitted electronically via MyUni. The digital resource will be shared within the group, with your consent, to extend the resources repository.

Learning Intentions

- Assemble a range of subject-appropriate resources, including online, that engage a diversity of students in their learning.
- Identify and interpret student learning needs and design learning strategies to respond to student diversity.
- Formulate a range of feedback and assessment strategies, including informal and formal, diagnostic, formative, and summative approaches to assess student learning in the subject area and for various curricula, SACE, AC and IB.
- Demonstrate understanding of assessment, moderation and its application to support consistent and comparable judgements of student learning.
- Demonstrate communication skills to present a clear and coherent exposition of knowledge and ideas to a diverse range of students

SACE Subject Outline

As students design and safely carry out investigations, they develop and extend their science inquiry skills by:

- deconstructing the parts of a problem to determine the most appropriate method for investigation
- formulating investigable questions and hypotheses
- selecting and using appropriate equipment, apparatus, and techniques
- identifying variables
- collecting, representing, analysing, and interpreting data
- evaluating procedures and considering their impact on results
- drawing conclusions
- communicating knowledge and understanding of concepts

Practical Investigations

Practical investigations can be conducted *individually* or *collaboratively*.

For each investigation, students present an *individual report*.

Significant change in emphasis
One practical investigation should enable students to investigate a question or hypothesis for which the outcome is uncertain.

Significant change in emphasis
One practical investigation should enable students to design their own procedure and justify their plan of action. This may include providing evidence of how the procedure has been developed. In order to manage the process efficiently, students could *individually* design investigations and then *conduct one of these as a group*, or *design hypothetical investigations* at the end of a practical activity.

Practical Reports

A practical report should include:

- introduction with relevant chemistry concepts, and either a hypothesis and variables, or an investigable question
- materials/apparatus*
- method/procedure that outlines the trials and steps to be taken*
- identification and management of safety and/or ethical risks*
- results*
- analysis of results, identifying trends, and linking results to concepts
- evaluation of procedures and data, and identifying sources of uncertainty
- conclusion, with justification.

The report should be a maximum of **1500 words** if written, or a maximum of **10 minutes** for an oral presentation, or the equivalent in multimodal form.

A summary sheet outlining the deconstruction process (where applicable) should be attached to the report*. Suggested formats for the summary sheet include flow charts, concept maps, tables, or notes.

**The four asterisked sections (materials/apparatus, method/procedure, risks, and results) are excluded from the word count.*

Suggested formats for presentation of a practical investigation report include:

- a written report
- an oral presentation
- a multimodal product.

SACE Board 2018

Assessment Rubric

Assessment Design Criteria	**Fail** **0 < F < 49%**	**Pass** **50 < P < 64%**	**Credit** **65 < C < 74%**	**Distinction** **75 < D < 84%**	**High Distinction** **85 < HD < 100%**	**Weighting**
Safety	Limited acknowledgment of safety requirements and response to them	Some acknowledgement of safety requirements and response to them	Acknowledgment of a range of safety requirements and appropriate response to them	Acknowledgment of a range of appropriate safety requirements and appropriate response to them	Acknowledgment of a range of highly appropriate safety requirements and highly appropriate response to them	5%
Suitability of task design	Constructs an investigation of limited suitability	Constructs a mostly suitable investigation	Constructs a suitable investigation	Constructs a highly suitable investigation	Constructs an insightful and highly suitable investigation	20%
Opportunity for deconstruct and design	Limited deconstruct and design opportunity	Some design and deconstruct opportunity	Opportunity for deconstruct and design	Clear opportunity for deconstruct and design	Clear Opportunity for deconstruct and design at the highest grade band	10%
Identification of Assessment Design Criteria – Allocation of Specific Features and Performance Standards	Allocates appropriate criteria on limited occasions	Allocates appropriate criteria on some occasions	Allocates appropriate criteria on most occasions	Allocates appropriate criteria on all occasions	Allocates highly appropriate criteria on all occasions	15%
					Result:	50%

Comments:	