SCHOOL-DEVELOPED LEARNING AND ASSESSMENT PLAN

**Stage 1 Chemistry (and Biology in a combined program)**

This LAP articulates to Program 5

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| School |  | Teacher(s) |  |
| Other schools using this plan |  |

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| SACESchool Code |  | Year |  | Enrolment Code |  | Program Variant Code (A–W) |
| Stage | Subject Code | No. of Credits (10 or 20) |
|  |  |  |  | **1** | **C** | **E** | **M** | **10** |  |

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| Endorsed by principal or delegate (signature) |  | Date |  |

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| Office use only

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| Approved |  | Not approved |  |  |  |  |  |  |  |  |  |  |  |

 Accession Number

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| Signature of SACE Board Officer  |

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| SACE Board Officer Number |  | Date |  |

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**Addendum**

Please **only** use this section for any changes made after the learning and assessment plan has been approved.

**Changes made to the learning and assessment plan**

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| --- |
| Describe any changes made to the learning and assessment plan to support students to be successful in meeting the requirements of the subject. In your description, please explain:* what changes have been made to the plan
* the rationale for making the changes
* whether these changes have been made for all students, or individuals within the student group.
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**Endorsement of changes**

The changes made to the learning and assessment plan support student achievement of the performance standards and retain alignment with the subject outline.

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| Signature of principal or delegate |  | Date |  |

**Stage 1 Chemistry**

**Assessment Overview**

Complete the table below to show details of the planned tasks. Use numbers to show where students will have the opportunity to provide evidence for each of the specific features for all assessment design criteria.

| **Assessment Type and Weighting** | **Details of assessment** | **Assessment Design Criteria** | **Assessment conditions**(e.g. task type, word length, time allocated, supervision) |
| --- | --- | --- | --- |
| **IA&E** |  **KA** |
| **Assessment Type 1: Investigations Folio****Weighting 50%** | **Task 11 Deconstruct and Design Investigation –** See assessment task exemplars**Investigation 1 (Practical Investigation-Design): Deconstruct the problem and Investigate factors that will affect the breakdown of plastics/polymers in the environment.**This investigation is in three parts.In **Part A** students individually deconstruct the problem “Are plastics labelled as biodegradable really better for the environment?”Then they design an experimental procedure to investigate the effect of a factor (e.g. temperature, presence of particular types of microbes, soil types etc.) on the breakdown of biodegradable plastics/polymers in the environment Students will:* pose a hypothesis
* identify dependent and independent variables
* consider factors that should be held constant and explain why and how they will attempt to control these factors
* identify factors that may not be able to be controlled
* list materials required
* devise a procedure to be followed
* consider how they will display and analyse data
* identify safety considerations.

In **Part B** students will carry out the procedure (or one provided) and record their results.In **Part C** students will individually write a report in which they:* display and analyse their data to come to a justified conclusion
* evaluate their procedure to identify sources of uncertainty
* discuss the impact, if any, that the sources of uncertainty have on their experimental results.
* Consider the environmental implications of their results and consider the limitations of their conclusions.
 | 1,2,3,4 | 1, 4 | Students will do Part A individually, Part B in groups and Part C individually. Part A will be done in class and for homework over a week. Time allocated for Part B will be approximately 2 to 3 weeks for students to collect data, depending on the method used.Part A will be presented on a maximum of 4 A4 pages. The report will be a maximum of 1000 words. The materials/apparatus, method/procedure outlining steps to be taken, identification and management of safety risks, and results sections are excluded from the word count.  |
|  | **Task 19 Science as a Human Endeavour** **Investigation 2 (SHE Investigation): Finding alternatives for Hydrocarbons**The Science as a Human Endeavour Investigation enables students to demonstrate a comprehensive understanding of an aspect of, or an issue in Chemistry related to **Topic 3: Molecules**. The focus of this task is for a student to research the various social, economic and environmental impacts of the use of hydrocarbons as fuels and to investigate potential alternatives that will provide innovative solutions to the current issues associated with the use of, for example, fossil fuels. Students will -need to access information from different sources, select and acknowledge appropriate sources to support their own conclusions. -select at least one key concepts for Science as a Human Endeavour as described in the subject outline as a basis for their chosen aspect or issue. Students may choose the format of their written work. |  | 1,3,4 | Students work individually in their own time, although some class time will be provided to guide students with their research.A draft will be permitted.The investigation should be a maximum of 1000 words if written or a maximum of 6 minutes speaking, or the equivalent in multimodal form. Students will have two weeks to complete this investigation.  |
| **Assessment Type 2: Skills and Applications Tasks****Weighting****50%** | **Task 20 Test** **SAT 1: Test**This test assesses all topics covered this semester and comprises multiple-choice and short-answer questions. This SAT will require students to:* demonstrate their knowledge and application of the principles of atomic structure, the periodic table, bonding between atoms and the relationship between this bonding and the properties and uses of substances, shapes of molecules, hydrocarbons and polymers.
* attempt problems of a range of difficulty and complexity
* attempt problems with social and/or environmental contexts which may be familiar or new
* demonstrate understanding of the impact of chemistry in our world
* attempt relevant calculations
* use appropriate chemical terms and conventions
 |  | 1,2,3 | Time: 50 minutesThe test is completed individually under direct teacher supervision.Students are provided with a periodic table of elements and a formula sheet. |
| **Task 21 Non-Test SAT –** See assessment task exemplars**SAT 2: Classification of Substances into Structure Types**In this task students: * use data, books or online resources to find information about how to identify six different substances of a range of structure types (provided by the teacher)
* work collaboratively to design an investigation to determine properties related to the structure and bonding of two unknown white powders
* use the evidence from their investigation to determine the identity of the two white powders
* write a report under appropriate headings in which they present their evidence and formulate and explain their conclusions. In their report students:
* record and explain the information obtained about the six substances
* record the procedure followed to identify the two unknown white powders
* record results in an appropriately designed table
* connect the data to concepts and hence formulate a conclusion about the identity of the two white powders**.**
 | 1,2,3 | 1,2,4 | Students will work individually to design the method and work in groups to perform the practical component of this task.The pre-laboratory research and the report will also be prepared individually.Three lessons are allocated for the task, which will be completed in class time.  |

***Four assessments.*** *Please refer to the Stage 1 Chemistry subject outline.*