# Pre-approved Learning and Assessment Plan

Stage 2 Physics (aligns with Program 2)

Pre-approved learning and assessment plans are for *school use only*.

* Teachers may make changes to the plan, retaining alignment with the subject outline.
* The principal or delegate endorses the use of the plan, and any changes made to it, including use of an addendum.
* The plan does not need to be submitted to the SACE Board for approval.

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| School |  | Teacher(s) |  |

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| SACE school code | | |  | Year |  | Enrolment code | | | | |  | Program variant code (A–W) |
| Stage | Subject code | | | No. of credits (10 or 20) |
|  |  |  |  | **2** | **P** | **Y** | **I** | **20** |  |

Addendum – changes made to the pre-approved learning and assessment plan

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| Describe any changes made to the pre-approved 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 for individuals within the student group. |

Endorsement

The use of the learning and assessment plan is approved for use in the school. Any changes made to the 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 |  |

# Assessment overview

Stage 2 Physics – 20 credits

The table below provides details of the planned tasks and shows where students have the opportunity to provide evidence for each of the specific features of all of the assessment design criteria.

Assessment Type 1: Investigations Folio – weighting 30%

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| Assessment details | Assessment design criteria | | Assessment conditions  (e.g. task type, word length, time allocated, supervision) |
| IAE | KA |
| Design Experiment: Students individually determine the area of physics they intend to investigate, then deconstruct a problem and design and justify an investigation, including the hypothesis, experimental method, data collection, identification and management of safety risks, and type of analysis appropriate to the method (as per Science Inquiry Skills). Students are assessed on their design of an investigation. Once the design has been assessed, students work in groups, select one of the designs to implement and undertake the investigation. Students record, represent, and analyse the data individually, evaluate procedures and consider their impact on results, formulate and justify a conclusion. | 1,2,3,4 | 4 | The total time allocated for supervision in class will be 70 minutes (30 minutes planning, 40 minutes collecting data).  Students use homework time to complete the written report/multimodal product.  The report includes: introduction, materials, method (that was implemented), safety, results, analysis of results, evaluation of procedures and conclusion, with justification. Maximum report length is 1500 words for introduction, analysis of results, evaluation of procedures, and conclusion, or equivalent in multimodal form. |
| Charge to mass ratio experiment: Students use a Teltron tube to determine the charge to mass ratio of an electron. Students take measurements (from photographs) using the scale on the Teltron tube to determine the radius of curvature of a beam of electrons deviated using Helmholtz Coils. These values are used to calculate the charge to mass ratio. Students analyse data (including error analysis) and evaluate procedures and consider their impact on results, formulate and justify a conclusion, taking into account the limitations of the investigation. | 2,3,4 | 1,2,4 | Students are allocated 80 minutes of supervised class time to collect data and begin the report. Students have homework time to complete the written report. The report includes: introduction, materials, method (that was implemented), safety, results, analysis of results, evaluation of procedures and conclusion, with justification. Maximum report length is 1500 words for introduction, analysis of results, evaluation of procedures, and conclusion, or equivalent in multimodal form. |
| Science as a Human Endeavour Task: Students select at least one of the key concepts of science as a human endeavour to explore in the context of a contemporary example related to one of the topics in Stage 2 physics. The context is to be negotiated with the teacher as well as the medium of the presentation. Students complete a research planning document. They submit a report (article, website, video, oral presentation, etc.) with the structure identified in the subject outline on page 53. |  | 1,3,4 | Students are allocated 80 minutes of supervised class time to decide on a SHE key concept (s), determine context and focus for the exploration, and begin research. Homework time is available. The maximum word length for scientific communication is 1500 words for written work, 10 minutes for an oral presentation, or the equivalent for a multimodal product. |

Assessment Type 2: Skills and Applications Tasks – weighting 40%

| Assessment details | Assessment design criteria | | Assessment conditions  (e.g. task type, word length, time allocated, supervision) |
| --- | --- | --- | --- |
| IAE | KA |
| SAT1 – Motion  Students are assessed on Subtopics 1.1, 1.2, and 1.3. They demonstrate their knowledge of these topics through routine and analytical questions within the scope of the subject and in new and familiar contexts. Students’ interpretive skills are assessed through a science inquiry skills question. | 2,3 | 1,2,4 | Written test, taken during supervised class time during an 80-minute double lesson.  Students are provided with a formula sheet. |
| SAT2 – Electricity and Magnetism  Students demonstrate their knowledge through routine and analytical questions covering content from subtopics 2.1, 2.2, 2.3, and 2.4. There are questions in new experimental contexts and the test includes questions requiring paragraph answers. | 3,4 | 1,2,4 | Written test, taken during supervised class time during an 80-minute double lesson.  Students are provided with a formula sheet. |
| SAT3 – Short-answer, paragraph answers, and experimental skills test  Students are assessed on their answers to short and questions requiring paragraph answers and complete experimental skills questions from any topic within the scope of the subject outline to this time. | 2,3,4 | 1,2,4 | Written test, taken during supervised class time during a 60-minute double lesson.  Students are provided with a formula sheet. |
| SAT4 – Light and Atoms  Students are assessed using routine and analytical questions based on subtopics 3.1, 3.2, and 3.3. Some questions are related to science as human endeavour, and the test includes an experimental skills question, using a context within the subtopics. | 1,2,3 | 1,2,3 | Written test, taken during supervised class time during an 80-minute double lesson.  Students are provided with a formula sheet. |

Assessment Type 3: Examination – weighting 30%

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| Assessment details | Assessment conditions  (e.g. task type, word length, time allocated, supervision) |
| External assessment | 130 minute examination  Questions of different types cover all Stage 2 topics and science inquiry skills. Some questions may require students to integrate their knowledge from more than one topic and show an understanding of science as a human endeavour. |

*Eight assessments.**Please refer to the Stage 2 Physics subject outline.*