

VCE Physics Conference – VCAA further information

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A new set of Unit 3 and 4 assessment tasks appear in the new VCE Physics Study Design, which were discussed in the ‘VCAA Physics Update – and unpacking assessment in the new VCE Physics study design’ session at the 2022 STAV/Vicphysics VCE Physics Teachers Conference.

Many questions were raised by teachers which could not be answered in the given time. Further information is provided in this supplement. In addition, publication of the Support materials on the VCAA website expected mid-2022 and subsequent workshops and webinars related to assessment will be provided for VCE Physics teachers by the VCAA to support delivery of the new assessment tasks and study design.

Unit 3 Area of Study 1: How do physicists explain motion in two dimensions?

Possible assessment tasks for each of the four assessment types

Thank you to the teachers who contributed ideas to the assessment of this outcome. Your collated ideas are shown in the table below:

Assessment task type	Unit 3 Area of Study 1 task example (motion in 2D)
<ul style="list-style-type: none">• application of physics concepts to explain a model, theory, device, design or innovation	<ul style="list-style-type: none">• Explanation of a device: a hot wheels loop toy• Explanation of an innovation - improved sporting equipment
<ul style="list-style-type: none">• analysis and evaluation of primary and/or secondary data, including data plotting, identified assumptions or data limitations, and conclusions	<ul style="list-style-type: none">• Analysis and evaluation of primary data: Hooke’s law experiment• Analysis of rollercoaster data• Use tracker to analyse air track crashes
<ul style="list-style-type: none">• problem-solving, applying physics concepts and skills to real-world contexts	<ul style="list-style-type: none">• Task based on concepts/theories within an historical/societal context• Problem solving in real world context: any Luna Park excursion analysis• SAC task based on practical work tasks, e.g., modifying annotated pracs (other ideas... improving method/ improving technique to obtain repeatable/reproducible results)• Problem solving - designing parachutes or launching projectiles (other idea...this could also be the basis of a data analysis task, e.g., test different models and evaluate data)• Problem solving in a real world context - reduction of wear and tear on train/tracks• Just do a "Physics in the Winter Olympics" for Motion. It is a physics teacher smorgasbord (could apply to other task types, too)
<ul style="list-style-type: none">• comparison and evaluation of two solutions to a problem, two explanations of a physics phenomenon or concept, or two methods and/or findings from practical activities.	<ul style="list-style-type: none">• Comparison and evaluation of methods: Deriving maximum velocity using energy conservation versus $s=uv+at$ formulas

The purpose of this activity in the session was to illustrate that the assessment tasks have been developed so that each task type can be used to assess each outcome. Other ideas provided by teachers in the webinar related to other areas of study were: Analysis and evaluation (Unit 3 AoS2 - relationship between Force and current in a current balance from the fields zone); Problem solving (Unit 4 AoS1 - mass spectrometer? Bending electrons?)

Teachers should note that not all of an outcome needs to be assessed through School-assessed Coursework. Teachers may choose any structure to create assessment tasks, including MCQs, short-answer responses, extended responses, essays, multimedia formats, oral presentations etc.

Indicative grades, statistical moderation and School-assessed Coursework

Important information about all VCE administrative advice is available in the VCE and VCAL Administrative Handbook at: <https://www.vcaa.vic.edu.au/Documents/handbook/2022/AdminHandbook2022.pdf>

Teachers are also advised to listen to the VCAA videos that explain statistical moderation at: <https://www.vcaa.vic.edu.au/assessment/vce-assessment/how-vce-assess/how-pages/Pages/StatisticalModerationVideos.aspx>

Question 1: Do SAC tasks need to predict examination performance?

Answer 1: No

SAC tasks could be used to predict examination performance in the situation that SAC tasks mirror the external examination. The purpose of including SAC tasks in a student's assessment program is to assess a broad range of skills that are important in Physics, including those that cannot be easily examined externally. SAC tasks also provide an important opportunity for students to receive formative feedback about their progress; schools should have processes in place for providing feedback to students about their SAC tasks.

SAC tasks are moderated against the examination to ensure fairness of assessment across schools offering the VCE. The videos on the VCAA provide useful information about the need for moderation, given that schools set their own set of assessment tasks to rank their own cohort of students. The level of difficulty of SAC tasks therefore varies across schools. Included in the Handbook is the following information about statistical moderation:

Statistical moderation realigns the level and spread of each school's assessments of its students in a particular study to match the level and spread of the same students' scores on a common external score. As the external score is based on examinations done by all students across Victoria, it is a common standard against which school assessments can be compared.

Further information about SAC tasks can be found in the Handbook in Section 8: School-based Assessment.

Question 2: How can indicative grades be determined by teachers?

Answer 2: Teachers need to submit indicative examination grades to the VCAA. Pages 95-96 of the Administrative Handbook provide information about Indicative Grades, their purpose, and their application. Your school's VCE coordinator and VASS administrators should also provide further support.

This section of the Handbook provides advice about strategies for determining indicative grades, and includes (but is not limited to) the following approaches:

- setting practice examinations, which must be held at a time that allows entry of the indicative grade on VASS by the due date
- ranking the students by performance in School-based Assessment and then applying an appropriate grade
- basing the grade on prior knowledge of the relative ability of the student in the study.

Examination

A sample examination will be developed for the new study design and will be published in December of the year prior to implementation of Units 3 and 4. There is no truth to the statement that an essay will be included. An examination development panel will be established (please contact me if interested at Maria.James2@education.vic.gov.au) to provide a sample examination.

Review Panels

As a final note, I'd like to publicly thank those who have been members of the current – and past – VCE Physics Review Panels. Review panels are constituted of practising VCE Physics teachers from the government, catholic and independent sectors, tertiary academics, subject association representation, and industry representatives.