**Phil Feain** - Hello, welcome to this VCE Algorithmics (HESS) School-assessed Task on-demand video for the School-assessed Task. The purpose of Video 1 is to support teachers with understanding the background to the SAT for Algorithmics (HESS). My name is Phil Feain and I'm the Curriculum Manager for Digital Technologies with the VCAA. This presentation will involve the following topics: resources and documents, the annual VASS dates, nature and scope of the task, assessment criteria, authentication, assessment sheet and marking.

I've listed the following essential resources for teachers to follow for the SAT: Algorithmics (HESS) study page, Algorithmics (HESS) Study Design , Administrative information for School-based Assessment, support material, examination specifications and past examinations, General advice on School-based Assessment audits, VCAA Bulletin and Notices to Schools and the on-demand videos of the Algorithmics (HESS) study page. The first essential resource is the Algorithmics (HESS) Study Design. The study design is now accredited from 2023-2026. You need to be familiar with this document for Algorithmics (HESS). It details: the areas of study, outcomes, key knowledge, key skills, school-based assessment including SACs and the SAT and the examination.

Next, we have the Algorithmics (HESS) study page. This page includes content on: the study design, Administrative information, General advice on School-based Assessment Audits, Examination reports, Examination specifications, past examinations, support material, planning, teaching and learning, assessment, and professional learning videos. We also have the support material which links off the Algorithmics (HESS) study page. This content was developed to support teachers with planning and delivering the areas of study.

Content includes: planning: developing a programme, overviews of the Areas of Study, Sample weekly planners for each unit. Teaching learning activities for each area of study. Assessment: advice for each component of the SAT and Sample approaches to developing an assessment task. The Administrative information for School-based Assessment is a very important document. This document contains information relevant to the SAT as well as the authentication and assessment of the SAT. This document is updated every year and teachers are to ensure they use the current year's document. Content included for Unit 3 Outcome 3, Unit 4 Outcome 1 and Unit 4 Outcome 2 involve: details regarding the SAT: nature of the task, scope of the task, assessment criteria , authentication of the SAT, Authentication record form and the assessment sheet. Keep in mind that you should only be referring to the current year's Administrative information as this is the start of a new study design this year.

Another document which is published monthly during the teaching year is the VCAA Bulletin. The VCAA Bulletin is an official VCAA publication for Early Years, Foundation-10, VCE, VCAL and VET, published in 10 editions each year. This contains information relating to Algorithmics (HESS) such as professional learning, etc. Teachers need to subscribe to this through the VCAA website. Notices to Schools is an official communication to Victorian schools or Registered Training Organisations issued by the VCAA. This often goes to school leaders. Teachers can register for Notices through the school's VASS administrator. The VCAA then processes these requests and updates the distribution list used to send Notices to Schools.

Two other important resources are the Assessment Schedule, which provides dates for when scores need to be submitted to VASS for SACs and SATs and the VCE and VCAL Administrative Handbook, which outlines the rules, regulations and policies governing the delivery of the VCE. Looking at the VASS dates. The VASS dates for SAT scores to be entered are:

- Unit 3 School-assessed Task - July.

- Algorithmics (HESS): Criteria 1-4. Unit 4 School-assessed Task - November.

- Algorithmics (HESS): Criteria 5-7

- Algorithmics (HESS): Criteria 8-10.

Teachers should be aware of the dates for submission of scores into VASS in July and November. These dates are published in the annual Important Administrative Dates and Assessment Schedule, published annually on the VCAA website as listed there. Let's now look at the nature and scope of the task. The nature of the task for Unit 3 Outcome 3 is stated in the study design and in the Administrative information for School-based Assessment. It involves the design of a data model and algorithm combination to solve a real-world/applied problem, including: a specification of the problem, a consideration of multiple solution options and the selection of a suitable, coherent, clear and fit-for-purpose solution.

The scope of the task for Unit 3 Outcome 3 is stated in the Administrative information for School-based Assessment. It lists each of the tasks for students and references each observation for the Authentication record form and for each criterion for assessment. The scope of the task for Unit 3 Outcome 3 involves the specification of the problem. Criterion 1 assesses students' skills in specifying a problem and modelling its key features. Teachers are to provide students with a real-world/applied problem context. The problem should be stated in terms that are sufficiently general to allow individual students to approach it in different ways. The problem context should lend to the data modelling, and algorithm design approaches studied in Unit 3, but also have the potential to benefit from the advanced algorithm design methods studied in Unit 4.

Students are to precisely specify the algorithmic problem, formulated from the real-world/applied problem context. They are to identify salient features of the problem, and model them using suitable ADTs. They should describe how features of the problem map to the data model and describe signatures for key operations of the data model. Their data model should be presented as an integrated whole with clear justification for modelling decisions. Teachers should approve each student's intended approach early in the process. The evidence from this task is observed through Observation 1 and assessed through Criterion 1.

The scope of the task for Unit 3 Outcome 3 also involves the consideration of multiple solutions options. Criterion 2 assesses students' skills in the design of an algorithm to solve a real-world/applied problem. Students should consider multiple algorithm design approaches to the problem. This may include exploring various Unit 3 algorithm design patterns and/or combining or modifying Unit 3 course algorithms. Students should discuss the rationale underpinning their algorithm design decisions and explain their solution. The word range for this task is approximately 600-800 words. The evidence from this task is observed through Observation 2 and assessed through Criterion 2. Criterion 3 assesses students' skills in the communication of an algorithmic solution to a real-world/applied problem. Students are to communicate their algorithmic solution in pseudocode. The evidence from this task is observed through Observation 3 and assessed through Criterion 3.

The scope of the task for Unit 3 Outcome 3 also involves solution selection. Criteria 4 assesses students' skills on the justification of an algorithmic solution to a real-world/applied problem. The justification of a solution at the end of the Unit 3 component relates to: the suitability of the choice of model and algorithm, the coherence of the integration of the data model and algorithm, whether it's fit-for-purpose in terms of its meeting of the requirements of the real-world/applied problem context. The word range for this task is approximately 300-500 words. The evidence from this task is observed through Observation 4 and assessed through Criterion 4. Students should submit their completed Unit 3 Outcome 3 School-assessed Task work. The nature of the task for Unit 4 Outcome 1 and 2 is stated in the study design and in the Administrative information for School-based Assessment. It involves a formal time complexity analysis of the designed algorithm for the applied problem and an explanation of the consequences of these results on the algorithm's real-world application. And a design of an improved data model and algorithm combination to solve the applied problem, including: the selection of an efficient, coherent and fit-for-purpose solution, a time complexity analysis and a comparison to the original solution.

The scope of the task for Unit 4 Outcome 1 and 2 is stated in the Administrative information for School-based Assessment. It lists each of the tasks for students and references each observation for the Authentication record form and for each criterion for assessment. Scope of the task for Unit 4 Outcome 1 and 2 involves a formal analysis. Criterion 5 assesses students' skills in determining the time complexity of algorithms. Students are to determine the time complexity of the initial algorithmic solution that they developed as part of Unit 3 Outcome 3. The word range for this task is approximately 100-200 words. Full working of time complexity calculations should also be included. The evidence from this task is observed through Observation 5 and assessed through Criterion 5. Criterion 6 assesses students' understanding of the consequences of an algorithm's time complexity on its real-world application. Students are to explain the consequences of their initial algorithmic solution's time complexity on its real-world application, including a thorough discussion of practical input sizes and its suitability to the problem's requirements. The word range for this task is approximately 100-200 words. The evidence from this task is observed through Observation 6 and assessed through Criterion 6.

The scope of the task for Unit 4 Outcome 1 and 2 also involves the design of an improved solution. Criterion 8 assesses students' skills in the design of an improved data model and algorithm combination. Students are to apply the knowledge and skills from Unit 4 Outcome 2 to select and design an improved algorithmic solution. This may include combining, or modifying Unit 4 course algorithms. Students should discuss the rationale underpinning their data model an algorithm design decisions and precisely describe their designs. The word range for this task is approximately 200-400 words. The evidence from this task is observed through Observation 7 and assessed through Criterion 8. Criterion 9 assesses students' skills in advanced algorithmic problem-solving. Students are assessed on the quality of their improved designs based on the solutions, coherence, efficiency and fitness for purpose. The evidence from this task is observed through Observation 8 and assessed through Criterion 9.

The scope of the task for Unit 4 Outcome 1 and 2 also involves further formal analysis. Criterion 5 assesses students' skills in determining the time complexity of algorithms. Drawing on their Unit 4 Outcome 1 knowledge and skills, students are to determine the time complexity of the improved algorithm that they designed as part of Unit 4 Outcome 2. The word range for this task is approximately 100-200 words. Full working of time complexity calculations should also be included. The evidence from this task is observed through Observation 9 and assessed through Criterion 5.

The scope of the task for Unit 4 Outcome 1 and 2 also involves a comparison. Criterion 7 assesses students' skills in the comparison of the time complexities of algorithmic solutions to a real-world/applied problem. Criterion 10 assesses students' skills in the comparison of algorithmic solutions in terms of their coherence and fitness for purpose. Students draw on Unit 4 Outcomes 1 and 2 to compare the suitability of their developed solutions. The word range for this task is approximately 400-600 words. The evidence from this task is observed through Observation 10 and assessed through Criterion 7 and 10. Students should submit their completed Unit 4 Outcomes 1 and 2 School-assessed Task work.

I'll discuss a brief overview of an example of an assessment criterion and how it works. There are 10 assessment criteria in total for the Algorithmics (HESS) SAT. For Unit 3 Outcome 3 there are four criteria labelled 1-4. For Unit 4 Outcome 1 there are three criteria labelled 5-7 and for Unit 4 Outcome 2 there are three criteria labelled 8-10. This is an example of Criterion 1. Notice it includes the assessment criteria, indicators for what is to be completed, descriptors for each of the indicators and levels of performance going horizontally across the rubric, and notice the levels of performance range from 0-10 marks. Teachers are to use these assessment criteria only for marking the SATs.

We'll have a brief overview of Authentication. Authentication procedures need to be followed for the SAT. Teachers are reminded of the need to comply with the authentication requirements specified in the Assessment: School-based Assessment section of the VCE and VCAL Administrative Handbook. This is important to ensure that undue assistance is not provided to students while undertaking assessment tasks. Make sure you have a copy of the VCE and VCAL Administrative Handbook with you when planning for authentication. Teachers must be aware of the requirements for the authentication of the VCE Algorithmics (HESS) School-assessed Task.

This is a screenshot of the Unit 3 Authentication record form for Algorithmics (HESS). Student details are to be provided at the top of the form. In the table are spaces for the teacher to state the date of the observation and submission of each of the components of the SAT, comment on the observation and the submission of each of the components and sign their initials for each observation and submission. Students are also required to sign their initials for each observation and submission. At the completion of the unit students are sign and date the declaration that all resource materials and assistance used have been acknowledged and that all unacknowledged work is their own. The Authentication record form should be updated for each observation and submission during the lifetime of the SAT.

This is a similar form or there is a similar form for Unit 4. Authentication record forms can be requested as part of the audit process by the VCAA. Looking at the Assessment Sheet. This is the assessment sheet for scores to be added and submitted through VASS. Notice the scores for each level of performance for each criterion needs to be provided as well as a total score. Looking at some marking considerations for the SAT. A couple of marking issues that need to be discussed. Use the rubrics from the annual Administrative information for School-based Assessment - Algorithmics (HESS). Mark the rubrics holistically. Consider how you mark and the effect on statistical moderation on those marks. The awarding of a 0 instead of an NA can affect the statistical moderation of your class results.

Late submission - this is a school-based decision with some flexibility. NA is to be awarded when a criterion or group of is not observed and not submitted. You can award a mark if observed and not submitted and 0 is to be awarded when the work is submitted but does not meet the descriptors. However, students still need to be able to achieve an S. In this video we looked at: resources and documents for the study, the annual VASS dates, the nature and scope of the task, an example of the assessment criteria, discussed authentication, looked at the assessment sheet and the marking of the SAT.

Thank you for following this presentation. If you have any questions regarding this presentation, you can contact Phil Feain, the Digital Technologies Curriculum Manager, at the contact details below.

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