**Phil Feain** - Hello and welcome to this VCE Algorithmics (HESS) School-assessed Task on-demand video for the School-assessed Task. The purpose of Video 2 is to support teachers with understanding Unit 3 Outcome 3, the SAT, Criteria 1-4, authentication and assessment 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: nature of the task, SAT Criteria 1-4, authentication, assessment and issues identified after marking Unit 3 Outcome 3. Now we'll look at the nature of the task for Unit 3 Outcome 3. Before we discuss the nature of the task we need to look at the outcome statement. The Unit 3 Outcome 3 statement says: On completion of this unit the student should be able to design suitable solutions for real-world problems that require the integration of algorithms and data types, including the communication of solutions and their justification. 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 following slides reference the Administrative information for School-based Assessment for Algorithmics (HESS). We'll unpack Criteria 1-4 by looking at the scope of the task and each criterion.

Criterion 1 assesses the 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 for 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. The 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. This is Criterion 1 which involves skills in specifying a problem and modelling its key features. The indicators state the tasks that students need to complete to satisfy the criteria. These are assessed against the levels of performance. Each criterion is worth 10 marks.

In this criterion students are to: specify an algorithmic problem, explain the salient features of the real-world /applied problem and model the problem using ADTs. Criteria 2 assesses the 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 designed patterns and/or combining or modifying Unit 3 course algorithms. Students should discuss the rationale underpinning their algorithm designed 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. This is Criterion 2 which involves skills and the design of an algorithm to solve a real-world/applied problem. In this criterion students are to: consider suitable algorithmic approaches to the problem and describe the design of an algorithmic solution to the real-world/applied problem.

Criterion 3 is also involved in the consideration of multiple solutions options. 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. This is Criterion 3 which involves skills in the communication of an algorithmic solution to a real-world/applied problem. In this criterion students are to: communicate the algorithmic solution in pseudocode.

Criterion 4 assesses students' skills in 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 is 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. This is Criterion 4 which involves skills in the justification of an algorithmic solution to real-world/applied problem. In this criterion students are to justify a solution to the real-world/applied problem.

Just a quick look over authentication as this is covered in more detail in the Background to the SAT on-demand video and Authentication on-demand video. Teachers are fill out these forms during the year. They are to state the date of the observation and submission of each of the components of the SAT. Comment on the observation and 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 to sign and date the declaration that all the 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. It should not be left to the end of the SAT. Authentication record forms can be requested as part of the audit process by the VCAA.

And finally, looking at the assessment of the SAT. This is the Assessment Sheet for scores to be added and submitted through VASS. All 10 criteria for the SAT are listed on the assessment sheet with spaces provided for each of the scores. The first four scores will be filled in for the SAT in Unit 3 Outcome 3. And these are shown here. This last slide looks at issues identified after marking Unit 3 Outcome 3. If the design of the data model and algorithm combination to solve a real-world/applied problem in Unit 3 Outcome 3 is incomplete or contains significant errors, students may not have a functioning algorithm to analyse for the Unit 4 Outcome 1 component. In this situation, the teacher may need to provide the student with a minimal functional solution, such as a brute-force solution, to the Unit 3 Outcome 1 task for the student to analyse. The modified design will not be reassessed, and the original score will stand. This will prevent negative consequential effects for the second component of the SAT in Unit 4 Outcome 1.

In this video we looked at: the nature of the task, discussed SAT Criteria 1-4, looked at authentication, looked at assessment and discussed issues identified after marking Unit 3 Outcome 3. 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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