**Phil Feain** - Hello and welcome to the VCE Algorithmics Unit 3 School-based Assessment on-demand video for the Unit 3 Outcome 2 SAC for 2023. The purpose of Video 4 is to support teachers with understanding the background to the Unit 3 Outcome 2 SAC task for Algorithmics (HESS). My name is Phil Feain and I'm the Curriculum Manager for Digital Technologies with the VCAA.

The purpose of this presentation is to build the capacity of teachers to develop compliant, rigorous and engaging VCE assessment tasks in line with the VCE assessment principles and to provide an overview of the Unit 3 Outcome 2 School-assessed Coursework task. In this presentation we will cover planning and considerations, the Unit 3 Outcome 2 task, key knowledge and key skills, VCAA Performance descriptors, designing the assessment task, developing the marking scheme and the VASS dates for 2023.

So now we'll go through the Unit 3 Outcome 2 SAC and look at how to make it a compliant, engaging and rigorous assessment task. Let's have a look at planning the task. When you're ready to write the assessment task have the following documents in front of you. These are all on the Algorithmics study page.

- Algorithmics Study Design - Unit 3 Area of Study 2 Algorithm design - pages 10-13.

- Area of Study statement, Outcome statement, Key knowledge and Key skills.

- Support material: Planning and Assessment:

- Unit 3 Area of Study 2

- Sample approaches to developing an assessment task.

- Unit 3 and 4 Performance descriptors:

- Unit 3 Outcome 2

- Performance descriptors. On-demand videos:

- Unit 3 Outcome 2 Background to the SAC and Unit 3 Outcome 2 Planning the SAC.

As the teacher you have several things to consider. You need to decide on the most appropriate task for your cohort, time and conditions for conducting the task and inform the students ahead of the date. Some other considerations include: the outcome being assessed and the task type, the estimated time it will take to teach the key knowledge and key skills for the outcome, the likely length of time required for students to complete the task, the classroom environment the assessment task will be completed in, whether the assessment task will be completed under open book or closed book conditions, any additional resources required by students and when tasks are being conducted in other subjects and the workload implications for students.

Let's have a look at the outcome statement: On completion of this unit the students should be able to define and explain algorithmic design principles, design algorithms to solve information problems using basic algorithm design patterns and implement the algorithms. You need to ensure the SAC task meets this.

Next is the assessment task itself. In response to given stimulus material:

- create one or more designs of algorithms that apply algorithm design patterns or select appropriate graph algorithms to solve information problems

- implement an algorithm and it must be out of 50 marks.

Here's the key knowledge. These can be used to help you to develop the task or tasks. The scenario for the task should only preference these bullet points. For teachers wanting activities to assist with their students' learning, we have developed these examples of learning activities in the support material.

These learning activities meet with the Unit 3 Outcome 2 Key knowledge bullet points. The key skills are how you want to assess your students. Your assessment task needs to be or needs to enable these key skills to be met. You want students to be able to: interpret pseudocode and execute it manually on given input, write pseudocode, identify and describe recursive, iterative, brute-force search and greedy design patterns within algorithms, design recursive and iterative algorithms, design algorithms by applying the brute-force search or greedy algorithm design pattern, write modular algorithms using ADTs and functional abstractions, select appropriate graph algorithms and justify the choice based on their properties and limitations, explain the correctness of the specified graph algorithms, use search methods on decision trees and graphs to solve planning problems, implement algorithms, including graph algorithms as computer programmes in a very high-level programming language that directly supports a graph ADT and demonstrate the correctness of simple iterative or recursive algorithms using structured arguments that apply the methods of induction or contradiction.

We also have the VCAA Performance descriptors in the Advice for teachers for Unit 3 Outcome 2. These can be used to assist you in developing your assessment task and marking scheme or assessment criteria. The assessment task should show the task and the marks for the prompts for what the students are to complete. Consideration should also be given to the weighting of the marks and the task. These descriptors do not need to be evenly weighted. When using the performance descriptors for the marking scheme or assessment criteria you should also show the marks and weightings clearly within the document.

This is the first part of the performance descriptors. And here's the second part of the performance descriptors. When designing the assessment task students should be advised of the timeline and conditions under which the task is to be completed. The assessment task must directly assess the students' understanding of the key knowledge and key skills as well as their ability to apply these to the assessment task. Due dates and duration of assessment is a school-based decision. Students should be given instructions regarding the requirements of the task, including time allocation, format of student responses, and the marking scheme or assessment criteria. And the marking scheme or assessment criteria used to assess the students' level of performance should reflect the VCAA performance descriptors and key skills.

When designing the task, you need to consider how the Outcome statement, Key knowledge, Key skills and VCAA Performance descriptors connect together. By reading the Key knowledge, Key skills and performance descriptors alongside each other, tasks can be developed for assessment to cover the performance descriptors. At this stage you've developed your assessment task. Now you need to consider the development of the marking scheme. Some things you can do. List the VCAA performance descriptors and key skills. For each performance descriptor or key skill, list the activities required to demonstrate competency. Consider how many marks out of 50 that you should allocate for each descriptor. Determine the weightings of the descriptors or components of the task. Think of the time expended by students for each part of the task and allocate marks according to likely student effort areas. Think of the difficulty of specific tasks. Ensure that there is a chance for your struggling students to demonstrate levels of competency in the task and develop your marking scheme or assessment criteria. You need to have a range of marks allocated for the levels of performance. This helps you to spread your student marks out.

These are the VASS dates for 2023. The due date for the Unit 3 School-based Assessment - Unit 3 Outcome 1 and 2 SACs is September. The due date for the Unit 4 School-based Assessment - Unit 4 Outcome 3 SAC is November. Teachers should be aware of the dates for submission of scores into VASS in September and November. These dates are published in the 2023 Important Administrative Dates and Assessment Schedule, published annually on the VCAA website listed below. In this presentation: we discussed planning and considerations, looked at the Unit 3 Outcome 2 task, looked at the key knowledge and key skills, looked at the VCAA Performance descriptors, discussed designing the assessment task and developing the marking scheme and looked at the VASS dates for 2023.

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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