Embedding career education in the Victorian Curriculum F–10

Digital Technologies, Levels 7 and 8

An existing learning activity linked to a particular learning area or capability in the Victorian Curriculum F–10 can be easily adapted to incorporate career education, enriching students’ career-related learning and skill development.

1. Identify an existing learning activity

**Curriculum area and levels:** Digital Technologies, Levels 7 and 8

**Relevant content description:** Develop and modify programs with user interfaces involving branching, iteration and functions using a general-purpose programming language [(VCDTCD043)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDTCD043)

**Existing activity:** Developing a program that identifies an animal by following a taxonomic classification system.

**Summary of adaptation, change, addition:** Creating a program that shows when teachers are available for student support outside the classroom, and undergoing real work tasks, such as beta testing and giving/receiving feedback.

2. Adapt the learning activity to include a career education focus

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| Existing learning activity | Adaptations, changes or extensions that can be made |
| Teacher revises concepts of user input (as keyboard input of text strings or numbers), branching (using if, then or else conditions) and iteration (repeating through sequences of instructions and decisions). | Teacher assists students to identify examples of each coding concept in apps or programs that they frequently use. Students explore the purpose of each coding concept in the example they have selected. For example, it may be accepting user input to follow menu navigation options, following branching by matching a word in the search bar or iteration by converting a folder containing many images to a different format. |
| Teacher guides class through classification taxonomy including hierarchy elements such as genus, family and species. Students conduct research to identify the hierarchy and research examples to include in multiple branches of the classification system. | Teacher shares a list of availability for teaching staff relevant to the year level. Students are instructed to design a program that allows them to find when staff are available for student support outside the classroom. Students develop a format to structure this data so that it could be organised in categories such as curriculum area and homeroom, with categories for the days and hours that staff are available to assist or conference with students. Teacher identifies the necessity of structuring data so that the general-purpose programming language can return the appropriate result by category. Teacher makes links with the shared calendar systems that many workplaces use to schedule meetings or communicate times where they are unavailable, or an online booking system that prevents users from booking a timeslot that has already been booked by another user. |
| Students design a classification program to identify an animal based on a set of characteristics entered by a user. | Students design their program to find staff availability, along with the user interface elements such as text entry fields, buttons and areas to display results.  |
| Students use a general-purpose programming language to develop their classification program, running checks for usability and functionality. | Students use a general-purpose programming language to develop their program. They meet regularly with a student challenge partner who tests their program and identifies areas for improvement. Teacher provides feedback as a test case based on own schedule and relates this process to program development processes such as desk checking and beta testing. |
| Teacher assesses the results of the program and the accuracy of test cases. | Students conduct beta testing with a partner they have not seen as a challenge partner. They provide feedback on the accuracy of the results and factors contributing to ease of use, such as clearly identified fields or buttons, a logical sequence of steps to provide user input and clearly displayed results. Students reflect on the importance of checking the effectiveness and accuracy of their own program, as well as having another person involved to provide a user’s perspective while testing.Teacher links skills engaged during the task to real-world employment skills. These can include technical and information technology skills, as well as things such as checking their own work, and the ability to give and receive feedback. Students consider what other environments or workplaces they may use these skills in. |

Considerations when adapting the learning activity

* Teachers may need to prepare the data of staff availability ahead of time, so that any part-time staff or regular meetings are taken into consideration.
* Teachers should be prepared to highlight employability skills used in this task beyond the digital technology skills, such as communication, following a brief, giving and receiving feedback. They should also be able to discuss the applicability of these skills in other areas.

Benefits for students

Know yourself – self-development:

* Students develop their proficiency in following through the sequence of steps and decisions involved in the execution of code. They identify the level of specificity involved in creating a coded solution and the importance of testing every path in the program for hidden or unexpected errors.

Know your world – career exploration:

* Students explore the application of roles involved in developing software for a specific purpose. This supports students to identify and further develop areas of interest as potential career options.
* As they build and test their programs, students learn to use information and technology effectively.

Manage your future – be proactive:

* Students gain experience in working to a design brief and examining the functional requirements of what a digital solution needs to do through this project. They are also involved in conducting beta testing to test the possible outcomes from successful and unsuccessful queries entered into their program. This technical experience allows them to experience work.