­­Embedding career education in the Victorian Curriculum F–10

Digital Technologies, Levels 9 and 10

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 9 and 10

**Relevant content description:** Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems [(VCDTDS045)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDTDS045)

**Existing activity:** Identifying hardware and software components in common digital devices, and how they enable network access.

**Summary of adaptation, change, addition:** Exploring the use of different methods to interact with digital systems in a range of work contexts.

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 shares a range of digital systems that are each a component of a network. Teacher supports students to identify the hardware that allows users to log in and gain access to data, such as keyboards, which allow users to provide usernames and passwords. | Teacher defines roles for students when their groups explore the range of digital systems, so that within each group a student is examining how each device utilises or relies on network connection through the perspective of a designer, developer, supplier, or end user. Teacher explains that these may be roles that students have when considering employment options in the IT field. Some discussion may be needed so that students understand the perspective someone in these roles would bring to the task they are about to complete. Teacher ensures students reflect on skills and knowledge they are using to determine their answers – for example, through informal questions during the activity or questions on the board. |
| Teacher leads students to determine how software can enable hardware to function when managing and securing data, such as screen coordinates when using a mouse or touch pad; depth of pressure when using a touch screen; or user account services to confirm user details. | Teacher provides opportunities for students to determine whether any methods of interaction (both input and output) are made redundant by other methods, such as whether a touchscreen device also requires a physical keyboard. Students explore the pros and cons such as the form factor (physical size and weight) of specific hardware, power requirements and potential for security breaches, and makes connections with the experience of an end user as a customer or client. Teacher leads students to make connections between their findings here and their adopted roles. |
| Teacher assesses student identification of hardware and software that controls network access. | Teacher leads students to evaluate the methods of successfully gaining network access in a range of circumstances such as an office desktop workstation, a mobile inventory tracker or a mobile point of sale device. Students identify different careers where one or many of the methods of network connection would be optimal, and circumstances affecting choices about preferred methods of providing input. They identify where different network connections are preferred by an end user and what limitations may affect the device. For example, reception or administration staff may be likely to utilise a stationary desktop workstation connected to a wired network and accepting input via keyboard and mouse. Workers who are handling materials requiring gloves may prefer a method of input that does not require touchscreens. |

Considerations when adapting the learning activity

* Teachers will need to provide a range of digital systems either as physical objects or using images or videos. This gives concrete examples of the different methods of accessing a networked digital system relying on user credentials. For example, handheld postage tracking units, point of sale terminals, automatic teller machines or vending machines with credit card or debit card facilities.
* Teachers can make connections with students about where they have observed digital systems with each method of accepting user input. They can lead students to identify any sections of the community who are not catered for by each method, or by a digital system.
* Teachers may need to conduct some preliminary research to guide student thinking and reflection in terms of skills, knowledge and possible career options related to this activity. The help of a career practitioner can be sought. At Levels 9 and 10, this activity represents an excellent opportunity for students to conduct targeted career exploration of a significant growth industry.

Benefits for students

Know yourself – self-development:

* Students increase their familiarity with gaining access to networked digital systems that are an element of many occupations, thus increasing their digital literacy.
* When considering design and development implications, students are encouraged to take a broad view of the community including people with a wide range of abilities.

Know your world – career exploration:

* Students can use their knowledge of the different methods of providing access and input to a digital system, such as using external keyboards to type extended texts as compared to using touch screens when navigating icon-based information systems. This range of experiences can assist students in making connections to the world of work by identifying their strengths and areas for improvement in using different devices, and the advantages and disadvantages of each device.
* Students’ understanding of the benefits and barriers of various hardware elements can increase their effectiveness in using technology productively.

Manage your future – be proactive:

* Students consider the experience of an end user of digital systems, including the ease of use and accessibility features. This reflection can influence the digital solutions developed by students who are considering employment in an Information Technology field or industry.