Embedding career education in the Victorian Curriculum F–10

Science, Levels 5 and 6

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:** Science, Levels 5 and 6

**Relevant content descriptions:** Changes to materials can be reversible, including melting, freezing, evaporating, or irreversible, including burning and rusting. ([VCSSU077](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCSSU077))

Scientific understandings, discoveries and inventions are used to inform personal and community decisions and to solve problems that directly affect peoples’ lives ([VCSSU073](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCSSU073))

Communicate ideas and processes using evidence to develop explanations of events and phenomena and to identify simple cause-and-effect relationships ([VCSIS088](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCSIS088))

**Existing activity:** Exploring why it is important to understand everyday reversible and irreversibly changes, with real-world examples.

**Summary of adaptation, change, addition:** Presenting brochures on reversible and irreversible changes to the school community, collecting feedback and editing brochures for distribution.

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 performs some demonstrations of reversible and irreversible changes, such as an ice block melting and paper burning. | To extend this task, teacher facilitates a discussion around the importance of scientists seeking feedback on their work before they release it, including recording, processing and reflecting on the feedback, and then making changes accordingly. Discussion should focus on the language used and the relevance of the information to the people who will be reading it.  Students should incorporate teacher feedback before distributing their brochure to a small sample of the school community. With each brochure, they should provide a survey that asks questions such as:   * Did you find this brochure useful? * Did this brochure teach you something you didn’t know previously? * Is there anything you would change about this brochure? * What else would you like to know about the topic?   Students create a table or set up a spreadsheet to record their data. They reflect on the data collected and edit their brochure based on the feedback from the survey. They record a summary of the changes they made to their brochure, including their justifications. Remind students that not all changes based on feedback have to be made, but any changes not made need to be justified. |
| Students discuss what we might observe that would tell us if a change is reversible or irreversible. They brainstorm examples of reversible and irreversible changes from everyday life and construct a table to summarise if these examples are beneficial or detrimental to society. |
| In groups, students design a brochure for the school community to explain: (a) beneficial reversible and irreversible reactions that can occur; (b) detrimental reversible and irreversible reactions that can occur; (c) how detrimental reversible reactions can be prevented or slowed down (for example, ice cream melting); and (d) how detrimental irreversible reactions can be prevented or slowed down (for example, the formation of rust). Teacher guidance about how a brochure should be structured may be required. |
| Students may perform some experiments and take photos of the outcome to insert into their brochures. | Students reflect on their experience of seeking and acting on feedback throughout this activity. How well did they collate and reflect on the data? Did they have to compromise with other group members about changes to make? How important do students think collating and presenting data is to other professions? What might some of these other professions be? |

Considerations when adapting the learning activity

* Teacher may need to guide students to construct a survey that gets desired responses.
* Teacher should consider how they will conduct the survey. An online platform, such as SurveyMonkey, would be an easy way to collate and sort feedback. Parents, staff and other members of the school community can be asked to provide feedback. Alternatively, a simple paper survey can be handed directly to the person who receives the brochure, and students may subsequently process quantitative data using a spreadsheet. This provides an opportunity for teachers to discuss the advantages and disadvantages of using qualitative and/or quantitative feedback in providing information.
* Teacher should read through the feedback before giving it to students, keeping in mind what type of feedback is useful for them to consider when editing their brochures.
* Teacher may invite a chemist or someone that works in a field involving reversible and irreversible reactions (for example, road re-surfacing involves a selection of different types of materials to form the road surface mix, and the development of different foods such as chocolates and biscuits often involves consumer testing for appearance, taste and texture before the product is released in the market) to speak about the importance of their work to the community and how they work to gather feedback before their work is reported to the community.

Benefits for students

Know yourself – self-development:

* Students develop skills in cooperating with others and working as a team.
* Students identify the value of receiving feedback and learn to use feedback to make improvements effectively, leading to increased adaptability.

Know your world – career exploration:

* Students understand how the work people do affects, and is perceived by, the community.
* Students learn to collect information and feedback from other people.
* Students consider other professions where data can be collected and presented.

Manage your future – be proactive:

* Students learn to weigh up conflicting feedback to decide what changes should be made.
* Students experience scientific work by reflecting on feedback and making changes to their work.
* Students plan and manage their time effectively.