Embedding career education in the Victorian Curriculum F–10

Design and Technologies – Food and fibre production, Levels 3 and 4

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

1. Identify an existing learning activity

**Curriculum area, sub-strand and levels:** Design and technologies – Food and fibre production, Levels 3 and 4

**Relevant content description:** Investigate food and fibre production used in modern or traditional societies [(VCDSTC025)](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSTC025)

**Existing activity:** Investigating ideal conditions for successful plant production including how weather and soils affect production and availability of food.

**Summary of adaptation, change, addition:** Exploring the roles involved in food production; conducting experiments as professionals would.

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 selects a vegetable (ideally from a school kitchen garden) to study and leads discussion on the needs of that plant to grow, focusing on climate, feed and soil. Teacher discusses how weather affects plant production.  Under instruction from teacher, the class follows the seasonal production of food and suggests reasons why we can get that product all year.  Teacher leads discussion on the impact of soil quality on the growth of produce. | Teacher connects the role of science in food production and the roles certain professionals have. Science professions to introduce include:   * nutritionist (studies nutrition requirements for plants) * agronomist (uses science to improve productivity of farms; studies plants, soil and the weather) * botanist (studies plants) * horticulturalist (uses science to grow plants and gardens) * meteorologist (studies the climate) * food scientist (studies food and how to ensure a safe and plentiful supply). |
| With guidance from the teacher, students research the ideal conditions for a plant (from the school garden) using online or library resources. | Teacher designs a hands-on experiment students can conduct to research growing conditions for plants and the jobs people have when growing plants. Using the school garden, students can:   * investigate soil, using a pH testing kit * test soil organisms * test soil texture * observe soil colour * test soil water holding capacity * investigate weather using thermometers * investigate weather using a rain gauge.   Instructions for these tests can be found in ‘Additional resources’.  For each style of test, teacher should connect the tasks students are doing with the scientific professions introduced previously. For example, teacher could discuss how an agronomist might test soil texture, and why. |
| Students conduct research into a plant and its needs in relation to climate, soil and season.  Students are taught information gathering techniques that will support them in future learning. | Students select the test that interests them and learn how to conduct field tests as a team. Students monitor weather and soil conditions and predict the impact of various conditions on the plants they are monitoring.  Students could monitor growth rates of plants in different growing conditions in the garden (variation in soil/feed/water). This information could be recorded and charted using digital technologies. |
| Teacher assesses gathered research posters. | Students display results of their tests publicly to encourage discussion with their peers and community members. |

Considerations when adapting the learning activity

* This task is suitable for a school with a kitchen garden, otherwise vegetables can be grown indoors in range of containers (pots, buckets, polystyrene boxes, drums). Testing equipment is available at local hardware stores or nurseries.
* Teachers should consider the risks involved in working with students outdoors, including OH&S assessments and accessibility requirements.
* School policy regarding excursions and school visits will need to be followed for this activity.

Additional resources to help when adapting the learning activity

* Soil experiments/resources: [DigDeeper](https://www.soils4kids.org/experiments), [Soil net](http://www.soil-net.com/primary/), [Exploring Soils](https://www.publish.csiro.au/book/7464/?utm_source=All+the+dirt+subscribers&utm_campaign=2d5dfd4d18-EMAIL_CAMPAIGN_2017_04_19&utm_medium=email&utm_term=0_bae8a7d889-2d5dfd4d18-47484805#review)
* Videos introducing scientific roles: [Behind the news, ‘Weather science’](https://www.abc.net.au/btn/classroom/weather-science/11933890), [Scope TV – soil science](https://www.bing.com/videos/search?q=soil+science+australia+for+kids&&view=detail&mid=6E275E18E4D6015F23096E275E18E4D6015F2309&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dsoil%2520science%2520australia%2520for%2520kids%26qs%3Dn%26form%3DQBVR%26sp%3D-1%26pq%3Dsoil%2520science%2520australia%2520for%2520kids%26sc%3D0-31%26sk%3D%26cvid%3D23B60E79F0BF4BB5A1555E9980E04E1A)

Benefits for students

Know yourself – self-development:

* By conducting hands-on experiments and responding to changing conditions in the school garden, students learn to be adaptable.
* Students develop teamwork and communication skills, allowing them to work with others.

Know your world – career exploration:

* Students investigate the role of science in food production, learning about careers and areas of study and understanding work involved in these careers.
* By replicating tests done by scientists in real-world environments, students learn to use information and technology effectively.

Manage your future – be proactive:

* By organising and conducting experiments, and presenting their findings, students practise analysing information, enhancing their ability to make informed decisions.