Embedding career education in the Victorian Curriculum F–10

Design and Technologies – Engineering principles and systems, 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:** Design and Technologies – Engineering principles and systems, Levels 9 and 10

**Relevant content description:** Explain how designed solutions evolve with consideration of preferred futures and the impact of emerging technologies on design decisions ([VCDSTS055](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSTS055))

**Existing activity:** Exploring how car design has evolved over time and studying the design features of a modern car.

**Summary of adaptation, change, addition:** Exploring how an industry changes over time, using the example of a single item, such as a car.

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 |
| Prior to this activity students must have studied the evolution of cars. The links on the evolution of cars in the ‘Additional resources’ can be explored for this. | |
| Students compare a modern car of their choice with one from the past by annotating the technical features of each and identifying positives and negatives of the design features.  They identify how car features, such as brake technology, GPS, airbags and panelling/design, have changed and suggest reasons for these changes (e.g. safety, cost, fashion, technological advancements, new materials, etc).  Students identify what features of the modern car enhance the safety of the vehicle. They research how these features were developed, designed and made industry-standard. | Teacher leads a discussion on identifying what professions are involved in the design and production of modern cars. Students consider whose job it is to identify gaps and design new features.  Students research the people involved in the car design process. Do various professionals work in a group to propose a design solution for cars? Who are these professionals? What are the skills these professionals require?  What jobs relating to the automobile industry are available in Australia? Students research where in the world the bulk of car design and production takes place, and what opportunities may exist for them to work overseas in the industry.  Teacher collates a list of job opportunities in Australia and abroad relating to car design/production from student research. |
| Students extend research to determine what else has changed in the production process between the two eras. They identify where each car was designed and manufactured.  In groups of three, students assume the roles of automotive mechanic, automotive designer or automotive electrician and work together to create a poster advert to popularise a car design among peers by specifying the unique mechanical, aesthetic and control system design features of the car. | Students research the job they have assumed and create a profile that highlights the skills required, tasks, job location (globally), demographics, salary, when and why the role emerged (i.e. as a result of modern manufacture, safety concerns, etc.), and how the role has changed over time. Profiles can be presented to the class.  Students consider how other roles in this industry have or have not changed over time. What are potential areas of change or growth in this industry? What other industries are growing or have undergone significant change? What industries might grow or change in the future, particularly in a post-COVID-19 world?  Students consider how industries can overlap. For example, the automotive industry can impact the health industry when a mechanic fixes a problem with an ambulance, or an engineer designs a faster ambulance. |
|  | Students reflect on the inevitability of change, how people react to change and how they react to change personally. Do students feel comfortable dealing with change? If not, how can they learn to cope with change more effectively? |

Considerations when adapting the learning activity

* Teacher can plan an extra lesson for students to do a gallery walk and evaluate the design ideas.
* Teacher can use the ‘Additional resources’ to find the answers to the questions in the activity.

Additional resources to help when adapting the learning activity

* [The evolution of car design from 1910 to now](https://www.shutterstock.com/blog/car-design-throughout-history)
* OSV, [The evolution of cars](https://www.osv.ltd.uk/the-evolution-of-cars/)
* Wikipedia, [Automotive industry in Australia](https://en.wikipedia.org/wiki/Automotive_industry_in_Australia)
* The Kangan Institute, [7 career paths to start your automotive career](https://www.kangan.edu.au/students/blog/career-paths-to-start-your-automotive-career)
* The Foundation for Young Australians, [Mind the generation gap – The mechanics](https://www.fya.org.au/video/mind-the-generation-gap-episode-2/)
* [JobOutlook](https://joboutlook.gov.au/)

Benefits for students

Know yourself – self-development:

* Students learn how to work with others to achieve a common goal.
* Students reflect on change and adaptability by understanding how industries have adapted to change

Know your world –career exploration:

* Students gain insight into the world of work by researching modern car design and production.
* Students build critical assessment skills by identifying unique design features.
* Students explore the labour market as they research and share profiles of different career opportunities.

Manage your future – be proactive:

* Students can make informed decisions by learning how roles have changed and what opportunities currently exist in the automotive industry.