Embedding career education in the Victorian Curriculum F–10

Design and Technologies – Engineering principles and systems, 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:** Design and Technologies – Engineering principles and systems, Levels 5 and 6

**Relevant content description:** Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions ([VCDSCD038](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSCD038))

Generate, develop, communicate and document design ideas and processes for audiences using appropriate technical terms and graphical representation techniques ([VCDSCD039](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSCD039))

Apply safe procedures when using a variety of materials, components, tools, equipment and techniques to produce designed solutions ([VCDSCD040](https://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCDSCD040))

**Existing activity:** Exploring the concept of movement by exploring components of toys and generating design ideas to produce a toy that uses components to create movement.

**Summary of adaptation, change, addition:** Exploring the role and responsibilities of toy designers.

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 brings in a range of toys that use motion. Students play with and explore the toys to come up with ideas about how the toy is moving. Students examine types of movement that are used in each toy.  Teacher introduces aim of activity: to design a moving toy for a five-year-old.  Class takes moving toys to share with younger students. They survey the younger students to find out what they like about the existing toys and what they would like to see in a new moving toy. | Following the study of how toys move, teacher guides a class discussion exploring the process of toy design, using questions such as:   * Who produces toys in real life? * How do toy designers know what to create? * What tools might a toy designer or business use to come up with design ideas? * What kind of skills should a toy designer have? * What kind of formal education can help someone become a toy designer?   Teacher can guide students through material in ‘Additional resources’ to inform their answers. |
| With teacher guidance, students design a toy that uses cam-follower movement mechanism (see Instructables ‘Mechanical cam toys’ in ‘Additional resources’). Students can use SketchUp for this task. | Students research what is involved in the work of a toy designer and how they are inspired (see Fisher Price ‘Behind the scenes’ video in ‘Additional resources’). They identify similarities between the work they are doing in creating their prototypes, and the work of toy designers. |
| Teacher approves the design idea or gives feedback to improve it further. Younger students could also give feedback on the prototypes.  Students finalise their designs. | To extend, students present their prototype to younger students in the form of a pitch. They discuss how they incorporated the ideas from the younger students into their designs and key features of their toys. |
| Students produce a toy based on the final design. | Teacher guides class through a reflection activity about the skills they used when designing and pitching their toys. Teacher elaborates on skills students used, such as creative thinking, communicating their ideas, and presenting themselves and their ideas well. Students link these skills to the work of toy designers, and identify other jobs where these skills are useful. |

Considerations when adapting the learning activity

* Prior to the activity, students will need to have studied a particular movement mechanism, for example, cam and follower-mechanism, by exploring real life toys or using web-based resources.
* Teacher should lead a discussion on how to pitch an idea to an audience prior to that stage of the activity.
* Surveying younger students can facilitate broader discussion of various career roles. Who else is involved in designing and producing a toy (i.e. market researcher, quality controller, manufacturer)?

Additional resources to help when adapting the learning activity

* The Art Career Project, [How to become a toy designer](https://www.theartcareerproject.com/become/toy-designer/)
* Fisher Price, [Our story: Behind the scenes](https://www.fisher-price.com/en_US/ourstory/index.html)
* Kidzworld, [Toy designer Q&A](https://www.kidzworld.com/article/24463-toy-designer-qanda/)
* Instructables, [Mechanical cam toys](https://www.instructables.com/id/Mechanical-Cam-Toys/)
* [SketchUp](https://www.sketchup.com/)

Benefits for students

Know yourself – self-development:

* Students develop communication skills by surveying younger students and presenting a pitch.
* Students learn to be flexible and respectfully discuss varied thinking by reflecting on feedback.

Know your world – career exploration:

* Students investigate the tasks, skills and motivations associated with toy design, thus contributing to their capacity to understand work.
* Students build ICT skills by utilising digital technologies to design their toys and prototypes.
* Students explore the world of work by researching the work of toy designers, including their motivations, processes and tasks, and linking these skills to other professions.

Manage your future – be proactive:

* Students learn to weigh up options to generate design ideas as a toy designer would do.