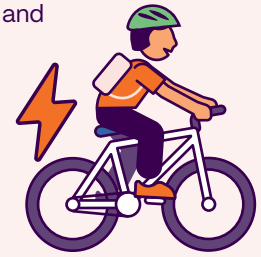
Road to Renewables

Incursion | Years 7–8 | Free | 45–90 minutes

This hands-on workshop, linked to the Victorian curriculum 2.0, uses STEAM skills and problem solving to get students excited about renewable energy and the types of jobs and skills required for the energy transition.

Workshop scenario

Electric vehicles (EVs) are becoming increasingly popular. Using problem solving skills, coding, maps and Ozobots, students will decide where to place EV charging stations and create renewable towns.



Students will:

- learn about renewable energy and the energy transition
- code tiny robots acting as EVs (Ozobots) to plan journeys
- learn about different jobs required for the energy transition
- apply maths skills to decide where to charge EVs
- use problem-solving skills to design renewable energy landscapes.

Workshop format

The workshop is delivered as an incursion at your school and can be scheduled to fit into your timetabling needs.
We have two options:

- 90 minute session with town planning activity
- 45 minute session with no town planning activity.

Introduction

- Workshop overview and the role of the SEC in the energy transition.
- Introduce students to Ozobots and how coding can be used to program how they operate. Ozobots will simulate EVs.

Activity

- Working in pairs, students will use problem-solving skills to code the Ozobots to make different journeys on a range of maps.

Discuss the energy transition

- Introduce the role and types of renewable energy supporting the energy transition and meeting our emission targets.
- Discuss the types and number of jobs required for the transition, and ask students to identify jobs they are interested in.

Wrap-up

- Discuss what students learnt, what worked well and areas for improvement.

Options for extension activities

- Students plan where to charge their EVs, by calculating the distance of their journey.
- Students make planning decisions on where to place different renewable energy sources on the map.
- Discuss students' aptitudes and interests and how they link to different careers in renewable energy.

Workshop themes

Renewable energy | STEAM | Sustainability | Coding | Problem-solving

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Victorian Curriculum 2.0

Earth and space sciences

The sustainable use of Earth's resources is influenced by whether the resources are renewable or non-renewable; the processes involved in resource extraction and energy production come with both benefits and risks to sustainability **VC2S8U09**

Physical sciences

Energy exists in different forms, including thermal, chemical, gravitational and elastic, and may be classified as kinetic or potential; energy transfers (conduction, convection and radiation) and transformations occur in simple systems and can be analysed in terms of energy efficiency **VC2S8U15**

Technologies and society

The impacts of innovation and the development of technologies on designed solutions for ethical considerations including sustainable living **VC2TDE8S02**

Geographical knowledge and understanding

Strategies and responses to manage and improve the liveability and environmental sustainability of Australia's cities, and to adapt to climate change **VC2HG8K21**

Materials supplied

- ✓ Worksheets
- ✓ Ozobots, coding stickers and markers
- ✓ 3D objects to build out landscape (blocks, wind turbines, etc)
- ✓ Brochure with careers information and polaroid of student during the workshop
- ✓ Reflection sheet and marking rubric.

The workshop will require a classroom with AV equipment for PPT

FAQs

How much does this Incursion cost?

All workshops are free of charge.

How many students can attend the workshop?

Workshops can be delivered to two classes at a time and multiple workshops can be scheduled throughout the day. If you would like the workshop to be delivered to a whole year level, workshops can be delivered over multiple days.

What level of supervision is required?

The workshops are delivered by experienced educators. The school is responsible for the duty of care and behaviour management of the students and the teacher must stay in the classroom for the duration of the session. Please discuss appropriate behaviour with your students to ensure that everyone can enjoy their experience.

Which class should we hold the workshop in?

The workshop is best suited to a science or technology class.

What type of classroom and equipment is required?

Students will work in groups. Tables set up for group work is preferable but not essential; students can work on the floor and in break-out spaces. AV equipment for a presentation is required, all other materials are provided.

Does SEC comply with Victoria's Child Safe Standards?

SEC is committed to the safety and wellbeing of all children and young people. All staff have been trained in appropriate ways to work with children, and all have a valid Working with Children Check. Workshop risk assessments are available on request.