

Lesson Plan

IMVR LESSON PLAN

Responsible Recyclers

| | | | |
|----------------------|-------------------------|-----------------|-------------------------|
| Learning Area | Design and Technologies | Kit | Lumination Learning Lab |
| Year Level | Year 5 and 6 | Duration | 2x 60 minute lessons |

Introduction/Description

Sustainability is becoming increasingly important across the planet due to climate change; so how are people in design and technology occupations addressing sustainability? How can we design products that are sustainable, and what happens to them when they are no longer needed?

Learning Intentions

In this lesson, students will understand the process of recycling paper and plastic through engaging with the Trash Time experience in IMVR (Immersive Virtual Reality). Students will develop their research skills by examining various design and technologies businesses to find out if they are sustainable.

Task Summary


After researching various sustainable businesses, students will collaborate in small groups to create their own sustainable future business. Students will present their business in CoSpaces in their groups.

Preparation

Students are expected to:

- Be familiar with using HHVR headsets and student devices.
- Understand how to use the IMVR headsets and controllers safely.
- Know the concept of sustainability.
- Have had previous experience using and creating in CoSpaces

Teachers should make sure that:

- All hardware has been charged and sanitised.
- Student Devices have the most recent updated version of *Youtube* installed.
- Slide Deck has been checked and teacher has accessibility.
- A copy of the  Responsible Recyclers Student Digital Notebook has been distributed to students and they have downloaded/ made a copy for themselves.

- Students have been divided into pairs or groups depending how many devices and HHVR Headsets are available.
- Time has been spent getting familiar with the application *Trash Time* before the lesson, to ensure students can be assisted when needed.
- CoSpaces logins have been organised and distributed to students before Part 2.

Suggested Rotation Format:



| | IMVR | Watch | Research |
|-------------------|---------|---------|----------|
| Rotation 1 | Group 1 | Group 2 | Group 3 |
| Rotation 2 | Group 3 | Group 1 | Group 2 |
| Rotation 3 | Group 2 | Group 3 | Group 1 |

Resources

Hardware

- IMVR Headsets and controllers
- HHVR Headsets
- Mobile Devices
- Student Laptops
- Headphones
- Internet Access
- Smartboard/TV

Tasks/Presentations

-  Reduce, Reuse, Recycle Teaching Deck
-  Responsible Recyclers Student Digital Notebook
- [VR Safety Poster](#)

Videos

-  10 Eco-Friendly Building Materials | Sustainable Design
10 minutes
Here are some alternative and eco-friendly building materials which can replace concrete and steel. These sustainable materials come from sources you would never have thought such as seaweed, mushrooms and even coffee. They allow designers and engineers to construct green buildings with a low carbon footprint.
-  22 Inventions That Are Saving The Earth
7 minutes
From whirlpool turbines to edible cutlery, water blobs, and package-free shampoo and toothpaste, we've compiled a list of 22 inventions that could help us cut back on plastic, reduce garbage in the sea, and make the Earth a better place.
-  Recycling fashion: The town turning waste into clothes- BBC ...
4 minutes
Fashion is one of the most polluting industries in the world. But a

small town in Italy called Prato has built its fortune on transforming old scraps into new clothes, particularly knitwear and wool.

- [Sustainability Business Stories - ELK the Label](#)
2 minutes
Marnie Goding, Co-Founder and Creative Director at Elk the Label shares their sustainability story including her thoughts on a common question businesses ask themselves - is sustainability a big investment?
- [Sustainability Business Stories - Bulk Nutrients](#)
2 minutes
Jess Crowley, General Manager at Bulk Nutrients share their sustainability story and her insights on Compostable versus Recycled Packaging: What's the Difference?
- [Sustainable Salons | Connecting thousands of businesses to r...](#)
2 minutes
Did you know that discarded hair can now be recycled and used - as a 'hair boom' - to mop up oil spills on land and at sea? Discover how connectivity is playing its part to help social enterprise, Sustainable Salons, continue its important work of making salon waste history

VR Experiences

- [Nespresso Recycling Factory "360" Visit](#)
2 minutes
Visit a typical Nespresso Recycling factory in this immersive 360 movie.
- [360° IT Recycling Facility Tour](#)
4 minutes
Take a tour of our IT manufacturing and recycling facility from the comfort of your chair. See what happens to your end of life hardware when it comes to Stone HQ, from processing to refurb to shredding.
- [Clearing Everest's Trash - 360 | National Geographic](#)
5 minutes
Everest, the world's highest mountain, has been an elite climbing destination for decades. But rising tourism in the Sagarmatha National Park has made trash and plastics management a challenge. Witness the efforts of the Sagarmatha Pollution Control Committee to curb trash and plastics and build a waste management system on and around Everest.

Websites

- [Climate Justice | Ben & Jerry's](#)
Learn about how the popular ice-cream company are addressing climate justice as a business.
- [Our commitment to sustainability | Edible Beauty](#)
Edible Beauty is an Australian cosmetics brand with a focus on ethical and sustainable products.

- [Impact Report 2021 | ettitude](#)
Ettitude provides Australians with an eco-friendly bedding option. Find out more about the positive impact they are having on the planet
- [Sustainability – TOMS Australia](#)
TOMS has a focus on providing Australians with footwear that is good for the planet.

Learning Sequence

Part 1

1

(10 mins)

Introduction

- Invite students to answer the question 'What do you do each day that could be considered sustainable?' on page 2 of the [Responsible Recyclers Student Digital Notebook](#). Have a short discussion about what students have written.
- Watch the video on Slide 2, [Fast fashion to landfill pollution – push for zero-waste | Sustainable f...](#) and ask students to answer the questions on page 3 of the [Responsible Recyclers Student Digital Notebook](#) (What's the main issue with the fashion industry? What can businesses do to help this issue? What can you do to help?)
- Introduce to students that during the next two lessons, they will be researching how different businesses are becoming more sustainable, to help inspire them to create their own sustainable business in CoSpaces.

2

(45 mins)

Development

Introduce the stations students will engage in (slide 5):

Station based learning

Station-based Learning in 10-15 min interval rotations

Station 1 - IMVR

Students spend 10 minutes engaging with Trash Time to understand the recycling process of plastic and paper in more depth. Reflect on page 4 of the

[Responsible Recyclers Student Digital Notebook](#) :

- What challenges did you come across when recycling in Trash Time?
- Is recycling an easy process? Why/why not?
- What could businesses do to ensure they recycle their materials properly?

Station 2 - Watch

In pairs or individually, students can choose from the following videos to explore various sustainable businesses and practices. The HHVR (hand-held virtual reality) videos are focused on recycling practices, and the other videos are focused on sustainable businesses.

Regular Videos

Building and Architecture

- [10 Eco-Friendly Building Materials | Sustainable Design](#)

Products

- [22 Inventions That Are Saving The Earth](#)

Fashion

- [Recycling fashion: The town turning waste into clothes- BBC News](#)

Food

- [Sustainability Business Stories - Bulk Nutrients](#)

Cosmetics

- [Lush Cosmetics Impact & Sustainability](#)

Salons

- [Sustainable Salons | Connecting thousands of businesses to reduce ...](#)

HHVR Videos

- [Nespresso Recycling Factory "360" Visit](#)
- [360° IT Recycling Facility Tour](#)
- [Clearing Everest's Trash - 360 | National Geographic](#)

Students create a list of criteria for a sustainable business on page 7 of the

Responsible Recyclers Student Digital Notebook

- List three main elements that a business needs to be considered sustainable.

Station 3 - Research

Students research one of the sustainable businesses listed on page 8 of the

Responsible Recyclers Student Digital Notebook . Students complete their reflections on page 9.

3

(5 mins)

Conclusion

- Invite students to discuss the prompts on page 11 of the Teaching Deck with a partner.

Part 2

1

(5 mins)

Introduction

- Ask students to recap what they achieved in the previous lesson as a class discussion.
- Explain to students that they will be using their research from the previous lesson to create their own sustainable business. Students can work collaboratively in a small group (no larger than 3) or they can choose to work individually if preferred.
- Talk through the information on slide 15, and the business example on slide 16 of the [Reduce, Reuse, Recycle Teaching Deck](#) to help students understand what they need to consider for their business.

2

(45 mins)

Development

- In groups, students complete their sustainable business design on page 12 of the [Responsible Recyclers Student Digital Notebook](#)
- Once their business has been designed, students can then log into [CoSpaces](#) to create a VR Experience of their business.
- Students need to include the following in their CoSpace (this has been included as a checklist on slide 13 of the [Responsible Recyclers Student Digital Notebook](#) :
 - A shop / office / building related to their business.
 - A sign displaying their business name and slogan.
 - An explanation of their business (students could use another sign, or code a person to talk about it)
 - How their business is sustainable.
- When students have finished their CoSpace, they can then take a screenshot and paste it into page 14 of the [Responsible Recyclers Student Digital Notebook](#) along with the share code.

3

(5 mins)

Conclusion

- Invite students to pair up with another group to view each other's business CoSpace in VR using the HHVR headsets.
 - Click 'Share' in the top right hand corner
 - Click 'Share unlisted' and fill in the details
 - Click 'Share' to access the QR code for students to scan with the CoSpaces app to view in VR
- Students give each other feedback using the prompts on slide 19 of the [Responsible Recyclers Teaching Deck](#)
 - I like:
 - I wish:
 - I wonder:

Modifications

Adaptations

Part 1

- Students who require additional assistance with writing can voice record their reflections in the [Responsible Recyclers Student Digital N...](#)
- Teachers could decide to take out one of the stations (watch or research) to simplify the lessons' content.
- Teachers may choose to print the student digital notebook for students to work on, rather than working on it digitally.

Part 2

- This lesson can be extended into a double lesson if extra time is needed.
- Students can work individually on the business task if they prefer.
- If there isn't enough time to organise viewing CoSpaces in VR, students can look at each others' CoSpaces on the website.

Extension Ideas

- Visual Art:** Students could design a digital poster for one of the businesses listed on page 9 of the [Reduce, Reuse, Recycle Teaching Deck](#)
- Mathematics:** Students could practice addition and subtraction strategies by calculating a weekly budget for one of the businesses listed on page 9.
- English:** Students could write a short story from the perspective of a business owner solving a sustainability problem.

Curriculum Connections

| Australian Curriculum | NSW Curriculum | VIC Curriculum |
|---|---|--|
| <p>Version 8.4 Year 5 and 6 - Design and Technologies</p> <p><u>Design and Technologies Knowledge and Understanding</u> Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use (ACTDEK019)</p> <p><u>Digital Technologies Processes and Production Skills</u> Implement digital solutions as</p> | <p>Stage 3 - Science and Technology</p> <p><i>plans and uses materials, tools and equipment to develop solutions for a need or opportunity</i> ST3-2DP-T</p> <p><i>defines problems, and designs, modifies and follows algorithms to develop solutions</i> ST3-3DP-T</p> <p><i>explains how digital systems represent data, connect together to form networks and transmit data</i> ST3-11DI-T</p> | <p>Levels 3 & 4 - Design and Technology</p> <p><i>Recognise the role of people in design and technologies occupations and explore factors, including sustainability, that impact on the design of solutions to meet community needs</i> VCDSTS023</p> <p><i>Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes</i> VCDSTC027</p> <p><i>Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques</i></p> |

| | | |
|--|--|-------------------------|
| <p><i>simple visual programs involving branching, iteration (repetition), and user input (ACTDIP020)</i></p> <p>Version 9</p> <p>Year 5 and 6 - Design and Technologies</p> <p><u>Design and Technologies Knowledge and Understanding</u> <i>Explain how people in design and technologies occupations consider competing factors including sustainability in the design of products, services and environments (AC9TDE6K01)</i></p> <p><u>Digital Technologies Processes and Production Skills</u> <i>generate, iterate and communicate design ideas, decisions and processes using technical terms and graphical representation techniques, including using digital tools (AC9TDE6P02)</i></p> | | <p>VCDSCD029</p> |
|--|--|-------------------------|

Cross-Curriculum Priorities

- ☐ Aboriginal and Torres Strait Islander Histories and Cultures
- ☐ Asia and Australia's Engagement with Asia
- ☒ Sustainability

Capabilities

- ☐ Literacy
- ☒ ICT Capability
- ☒ Critical and Creative Thinking
- ☒ Personal & Social Capability
- ☒ Ethical Understanding
- ☐ Intercultural Understanding