

Lesson Plan

AR & VR LESSON PLAN

Plastics – Should They be Banned?

Learning Area	Humanities and Social Sciences	Kit	VR/AR Creation Kit & Immersive Virtual Reality (IMVR) Kit
Year Level	Year 7	Duration	1x 60 minute Lesson

Introduction/Description

"It's just one plastic bottle..." said 8 million people. There's no denying it, single use plastics are one of the greatest contributors to pollution today. Whilst there are measures being put in place to start minimising their use, do we really think about the impact single use plastic has on our environment? And what do we do with the plastic items that already exist?

Learning Intentions

Students will understand and engage in critical thinking on the impact single use plastics have on our environment.

Task Summary

Students will contribute to a tug of war thinking routine where they will robustly discuss the provocative statement: *All plastics should be banned* after engaging with experiences on the Immersive Virtual Reality (IMVR) and the Handheld Virtual Reality (HHVR).

Preparation

Students are expected to:

- Have some background in using IMVR.
- Have some background on using the HHVR headsets.
- Have some understanding on what single use plastics are

Teachers should make sure that:

- IMVR headsets are calibrated and charged.
- Teachers are familiar with the *Curatours* experience using the IMVR
- Devices are charged.
- Students are able to access YouTube videos.
- Slide deck has been checked and the teacher has enabled the deck's accessibility so students can access them.
- A copy of the Student Digital Notebook has been distributed to students and they have downloaded/ made a copy for themselves.
- Students are divided into pairs or groups depending on how many

devices are available. A suggested rotation cycle may be:

Group	Round 1	Round 2	Round 3
Group 1	IMVR	Research	HHVR
Group 2	HHVR	IMVR	Research
Group 3	Research	HHVR	IMVR

This may differ based on student numbers and number of HHVR headsets/ devices.

Resources

- Hardware
 - Student laptops
 - Handheld Virtual Reality (HHVR) Headsets
 - Mobile Devices
 - IMVR Headsets
- Websites
 - [The Plastic Museum](#) - Article
A museum totally prefabricated in plastic for two weeks, assembled on-site in just 2 days and 100% recycled 10 days after its inauguration. Conceived as the key elements of the campaign to explain the importance of the correct use of plastic, it had to be entirely built out of recyclable plastic.
 - [Museum of Design in Plastics](#)
MoDiP is the only UK Accredited museum with a focus on plastics. Its purpose is to use its Designated collection to develop understanding of the value of plastics within historical, contemporary, and sustainable contexts.
 - [Future Materials](#)
Each year, PG teams up with the Royal College of Art in London to run an industry brief with the MA Textiles course. This year, the students were challenged to use single-use plastic waste to create new materials. They were asked to reuse, rethink and redefine this wasted resource, but using only what they would normally consume. The brief was to find creative solutions for new surfaces based on aesthetic and practical principles and taking into account the energy consumption used for the process of repurposing the source material.
- IMVR Apps
 - [Curatours - Museum of Plastic](#)
*Museum of Plastic 2121 is an imagined future museum, built to teach future generations about plastics and tell the story of how activism started in 2021 led to the positive change that resulted in us cleaning up our oceans and forever changing our relationship with plastic.
 Taking inspiration from the Solarpunk* movement, this is a positive look at our future. The world today can seem bleak, with terrifying predictions creating deep-seated anxiety for the future, throwing doubt on the impact of individual action.*

- VR Videos:

- [Generation Plastic - Plastic on the Ganges](#) (6:09)
An introduction to the abundance of plastic sold in the markets and used within the communities along the Ganges River, as well as the challenges that people face with managing plastic disposal at the local level.
- [Sea Plastic](#) (5:23)
With this film experience, The Jetlagged and Plastic Pollution Coalition want to show our addiction to plastics and raise awareness about the impact plastic waste has on the local and global environment. By immersing the viewer in environments that are heavily affected by plastic trash, the filmmakers want to challenge the viewers to rethink their plastic consumption and eventually change their behavior.
- [Impacts of Plastics on our Environment](#) (4:38)
This 4k 360 VR video deals with the Impacts of Plastic Waste on Our Environment and mangrove forests. It gives a few simple rules we should all try to follow if we are to stop single use plastics and micro plastics destroying our environment

- Videos:

- [Brief history of plastics](#) (5:53)
Trace the history of the invention of plastic, and how the material ushered in what became known as the plastics century.
- [Know your plastics](#) (1:49)
Chances are, you've bought a plastic container at some point in your life—and since it had those three little arrows on the bottom, you figured you could recycle it. But those symbols mean a lot more than you think. They tell you what kind of plastic a product is made from, and even how recyclable it is. The truth is, recycling doesn't start at the blue bin. It starts the moment you make a purchase. Watch this video to find out how to be smarter at recycling. It's easier than you think.
- [Top 10 fascinating alternatives to plastic](#) (3:17)
A list of 10 plastic alternatives that are already in production or are close to being so.
- [Edible Water](#) (1:30)
'Ooho' by Skipping Rocks Lab is an edible water bottle created out of 100% biodegradable brown algae that is an environmentally-friendly alternative to plastic bottles.
- [Indonesian Plastic-Made Museum](#) (2:39)
Environmentalists in Indonesia keen to send a message about the world's worsening ocean plastics crisis have created a museum made entirely from plastics, to convince people to rethink their habits and say no to single-use bags and bottles.

- Teaching Materials:

- [Plastic: Should it be banned?Teaching Deck](#) (slide deck)
- [Plastic: Student Digital Notebook](#)
- [Tug of War google jamboard](#)

Other Learning Areas

- English

Learning Sequence

1

Introduction
(10 mins)

- As a class, watch the following video on a [brief history of plastics](#) (5:53) and ask students to complete a 321 RIQ (3 Recalls, 2 Insights, 1 Question) on the video in their [Student Digital Notebook](#).
 - 3 Facts they remember from the video.
 - 2 New insights they have learned from the video.
 - 1 Question they may have now.
- Introduce to students that they will be investigating a provocative statement: *All plastics should be banned*. They will need to add facts and statements they form and find during the station based learning to the [tug of war thinking routine](#) on the [google jamboard](#).

2

Development
(40 mins)

Introduce the stations students will engage in

Station-based Learning in 10-15 min interval rotations

Station 1 – IMVR

- In pairs students are to engage and explore [Curatours - Museum of Plastic](#). Take turns in the group and complete a 321 RIQ after the experience.
 - 3 Takeaways from the experience
 - 2 New insights they have learned from the experience
 - 1 Question they may have now

Station 2 – Research

- Students are to watch a range of videos and explore listed websites to find some facts and statements that could help define their stance on plastics
 - **Websites**
 - [The Plastic Museum](#) – Article
 - [Museum of Design in Plastics](#)
 - [Future Materials](#)
 - **Videos**
 - [Brief history of plastics](#) (5:53)
 - [Know your plastics](#) (1:49)
 - [Top 10 fascinating alternatives to plastic](#) (3:17)
 - [Edible Water](#) (1:30)
 - [Indonesian Plastic-Made Museum](#) (2:39)

Station 3 – HHVR

- Students are to watch one of the following 360 VR videos on plastics and complete a [Connect-Extend-Challenge](#) on it:
 - [Generation Plastic - Plastic on the Ganges](#) (6:09)
 - [Sea Plastic](#) (5:23)
 - [Impacts of Plastic Waste on our Environment](#) (4:38)

If there is time they can watch more than one video, otherwise it will be a choice

3

Conclusion
(10 mins)

- Ask students to review the facts and statements. Project the [Tug of War google jamboard](#) on the whiteboard (or replicate the tug of war rope on the board/floor).
 - Which side do students choose to be on? Ask students to physically stand on a side.
 - Ask students randomly why they have chosen to stand on that side.

Additional Teaching Notes

This lesson may be used within a unit on liveability, water resources, or as a stand-alone sustainability lesson.

Modifications

Adaptations

Students may view the experiences in 'gyro' mode on the mobile devices if they are unable to view in VR

Extension Ideas

Students can write an expository piece on the statement 'All Plastics should be banned'.

Curriculum Connections

Australian Curriculum	NSW Curriculum	VIC Curriculum
<p>Year 7 - Humanities and Social Sciences</p> <p>The human-induced changes that challenge the sustainability of places and environments</p> <p>(AC9HG10K01)</p> <p>The environmental world views of people and their implications for environmental management</p> <p>(AC9HG10K02)</p> <p>Causes and effects of a change in an identified environment at a local, national or global scale, and strategies to manage sustainability</p> <p>(AC9HG10K04)</p>	<p>Stage 4 - Geography Oceanography GEE4-4 describes the interactions and connections between people, places and environments that impact on sustainability</p> <p>GEE4-7 examines the management strategies of individuals, groups and governments</p> <p>Stage 5 - Geography Oceanography GEE5-4 assesses the interactions and connections between people, places and environments that impact on sustainability</p> <p>GEE5-7 analyses management strategies and the roles and responsibilities of individuals, groups and governments in response to geographical issues</p>	<p>Levels 7 & 8 - Geography</p> <p>Identify, analyse and explain interconnections within places and between places and identify and explain changes resulting from these interconnections (VCGGC101)</p> <p>Environmental, economic and social measures used to evaluate places for their liveability, comparing two different places (VCGGK113)</p>

<p>Year 7 - English (for extension option)</p> <p>Plan, create, edit and publish written and multimodal texts, selecting subject matter, and using text structures, language features, literary devices and visual features as appropriate to convey information, ideas and opinions in ways that may be imaginative, reflective, informative, persuasive and/or analytical</p> <p>(AC9E7LY06)</p>	<p>Stage 4 - English (for extension option)</p> <p>EN4-4B makes effective language choices to creatively shape meaning with accuracy, clarity and coherence</p>	<p>Level 7 - English</p> <p>Use a range of software, including word processing programs, to create, edit and publish written and multimodal texts (VCELY390)</p>
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Cross-Curriculum Priorities

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

Capabilities

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