

Lesson Plan

AR & VR LESSON PLAN

The Role of Technology in Food Sustainability

Learning Area	Design and Technologies (Food Technology) Digital Technologies	Kit	VR/AR Education Kit
Year Level	Years 9-10	Duration	1x 60 minute Lesson

Introduction/Description

It's no secret that food sustainability is a major issue we are facing in the future as our world develops and grows. Green technology, Artificial Intelligence, and bio-technology could be the answer to food sustainability issues.

Learning Intentions

Students will develop an understanding of the role different technologies are playing in helping solve the issue of food sustainability.

Task Summary

Students will summarise and report back with their critical thinking skills on which food technology they believe to be most effective and why after researching a range of options.

Preparation

Students are expected to:

- Have some background in viewing Youtube videos in VR on the HHVR headsets.
- Have been studying the concepts of food sustainability.
- Have knowledge in how to use [flip](#).
- Know how to take a screenshot using a laptop or device.

Teachers should make sure that:

- Devices are charged.
- Students are able to access all listed websites and videos.
- Slide deck has been checked and the teacher has access.
- A copy of the Student Digital Notebook has been distributed to students and they have downloaded/ made a copy for themselves.
- A class and topic have been set up in [flip](#) so students are able to record their responses (you will need to set up a teacher's account - see tutorial [here](#) if unfamiliar).
- 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	HHVR	Research	Google Arts and Culture
Group 2	Google Arts and Culture	HHVR	Research
Group 3	Research	Google Arts and Culture	HHVR

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

Resources

- Websites
 - [Food Print Quiz](#) (Quiz to determine what your 'food print' is)
- VR Videos:
 - [Food Nation VR 360° - Sustainability](#) (3:06)
 - [360 Degree Virtual Farm Tour: Sustainable Practices ...](#) (4:26)
- Apps:
 - [5 designs defining the future of food – Google Arts & Culture](#) (Google Arts and Culture)
 - [Flip](#) (recording and presenting platform)
 - Screenshot app on PC or device
- Videos
 - [Building a more sustainable food system with AI | FT ...](#) (2:45)
 - [The Futuristic Farms That Will Feed the World | Freeth...](#) (6:20)
 - [5 AI-Enabled Farming Robots | Future of Farming ▶ 2](#) (8:35)
 - [5 Vertical Farms Run by AI and Robots | Future of Far...](#) (12:00)
- Teaching Materials:
 - [The Role of Technology in Food Sustainability](#)
 - [The Role of Technology in Food Sustainability Studen...](#)

Other Learning Areas

- Digital Technologies

Learning Sequence

1

Introduction
(5-8 mins)

- Direct students to complete the [Food Print Quiz](#). Ask them to take a screenshot of their results and paste into their Student Digital Notebooks.
- Discuss as a class:
 - What are some of the tips that were recommended to you in the detailed report?
 - Are there any you think you could try?

2

Development
(30- 40 mins)

- Watch [Building a more sustainable food system with AI | FT Food Revolution](#) (2:45) as a class. Ask students to complete a 321 RIQ on page _ of their student digital notebook
 - 3 things they remember from the video
 - 2 new insights they have gained from the video
 - 1 question they now have

Station-based Experiences

- Divide students into 3 groups. Rotate groups through each station (10 mins each station). Students should record their thinking and interactions with each station on pages _ in their Student Digital Notebooks

Station 1 - HHVR

- Students view [Food Nation VR 360° - Sustainability](#) (3:06) and [360 Degree Virtual Farm Tour: Sustainable Practices on New England D...](#) (4:26) on the HHVR headsets. Answer the following questions in their student digital notebooks:
 - What technologies were used in the videos?
 - How do these technologies help food sustainability?
 - Come up with and explain another technology idea that could be used on a farm to help with food sustainability

Station 2 - Google Arts and Culture

- Students explore [5 designs defining the future of food – Google Arts & Culture](#) and answer the following questions about each design:
 - Which of the 5 designs do you think is the most effective in food sustainability? Why?
 - Which design do you think needs improving? Why? And how would you improve it?
 - Which design would you most want to try/ explore? Why?
- Students may work in pairs

Station 3 - Research

- Students view 1-2 of the following videos on different technologies that are being used to help food sustainability
 - [The Futuristic Farms That Will Feed the World | Freethink | Futu...](#) (6:20)
 - [5 AI-Enabled Farming Robots | Future of Farming ▶ 2](#) (8:35)
 - [5 Vertical Farms Run by AI and Robots | Future of Farming ▶ 3](#) (12:00)
- Students take notes on the video and the technologies used in their student digital notebook.

3

Conclusion
(10-15 mins)

- Ask students to choose a technology they have viewed and provide a 30 - 45 second recorded response to the following questions on [flip](#):
 - What technology have you chosen??
 - How does it aid food sustainability?
 - In your opinion, how effective do you think this technology will be in aiding food sustainability? Justify your answer with an explanation.

Modifications

Adaptations

Students may record their responses in pairs.

Extension Ideas

Students may create or invent their own sustainable food technology idea and present using CoSpaces or Tinkercad.

Students can download their responses from flip and create an AR experience of the chosen technology using [Eyejack](#).

Curriculum Connections

Australian Curriculum	NSW Curriculum	VIC Curriculum
<p>Year 9-10 - Digital Technologies</p> <p>Define and decompose real-world problems with design criteria and by interviewing stakeholders to create user stories (AC9TDI10P04)</p>	<p>Stage 5 - Food Technology</p> <p>communicates ideas and information using a range of media and appropriate terminology FT5-9</p> <p>evaluates the impact of activities related to food on the individual, society and the environment FT5-13</p>	<p>Levels 9 & 10 - Design and Technologies</p> <p>Investigate and make judgements on the ethical and sustainable production and marketing of food and fibre VCDSTC057</p>
<p>Year 9-10 Design and Technologies</p> <p>Analyse how people in design and technologies occupations consider ethical, security and sustainability factors to innovate and improve products, services and environments (AC9TDE10K01)</p>		

<p>Analyse the impact of innovation, enterprise and emerging technologies on designed solutions for global preferred futures</p> <p>(AC9TDE10K02)</p> <p>Analyse and make judgements on the ethical, secure and sustainable production and marketing of food and fibre enterprises</p> <p>(AC9TDE10K04)</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