Unit Title	Virtual Reality – what can we use it for?	Year level	7/8	Number of lessons	2

Unit Plan

This unit of work will see students investigating the impact of new technologies, such as virtual reality, on supporting people to better understand concepts that are necessary for designing solutions for global preferred futures.

The core concepts covered in this unit of work are:

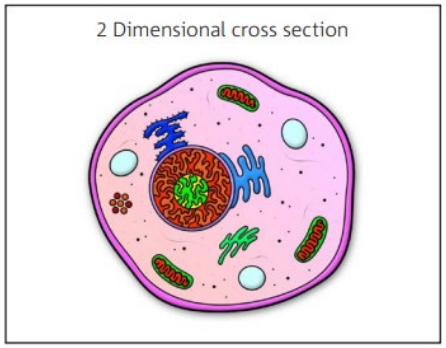
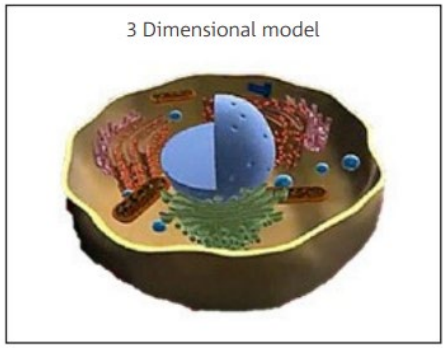
- *Design thinking*
- *Creating solutions for preferred futures*

By the end of this unit, students will:

- define and decompose real-world problems
- develop design criteria
- create user-stories
- design a user experience for virtual reality
- evaluate each other's solutions against design criteria, user stories and future impact

Lesson Plan

Lesson	*Teaching and Learning Activities*	*Resources*
1	By the end of this lesson, students will demonstrate an understanding of how technologies can support people's understanding of concepts, define and decompose real-world problems, create user stories and design a user experience for virtual reality.	
	Discuss the learning goals of today's lesson (**5 min**) Lesson content **(10 min)** • **Watch the video:** My digital career: Kate Patterson - CSIRO • Ask students whether this advance in technology, VR, is useful? • Ask students who has used virtual reality before? Who has used Pokémon Go? Show the Pokémon Go trailer (https://pokemongolive.com/rediscovergo?hl=en). Discuss the difference between virtual reality and augmented reality. Student activity 1 **(15 min)**: Ask students to form groups of 3-4. Compare the two cell representations and write down on a sticky note two strengths and two weaknesses. Stick to the wall.	Pens, sticky notes Video: My digital career: Kate Patterson - CSIRO For the discussion on the difference between virtual and augmented reality: https://pokemongolive.com/rediscovergo?hl=en and AR/VR (digitaltechnologieshub.edu.au) User story worksheet CSIRO resource worksheet (modified) Hwk: Think of a VR experience that would be useful for explaining a concept or solving a problem, for next lesson.

	  Discuss the group's thoughts. Student activity 2 **(10min)**: Introduce the class to the Stories and Structures Exhibition. Stories and Structures – New Connections - Microscopy Australia Discuss how the artists connect personal experiences with the microscopic images and uses them to convey a story. For example, Arkeria Rose Armstrong uses the image of a blood clotting cell from a crocodile to inspire her work about a Dreamtime Story told by her family around the campfire at Lightning Ridge where she grew up. Student activity 3 **(15 min)**: Ask the students in their groups to think about a user story that they have a connection to for creating a cell in VR. What could the user story look like? Fill out the worksheet. Ask each group to select a speaker, and discuss their user story with the class Student activity 4 **(15 min)**: Ask the class to think through the steps in their VR. Fill in the worksheet.	Possible hwk resources to direct students to: First Nation Song Lines: Preserving Indigenous culture through VR: Brett Leavy's Virtual Songlines | ACMI: Your museum of screen culture Climate change - https://earthobservatory.nasa.gov/features/videos/the-ozone-hole Spin - http://news.bbc.co.uk/sport2/hi/cricket/skills/4173584.stm Bread - https://www.youtube.com/watch?v=b4yeqG0yIas and https://www.youtube.com/watch?v=iyWtp_L0Kzc Music - https://www.didjshop.com/physicsDidjDreamtime.html and http://aboriginalart.com.au/didgeridoo/what_is.html

	The perfect model Imagine you could use VR technology to make the perfect model of a cell or another related biological concept. Attempt to brainstorm below the main features of your virtual reality tour that would make this representation the "perfect model"  What are the steps in the tour? / What would it look like? / How would it make the audience feel? / What would it highlight? Wrap class and ask them to think about a concept they would like to make into a VR experience. Remind them of the Pokémon Go trailer and then the CSIRO Video about cells. Remind them that the experience they choose should have a future impact on those that watch it e.g. be helpful for understanding a concept better, help solve a problem. You could provide the students with some examples, such as: • Climate change – a time lapse VR experience where students could move through time and look at the effect on the ozone layer of pollutants, assuming pollution continues at the current rate • Sports – looking at how to get spin on a cricket ball, by trying different throwing techniques • Bread making – a virtual reality experience that enables students to zoom down to the scale of yeast, and see how the yeast causes bread to rise • Music – a virtual reality experiences that shows you how air moves inside a didgeridoo (using the appropriate language for the land of the nation you are on, or another instrument of your nation), and shows the movement of air for different sounds	
2	By the end of this lesson, students will demonstrate an understanding of how technologies can support future solutions, define and decompose real-world problems, define design criteria, create user stories and design a user experience for virtual reality. They will evaluate each other's solutions against design criteria.	

	Discuss the learning goals of today's lesson (**5 min**) <u>Lesson content **(10 min)**</u>: Discuss the importance of design criteria. Ask students to brainstorm some design criteria for the VR experiences e.g. engaging/fun, easy to use, accurately portrays the concept, reliable, cost. Highlight the 4 criteria the students will be using to evaluate each other's VR experiences. Tell the students they will also evaluate each other's VR experiences based on the future impact the VR could have. Guide students to think about possible ethical/moral issues that may arise while creating your VR experiences. Example, Pokémon Go needed to be modified to ensure people were not walking onto private property or playing while driving. How will the VR Experiences be perceived by others? Could it upset/offend anybody? <u>Student activity 1 **(30 min)**</u>: Students go back into their groups and select 1 VR experience to work on. Ensure students know they have **30 minutes** and give a warning for the last 10 and 5 minutes. Students should fill in: • A user story for their VR experience • Storyboard the steps in their VR experience • Stick their storyboard and user story to the wall <u>Student activity 2 **(10 min)**</u>: Give each student a sticker and the design criteria grid. Ask students to choose their favourite storyboard, place a sticker on it and write down how this VR experience meets the design criteria. Wrap up by discussing some of the feedback on the storyboard and user story with the most stickers. **(5 min)**	Pens A3 paper User story worksheet Blu tack Design criteria grid Stickers