DairyNZ

Utilising Future Problem Solving to think about global solutions.

UNDERSTANDING WATER SCARCITY AT A GLOBAL AND NATIONAL SCALE.

ESSENTIAL QUESTION

Water water everywhere and not a drop to drink.

WHAT ARE WE LEARNING?

- Using growing science knowledge when considering issues of global concern.
- Understand how different forms of functional modelling are used to explore possibilities.
- Understanding that water scarcity is a global issue.

TRY THIS WITH

- Years 5 - 11
- Students who love debating pros and cons.
- Students who enjoy scenario based activities.

FIND

Relate	Outline
Report	Trace
Review	Locate

Play Catchment Detox to identify the complex issues surrounding water mangement.

Utilise the imagery function in Google Street View.

Find a Street View water picture for each continent.

Create a class thinglink of your images using a digital copy of a world map as your base.

Discuss similarities and the differences across the world.

Ask: Where does water come from?

Investigate the overharvesting of water as a global issue.

Make a YouTube playlist of videos on water scarcity.

Support students to use TEDEd to flip a video from the playlist and share with others.

Listen to the Minister for the Environment talk about New Zealand water statistics.

APPLY

Simulate	Establish
Discover	Model
Discriminate	Construct

Understand the concept behind Toby Ng's World of 100 Infographics.

Take a look at Virtual Water and Water Scarcity Stats at The Water Project.

Support students to convert a statistic they source from the above into a percentage.

Convert the percentage to a numerical sentence in the style of World of 100.

Source a Creative Commons image that can use as the background image for your pic.

Use Canva to create a water scarcity infopic based on the World of 100 model.

Consider creating and adding a QR Code with links to extra information about the issue.

Return to Catchment Detox and complete a second 100 Year game.

PRODUCE

Maximise	Construct
Minimise	Integrate
Validate	Innovate

Watch Steven Colbert interview Dean Kamen about his water purification invention.

Ask: Why would the UN need to set a goal to ensure access to water and sanitation for all.

Explain that 50% of all human disease is as the result of waterborne diseases.

Give students the following scenario:

"It is 2223 – Global Clean Water Scarcity has reached crisis point. The International Water Symposium requires a top team of researchers to identify brave and innovative solutions for securing clean drinking water for at risk populations."

You must:

Be inspired by the NAE Grand Challenge for Engineering background paper.

Identify the issues that affect water cleanliness and scarcity.

Conduct research into current innovations in clean water provision (include desalination).

Use your research and the Design Thinking Process to prototype a possible solution.

SUCCESS CRITERIA

Students can check they have completed the task successfully by:

- Create a thinglink that demonstrates contrast in water quality/access across the world.
- Create an infopic focussed on a single percentage to demonstrate water scarcity.
- Utilising the Design Thinking process to develop an idea to combat water scarcity.

PRINCIPLES	VALUES	KEY COMPETENCIES	LEARNING AREAS	WORD BANK	KEY CONCEPTS
Future Focus	Ecological Sustainability	Thinking	Social Science	Scarcity	Decision Making
Treaty of Waitangi	Equity	Using language, symbols and texts	Mathematics	Desalination	Consequence
		Relating to others		Crisis	Water Scarcity
				Harvest	Water Harvesting