Master of Educational Technology Program

6 CLEAN WATER AND SANITATION

14 LIFE BELOW WATER

Water Inclusive Makerspace Challenge

Protecting Our Waterways and Oceans

Inspired by: Paula Huddy-Zubkowski

Overview of the challenge

In this challenge, learners investigate water sustainability and identify ways to support a variety of water issues pertaining to water sustainability to ensure safe, clean, accessible water for future generations.

Materials and Resources Required

a) [ChangeMAKER website](#)

b) [Watch](#) a National Geographic video about volunteers removing ghost nets from the ocean.

c) National Geographic [Lesson](#)

    d) [Waterwheel Earth Day STEM Challenge](#)

Additional Resources

    e) [Water Design Challenges for all grades](#)

    f) [Explore By the Seat of your Pants - Sea turtle hospital](#)

    g) [Google Voyager Story - Who lives in the ocean?](#)

h) [Live Video Webcams](#)

i) [Oceanwise](#)

j) [Canada C3 - microplastics video](#)

Inclusive Maker Challenge Instructions

Spend the next few minutes examining the links provided in the materials section above. After viewing the content, complete the tasks below.

Watch the video below to see how people are protecting our water.

Become a ChangeMAKER and be a Water Protector. [Read Aloud](#) this text called, *We are Water Protectors*
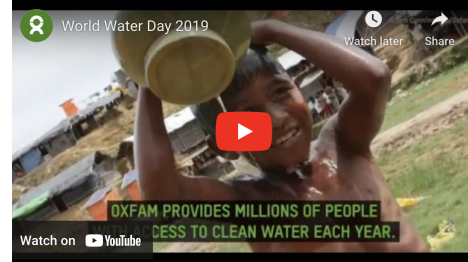

view the accompany [Lesson Plan](#)

Choose one of the two options below to complete while following the [design process](#)
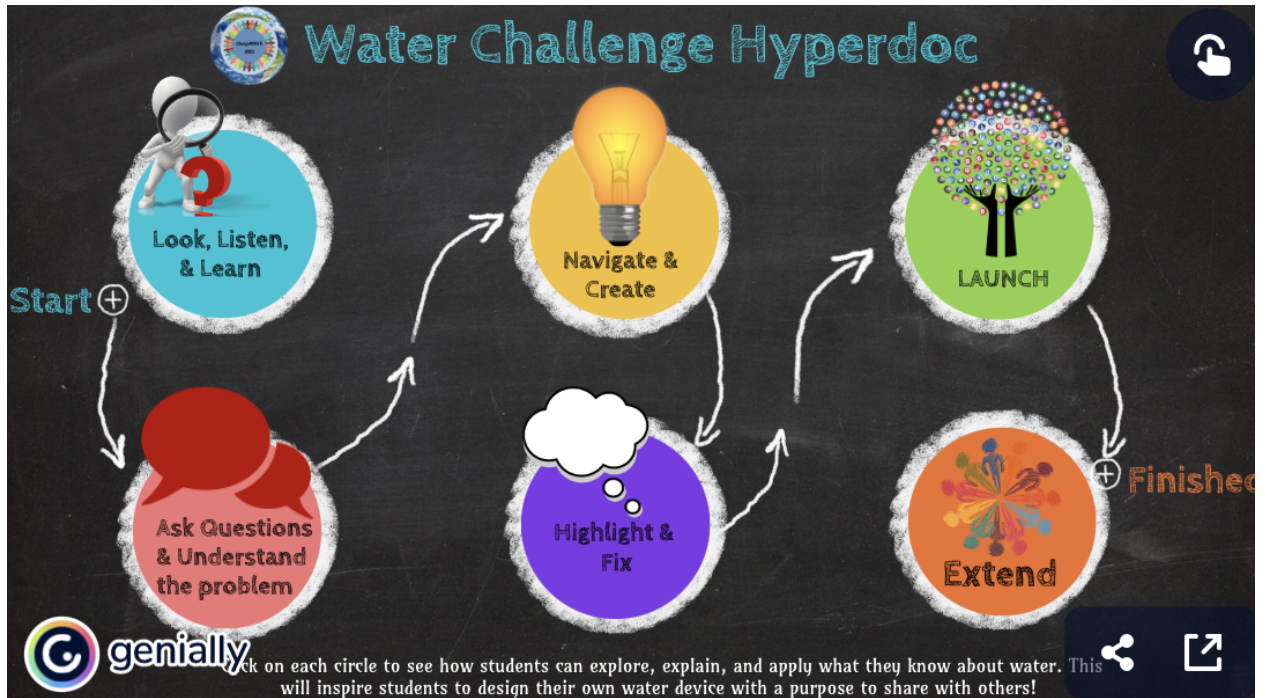
Option 1

Option 2

Have you connected with the ocean? Build a device to protect the ocean. There are endless possibilities to consider?

Can you construct a device to help people who walk far distances, get their water back to their homes? Or can you help them build a device to help retrieve water from a well?

Be prepared to move your ideations to execution through the design of a prototype and then into the testing phase of your prototype.

1. Use the lesson plan templates (printable design planning sheet and Tinkercad Design Thinking Process- Digital Process) to 'make' from the option you chose above.

Use this hyperdoc as a teaching tool for your students to access. This can guide your class through the design process. **LINK**

Critical Questions for Consideration

a) Why is the study of water sustainability important?
b) What UN Sustainability goals aligns with water sustainability?
c) What is your plan to help solve this problem?
d) What problem(s) are you solving?
e) Why is this a problem?
f) What audience are you making this for?
g) How might this item benefit this audience?
h) What barriers do you foresee having?
i) What is your plan of execution?

j) How might you encourage others to get involved in helping to sustain the world's water systems and those who access them?
k) How might you showcase this item to a global audience?
l) What are your next steps?

Background/ Additional Information

The water crisis claims the lives of 3.4 million people a year.

Water is at the core of sustainable development and is critical for socio-economic development, healthy ecosystems and for human survival itself. It is vital for reducing the global burden of disease and improving the health, welfare and productivity of populations.

Review these sites to learn more about the importance of water sustainability.

Inclusivity Focus

When introducing this topic you will want to introduce themes around access to clean water, sustainability, classism, marginalization, and oppression and how this essential need is not accessible to all and if humankind keeps up with our practices of pollution, waste excretion, and environmental racism, we will enhance the water scarcity issue to the point that future generations will not have access to clean, usable, and drinkable water.. These are sensitive topics and you will want to investigate these themes from a sensitive, responsive, and inclusive lens. Please check your own inherent biases in order to create a safe and welcoming learning

environment for all of your students to freely express their ideas and sound opinions pertaining to this topic.

No Tech, Low-Tech, High-Tech Options

In this challenge you have the opportunity to approach this topic and utilize no-tech, low-tech, and high-tech options in a variety of capacities from idea generation, to prototype creation, to presentations and sharing and communicating findings.

Extensions

Please see the list below for extension examples and share your own ideas by tweeting your ideas to #UBCMETmakerchallenge.

1. Investigate the additional information above and create an infographic, podcast, video, or campaign to bring awareness to water sustainability and scarcity issues.

2. Challenge your school/community to complete a water footprint inventory and sharing the results for the purpose of eliciting change.