THE UNIVERSITY OF BRITISH COLUMBIA
Faculty of Education

Protecting the Waterways

Inclusive Makerspace Challenge

Ensuring there is viable drinking water for all.

Overview of the challenge

This challenge exposes makers to the idea of possibilities of being an agent of change through the process of examining the Indigenous water crisis and the equity and equality of access to clean water. This challenge addresses Environmental Racism.

Materials and Resources Required

Map: **Water Safety in First Nations**

Interactive Map: **WWF Watershed Report**

Water Today: **Daily Advisories**

Environmental Racism

No Tech Tools can include (but are not limited to)

- cardboard
- glue
- scissors
- string/yarn/twine
- construction paper
- popsicles
- pompoms
- pipe cleaners
- tape
- recyclable items
- bbq skewers
- tooth pics
- straws
- playdough
- clothes pins

Low Tech Tools can include (but are not limited to)

- Ozobots
- Cublets
- Beebot
- Code-a-pillar
- Sphero
- Tinkercad
- DoInk
- Animation Creator
- Flip-a-Clip
- StopMotion Recording

- <u>Garageband</u>
- <u>iMovie</u>

High-Tech Tools can include (but are not limited to)

- 3-D printer
- Sphero
- Makey Makey
- Dash and Dot
- Ollie

Note: many of the low-tech tools can also be combined with other educational technology tools to redefine the inclusive makerspace challenge using technology in innovative and critical ways.

It is also recommended to explore and discover digital tools and robots to be used in critical and creative ways.

Inclusive Maker Challenge Instructions

Spend the next few minutes examining the links/QR codes provided above.

After viewing the content,

a) What are your initial questions?
b) Concerns?
c) Observations?

d) Inquiries?
e) Issues?

Identify the problem presented in this information.

There are so many people who care about the water and want to do something to help ensure that Indigenous peoples have access to fresh drinking water. Access to clean and drinkable water is a systemic issue and something that has not been effectively addressed by the government.

What is required are effective tools to help citizens and scientists easily record, analyze, and treat the water in order to create a balance of basic needs.

Consider the importance of decolonization and anti-Indigeneity and using the materials available (or ones of your own choice), create an innovative solution to this problem.

Consider the following prompts/critical questions below as you begin to design.

Critical Questions for Consideration

1. What is the problem?
2. Why is this a problem?
3. What are the possible solutions?
4. What can be designed to help with these solutions?
5. How might you justify your design to an audience in education (teachers/students)? Government (deputy ministers, municipal leaders)? Corporate leaders? Healthcare?
6. How does this tool or design support Indigenous peoples?
7. How does this tool or design complement or speak to the 94 Calls for Action?
8. How is this tool/design utilizing the EDIDA frameworks?

Background/ Additional Information

Government of Canada. (2022, March 22). *Map of long-term drinking water advisories on public systems on reserves*. Government of Canada Website. https://www.sac-isc.gc.ca/eng/1620925418298/1620925434679

Water Today. (2022, June 13). *Canada's daily boil water advisories*. Watertoday.ca. https://www.watertoday.ca/textm.asp

World Wildlife. (2022, May 29). *Canadian watershed reports*. WWF. https://watershedreports.wwf.ca/#canada/by/threat-overall/profile

Inclusivity Focus

When introducing this topic you will want to introduce themes around water scarcity and accessibility, sustainability, decolonization, marginalization, and oppression and the inequalities that exist with access to fresh drinking water for Indigenous communities. 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

See the materials list for options of no-tech, low-tech, and high-tech options for this challenge.

Extensions

There are endless opportunities for ways to create a viable solution for clean water accessibility for Indigenous peoples. To share your own ideas and examples, tweet #UBCMETmakerchallenge.