



Lesson + Activity: Water for the World



Grade Level(s)	Timeframe
K-2, 3-5, 6-8	60 min

ABSTRACT

Water for the World is a non-profit, educational initiative to deliver workshops to K-12 students to raise awareness about Sustainable Development Goal (SDG) #6—lack of safe access to clean water and sanitation. The workshops consist of a number of different activities that are designed for visual, auditory, and hands-on learners, and are catered to the specific age groups to which the workshop is to be delivered. Some examples of the workshop activities include 1) simulating an oil spill, 2) class debate, 3) building a water filter, and 4) role playing. See <https://torontopro.ewb.ca/en/water-for-the-world/>

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Alternate search terms: water, SDGs, sustainable development, sanitation, oil spills, clean water

Series: Water for the World

Delivery Method #1: Hybrid Version with Moderator (you) facilitating virtually and students all together in-person

Delivery Method #2: Full Virtual Environment with Moderator and Students all accessing content through home

- tested and ready.

Until the pandemic, the workshop was designed for the facilitator to be in the classroom with the class.

Time: 1 - 4 lessons of 60 minutes each.


EQUIPMENT AND SUPPLIES


If the oil spill experiment in the grade 3 - 5 workshop is run, the following materials will have to be collected, whether in the classroom or at home:

- One cup and one bowl
- 4 tablespoons of oil
- Food colouring
- Paper towel or cotton balls
- A piece of cardboard or paper
- A Spoon
- Dish soap
- 1 cup of water
- You will need to find something to put your garbage into

Don Ball has sand of various coarsenesses for the filtration experiment.

LESSON FILES

 013_2.docx

 013_3.pptx

GETTING READY

Notes:

English, partial French

K – 8, according to the folders with workshop materials at

https://drive.google.com/drive/folders/1QzEDK3ySVuiC_eTCuEg9WSwvpYdW8WiY . The EIR Guide at

<https://docs.google.com/document/d/1MqhFC7s4hMeP6JKYYqEBavTomxKs4fc7MYVZtUszQkU/edit> says K – 12. However, I have been told that K – 8 is correct.

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Engineers without Borders (EWB), a not-for-profit organization, designed the Water for the World (W4TW) program some years ago for the classroom environment. Teams of students would build simulated water filtration systems. Each team would come from a different country and would have access to different resources to build their water filtration system. In 2020, during the pandemic, EWB updated their classroom workshops, and also modified them for both a hybrid and a virtual environment.

The workshop materials can be found at

https://drive.google.com/drive/folders/1QzEDK3ySVuiC_eTCuEg9WSwvpYdW8WiY

The folders show different variants of the lessons for K-grade 2, grades 3-5, and 6-8. The following describe the approaches two EIRs took for this workshop. You can try one of these approaches, a combination, or your own variant!

First Approach

In a grade 4 – 5 French Immersion class, we ran Water for the World in 3 blocks as follows:

1. We started the virtual grade 3 – 5 workshop and did the oil spill experiment. The students all did the experiment at home, and LOVED it. (Later that day, the teacher got emails from a few parents about how much their kids enjoyed this experience.) However, we did not have time to discuss the questions of slide 16.

2. On the second day, we started with the discussion from the oil spill experiment. Then we continued with the slides about the Global Water Crisis. Then we played the board game (Water and Pandemic Game). We played the version that was translated into French by the teacher and her daughter. (Also changed Toronto to Ottawa, of course! :) We noted the caution in the presenter's notes that this game is difficult to run in a virtual setting. We tried it anyway and it worked out well. Each student got a chance to decide an activity (which consumes water and energy). The teacher recorded the consumption of water and energy at each location, by putting 'x' marks in the ppt file. We got through one day's activities in Ottawa (non pandemic) then one day in Neskantaga (non pandemic), then one day in Nairobi (pandemic) then one day in Ottawa (pandemic). At this point, our time was up, and we had not discussed the findings.

3. On the third day, we started with discussion of what we had learned from the board game. Then we did the grade 6 – 8 presentation, watched both videos, and did both True or False activities. That went well. So for us, the grade 6 – 8 workshop went much quicker than the grade 3 – 5 workshop. The combination of both was fantastic! The grade 6 – 8 workshop was more technical, but easily within the reach of the class.

Then the EIR showed 2 videos of a water filter he had made in the way we did it before the pandemic (2L pop bottle with bottom cut out, cotton batting at the mouth to hold in the sand and gravel, then fine sand, then coarse sand, fine gravel, coarse gravel). He poured some filthy water through it and waited, and showed the result after the filthy water had filtered through. The 2 videos are in the folder at this link:

<https://drive.google.com/drive/folders/1I59HXlekJ1NulvlzHuR0K0QMtArPy2kL?usp=sharing>

The .mp4 files are compressed versions of virtually same quality as the larger .MOV files.

4. After that, the teacher gave an assignment to her grade 4-5 class. They are to create a lesson for younger students in grade 2 or 3. The topic is to inform the younger students about the importance of protecting water. The assignment, with web sites for resource info, is attached (in French). These lessons were delivered to the younger students.

Second Approach

Another EIR took the following approach in a single class of 60 minutes with a grade 6 French Immersion class, using the grade 6 - 8 workshop in the EWB folders:

1. The class watched the two YouTube videos from the virtual presentation in advance of the lesson (one or two days previously).
2. The lesson included an introduction to the topic (safe water and water treatment), they did the T/F quiz in the virtual presentation with some added class discussion.
3. We discussed different types of water treatment, with focus on Canadian municipal water treatment systems.
4. The EIR had prepared the "water filter" from the original activity (granular and sand filter in a pop bottle).
5. The EIR provided PDF instructions to build the water filter to the teacher/class for them to complete after the lesson (the week following, the teacher continued on with this).
6. The EIR also provided the sheet for tracking how much water you use in a day and encouraged the kids to print and track their water use for a day.

With only an hour for this class, they couldn't get into the role different persons play in safe water (geographers, teachers, engineers etc.). However, the EIR did like that focus and she thinks that if she could have been in class, they could have spent some time on that.

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One of the kids from the class found this Mark Rober video after the class. It's a great compliment to the lesson and Mark Rober has a big fan base with kids.

<https://www.youtube.com/watch?v=6qZWMNW7GmE>