



Education & Capacity Building

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Introduction

This playbook is designed to provide instructions, tools, and resources to help you host an event or attend a volunteer activity centered around education & capacity building. Learn more about the importance of education, how to sign up and volunteer, tips on hosting your own event, and ways to stay engaged.



Start Here

How to Get Started:

1. Review the water education presentations and the lesson plans in this playbook.
2. Find your audience. Here are some suggestions for connecting with a group to present to:
 1. Contact school administrators, teachers, club leaders, or coaches of children in your life. (Family, friends, neighbors, etc.)
 2. Contact nonprofit organizations or youth groups (After school programs, Scouts, Camps, etc.)
3. Based on the number of youth, determine the appropriate number of volunteers for this event. Volunteer should not outnumber students. A ratio of 1:5 is recommended for more hands-on activities.

Start Planning:

1. Reach out to your point of contact to share your idea and schedule the activity.
2. Meet with volunteers in advance to discuss what materials are needed for your activity and who will be presenting each part.

Two Weeks Prior to Event:

1. Send out reminders to volunteers.
2. Follow up with your point of contact and check that everything is on schedule.
3. Email all volunteers with volunteer assignments, directions, and instructions.
4. Organize required materials.



Flushing Challenge

Lesson Objective: To understand the importance and commit to only flushing the correct items down the toilet.



Location:
In-person



Volunteers: 1-
10



Time:
1 hour

Materials needed:

1. [Flushing Challenge Classroom Kit](#)
2. Poster paper if making the poster by hand
3. Pens, markers, & pencils
4. Stickers
5. Pictures
6. Printed out Flushing Challenge Pledges for students to sign

Instructions

1. Present the Flushing Challenge presentation and follow the prompts
2. Complete the online puzzle activity as a class
3. Complete the poster activity. Depending on class size, break up into smaller groups and make multiple posters on paper, or complete the online poster as a class.
4. Have students scan the QR code and complete the Kahoot.
5. Read aloud the Flushing Challenge Pledge and have students sign their own.



Reading Circles: The Great Book of Water

Lesson Objective: Educate students on the water bodies in Latin American and India, and how they can help conserve water in their region



Location:
In-person



Volunteers: 1-
10



Time:
45 minutes –
1 hour

Materials needed:

The Great Book of Water

- In Spanish (Latin America): [The Great Book of Water](#)
- In English (Latin America): [The Great Book of Water | Latin America](#)
- In Portuguese (Latin America): [O Grande Livro da Água | América Latina](#)
- In English (India): [Xylem | Let's Solve Water](#)

Instructions:

1. Introduce Xylem and Xylem Watermark
2. Divide the students in groups and have them sit in a circle
3. Have students take turns reading

Discussion by chapter:

Chapter 1

1. How is the water cycle where you live?
 1. Do you know how much it rains where you live?
 2. Which are the driest months?
2. How is the ecosystem where you live?
 1. Do you know the name of the closest river to your city?
 2. What are the main features of your ecosystem?

Chapter 2

1. How much does temperature vary in your city?
2. How does temperate change in your city between day & night?
3. What is the highest and lowest temperature it reaches? In what season?

Reading Circles:

The Great Book of Water

Chapter 3: Experiment – What is Wastewater?

Materials:

1. 1 plastic bottle of 1 liter or more
2. 2 tablespoons of vegetable oil
3. 1 tablespoon of shampoo
4. 1 piece of soap
5. Potato peels
6. 3 tablespoons of vinegar
7. 1 handful of sand

Instructions:

1. Take the plastic bottle and fill it halfway with water
2. Add the oil, shampoo, soap, and vinegar to the bottle. Put the lid on and shake it
3. Add the potato peels
4. Add the sand and shake the bottle
5. Observe the bottle. What color is it now?

Discussion:

Can you think of a way to separate and remove the contaminants from the water so it can go back to being transparent? Propose a way of doing it by applying what you learned in this chapter.

Chapter 4

1. Does everyone have access to water in your city?
2. How can we help solve water scarcity?

Chapter 5

1. Do you know how much water you use in your household?
2. How can we help solve water scarcity?

WASH x Football



Location:
In-person



Volunteers: 1-
10



Time:
1 hour

Xylem has partnered with Manchester City to create 6 learning modules that combine coaching sessions with important lessons on water access, sanitation & hygiene (WASH). The learning modules showcase fun and engaging games that simultaneously educate players on:

- Germs
- Washing your hands
- The importance of water filtration
- Keeping the environment clean & waste disposal
- Reducing waste & water use
- Water conservation & protection

Share the six video tutorials with any schools or football/soccer teams in your community! Access the link here: [Wash Football - Water Heroes](#)

Coaches will gain access to video tutorials led by Manchester City players, a quiz to test their knowledge and a printable [Wash Education Curriculum Booklet](#)

Have fun!

Contaminated Water Lesson

Lesson Objective: Raise awareness on the importance of keeping water bodies clean



Location:
In-person



Volunteers: 1-
10



Time:
30 minutes

Materials Needed for Every 2 Students:

- 1 cup of clean water
- 1 tablespoon of vegetable oil
- 2 cotton balls
- 1 spoon

Instructions:

1. Have students split into pairs
2. Pass out materials to pairs of students
3. Pour the clean water into the bowl
4. Add a tablespoon of vegetable oil
5. With the cotton balls and the spoon, try to remove the oil that's in the water without emptying the plate
6. After a while look at the water. What happened? Was it as clean as it was before the vinegar? Would they drink it?

Discussion: 10 minutes

After the experiment, explain how difficult it is to clean the water so students can understand the effort and cost of an oil spill or a stream of garbage in the ocean.

Explain how contaminated water can cause serious and fatal diseases throughout the world which mainly affects children.

This experiment can teach students not to litter and to pay attention to what they put in the water.



Water is Running Out Lesson

Lesson Objective: Raise awareness on how wasting water can affect everyone and everything



Location: In-person & take home



Volunteers: 1-10



Time: 10 minutes in class, overnight

Materials needed per class:

1. 1 one-liter container
2. 1 digital clock
3. Water faucet

Instructions:

1. Place the empty container under the faucet
2. Adjust the water pressure so that only drops fall
3. Leave over night with the timer on
4. The next morning, look at the time it takes for the container to fill up

Discussion

This lesson emphasizes the importance of closing water taps properly and avoiding leaks. Students should be encouraged to imagine the amount of water that's wasted if days, weeks, or months go by without repairing pipes.



There's No New Water Lesson Plan

Lesson Objective: Learn how much water is on the planet and where it's stored



Location:
In-person



Volunteers: 1-
10



Time:
20 minutes

We have a responsibility to protect water in all its forms. The freshwater found in groundwater, rivers, and lakes is our primary source of drinking water.

Groundwater and fresh surface water make up a very small percentage of the Earth's total water supply.

Materials needed:

1. 5-gallon bucket
2. Jar labeled "freshwater"
3. Cup labeled "groundwater"
4. Small jar labeled "river and lakes"
5. Tablespoon
6. Eyedropper (optional)
7. water

Instructions

1. Fill the 5-gallon bucket with five gallons of water. This represents all the water on Earth including the water that is contained in the atmosphere, glaciers, ice caps, streams, lakes, rivers, oceans, and groundwater.
2. Take out 25 tablespoons of water from the bucket and place it in the large clear jar labeled "freshwater." This represents all the freshwater on Earth (water contained in the air, glaciers, rivers, ponds, lakes, and groundwater). All the remaining water in the bucket represents all the salt water on Earth.
3. Take out eight tablespoons from the freshwater supply and place it in the cup labeled "groundwater." This represents all the groundwater on Earth.

There's No New Water Lesson Plan

Instructions continued

4. Take out one tenth of a tablespoon (or 25 drops with an eyedropper) out of the freshwater supply and pour it in a small jar labeled "rivers and lakes." This water represents all the water in rivers and lakes on Earth. All of the water contained in the atmosphere in clouds, rain, and snow, and all the water on the planet that's frozen in polar ice caps and glaciers.

5. Talk about the amount of water in each container, where we get our drinking water from, what other purposes surface water has, and ways to conserve water.

Discussion:

1. Would it be easy to collect a cloud or wait for it to rain to fill up a cup of water?
2. Is it easy to chip away a chunk of ice, then melt it to fill up a cup of water?
3. Is it easy to drink water from the ocean?
4. Why is it important to help protect and conserve the freshwater available for drinking?



The Value of Water

Lesson Plan

Lesson Objective: to understand the value of water and discuss ways to reduce their water usage in everyday life.



Location:
In-person



Volunteers: 1-
10



Time:
25 minutes

Instructions

1. Present the water education lesson
2. Ask students to share their ideas on how they can reduce water usage by drawing actions they can implement into day-to-day life
3. Ask students to title their drawings
4. Once everyone is done, have volunteers share what the students drew.

Materials needed:

1. Poster paper
2. Printer paper
3. Crayons & markers
4. Tape

Discussion

1. What sorts of water problems are there?
2. Which one of these is not a way to save water?
 1. Having showers instead of baths
 2. Having a water fight
 3. Wearing the same clothes multiple times



Why is Water Important?

Mural Lesson

Lesson Objective: learn about important environmental issues through creativity



Location:
In-person



Volunteers: 1-
10



Time:
1 hour

Materials needed (indoor mural):

1. Easel paper
2. Crayons & markers
3. Paint
4. Tape

Materials needed (outdoor mural):

1. Colored chalk

Preparation (indoor)

1. Set up an art table at a good height for students to reach.
2. Set out materials, tools (brushes, sponges, etc.), and a simple demonstration sample on the table.
3. Tape the easel paper to the wall at a good height for students. Make sure the paper is large enough for 5 students to work next to each other.

Preparation (outdoor)

1. Collaborate with teacher on picking a location for the chalk mural
2. Set up buckets with the chalk
3. Draw a frame with the chalk where students will draw the mural (around 6.5ft x 3ft)

Instructions

1. Present the water education lesson and explain why water is important
2. Brainstorm with the class what they'd like to paint
3. Depending on the class size make 1 or 2 murals
4. If the mural requires more time, this can just be the start
5. Students can take turns drawing/painting
6. Ask the teacher if they can showcase the mural at school

Discussion

1. Why is water important?
2. Where do we use water? Who uses water?
3. How can we help save water?

Participate in EWB-USA's STEM Outreach Program

[Engineers Without Borders USA](#) (EWB-USA) is launching a new STEM outreach program specifically designed for community college students to promote diversity in STEM and explore real-world global challenges — particularly how engineering contributes to community development. Clean water, essential for life and the most common need requested by communities partnering with EWB-USA, is the initial focus of the program. See below for ways in which you can get involved.

Facilitator Training

Watch this training and learn how to facilitate a clean water workshop at your local community colleges.

Recordings

To watch the facilitator training, you can access the it here: [EWB-USA STEM on Vimeo](#)



When Disaster Strikes

Lesson Objective: learn about important environmental issues and use creativity in a helpful way



Location:
In-person



Volunteers: 1-
10



Time:
30 minutes

Materials needed:

1. Timer (cell phone)
2. Resources
 1. [“What Would You Bring?” Story](#)
 2. [“What Would You Bring?” Items](#)
 3. Emergency Kit Checklist (to handout after activity)
 4. [Talking Points](#) (at the end of this section)

Agenda

- Introduction (3 minutes)
- Who is Mercy Corps (1 minute)
- When Disaster Strikes: What Would You Bring? Activity (15 minutes)
- Debrief Discussion (5 minutes)
- Emergency Kit Checklist (2 minutes)

Logistics

1. Before the event, decide how you will share the resources. If sharing electronically, have links pulled up on your computer & ready to share, or print out the materials to pass out.
2. Make sure to have your timer (cell phone) accessible and don't forget your talking points!

Instructions: When Disaster Strikes: What Would You Bring? Activity

- Participants will empathetically connect to the challenges and choices individuals are faced with after disaster strikes. Within small groups, participants must make decisions as a “family unit” to decide which items they would bring on their journey to safety with limited time and information.

Directions:

- Divide participants into small groups.
- Set a time for 10 minutes.
- When there are 2 minutes left, announce to the groups that 2 minutes remain, so it's time to wrap up discussions.

When Disaster Strikes

Instructions: When Disaster Strikes: What Would You Bring? Activity Continued: Discussion Questions

| Question | Facilitator Response |
|---|--|
| Which item was most critical to keep for your group? | Ask a member from each group to share. Make organic observations based on trends. Ex; everyone has chosen the same items |
| What was motivating your choices? Did you ever feel confident with your choice? | If no one responds, ask "How do you think personal past experiences influenced which item card you were motivated to keep?" You can also talk about your answer. |
| Did Mercy Corps' emergency response efforts align with how you imagine humanitarian response to be? | A few notes to facilitate this conversation: The sample in the story is representational. There is no "one-size-fits-all" approach. Mercy Corps is committed to delivering rapid assistance driven by the needs of the communities we're serving. Why cash? Cash offers recipients more flexibility and dignity, giving families the opportunity to make their own choices and prioritize their most urgent needs. Donating old clothes or toothpaste isn't always the most helpful thing. |
| What is a main takeaway for you from this activity? | Give time to let individual participants speak up If no one brings this up in the group, add in this key takeaway - "If I can help it, I don't want to be caught in a situation like the family in the story where they're rushing to pick items as they're fleeing their home. It feels really important to have an emergency kit prepared so I can be prepared if a disaster or emergency occurs." "I can never know when a disaster may occur, but if I'm prepared with an emergency kit then I at least know I've increased my overall chances of staying safe." *key takeaway |

Closing/Call to Action

1. Conclude the session by providing participants with the link and/or print out of the emergency kit checklist.
2. Thank the group for participating!

When Disaster Strikes

Talking Points: When Disaster Strikes: What Would You Bring?

Introduction:

- Introduce yourself
- This facilitation was designed by Mercy Corps to help us understand the importance of having our own emergency kit, and to be prepared if an emergency strikes our own community.
- Mercy Corps is a leading global nonprofit that exists at the intersection of humanitarian response and global development work. Mercy Corps works in 40+ countries across a number of focus areas including emergency response, food security, climate resilience, and workforce development.
- After the activity, we can have a short discussion and I will handout (or send if electronic) an emergency checklist that we can all use to prepare our own emergency kit.

Activity Overview

- Today, we are going to take part in a big decision making activity called When Disaster Strikes: What Would You Bring.
- This will help us connect to the challenges and choices individuals are faced with when they are forced to flee their home due to disaster.
- You will work together to decide which items you think should be brought on this journey to safety with limited time and information. The items available for selection can be found on this handout (or provide link or share on screen)
- We will have 10 minutes to complete this activity. Is everyone ready?
- Okay great! Lets get started.

Debrief Discussion

- Okay, you're 10 minutes are up.
- Hopefully you were able to finish the activity. Now we're going to transition into some debrief/discussion questions (on previous page)

Closing

- Before we finish, I want to make sure everyone has the checklist Mercy Corps created, along with other resources, to help everyone put together their own emergency kit.
- Thanks to everyone for being part of this activity.



Stay Engaged!

Track your participation to activate a donation to our nonprofit partners!

Stay connected on LinkedIn!

Stay up to date with our website and lookout for upcoming volunteer activities!