



DISCOVER THE HUNGER FIGHTER IN YOU

A SIMULATION LESSON TO INTRODUCE GLOBAL ISSUES TO 6TH-8TH GRADERS

INTRODUCTION

Travel the globe to impact change in food security. Cultivate your passions for food and citizenship as you take on one of the world's greatest challenges. Discover and experience careers, cultures and connections in this simulation style lesson. Fill your suitcase with ideas and resources for future engagement.

OVERVIEW

This lesson blends cultural and civic engagement with career exploration, leadership, and workforce development. The simulation is encouraged to be content for a 4-H SPIN Club, and/ or an introduction for youth who may participate in the World Food Prize Michigan Youth Institute precollege program.

For each focus area provided, small groups of participants working through the experience(s) will work towards coming up with solutions. Participants have an opportunity to practice and grow their problem-solving and decision-making skills.

Each focus area (either **infrastructure** or **water hygiene and scarcity**) will have two groups of participants, one with access to resources (woodblocks; measuring cups with greater water quantities and clean water) and one without access to resources (cards; measuring cups with less water quantity or dirty water) for their respective activity. Either or both focus areas may be completed as a part of the lesson.



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OBJECTIVES

- Identify the various roles that contribute to food security.
- Demonstrate collaboration and teamwork.
- Practice constructive conversation and problem solving related to a global community issue.
- Demonstrate public speaking and social skills.
- Recognize and identify jobs and careers for future exploration.
- Demonstrate global competency and citizenship.

SKILL LEVEL

For youth in grades 6-8.

AUDIENCE SIZE

Maximum of 20 participants; minimum of four.

SETTING

Space for 20 participants with tables and chairs arranged into small groups of two-five.

TIME NEEDED

The lesson takes a total of three hours to complete. It can be done as one, three-hour or three, one-hour sessions.

LIFE SKILLS

Communications | Concern for Others | Contributions to Group Effort | Cooperation | Critical Thinking | Decision Making | Leadership | Problem Solving | Responsible Citizenship | Teamwork.



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MATERIALS NEEDED

- Internet access (preferred)
- Technology (laptop, iPad, cell phone, projector)
- [Participant Lesson PowerPoint slides or printed handouts](#)
- [Facilitator lesson PowerPoint slides with notes](#)
- Note paper for each person
- Sticky notes; 10 per person
- Pens/pencils for each person

OPTIONAL MATERIALS

- Cardstock and markers for participant name tents
- [Pre- and post-test](#)
- [Mentimeter Instructions](#)
- Themed room decorations and/or music
- Cultural snacks
- [Agriculture Careers Website](#)

ADDITIONAL MATERIALS FOR FACTOR TOPICS

Infrastructure -

- 1 set of tumbling tower blocks or wooden building blocks
- 1 52-card standard playing deck
- 1 8.5" x 11" piece of paper

Water hygiene and scarcity -

- 8 1-cup measuring cups (4 per group; 2 per round for 2 rounds)
- Plastic spoons
- Warm to hot tap water
- Recycled water bottles or plastic cups to hold water
- 4 Coffee filters (1 per group in round 2)
- 2 1-pound bags of sand (1 bag per round)
- 8 Bowls (1 for each water cup)
- 24 Water growing toys (6 per group; 3 per each round)
- 3-5-ounce disposable cups (at least 1 per group)
- 1 roll of paper towel
- Stopwatch (or timer via phone or laptop)
- Optional: small funnel for pouring sand

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ACKNOWLEDGEMENTS

This lesson has been created on behalf of Michigan State University Extension. It is closely tied to the World Food Prize Michigan Youth Institute; a precollege program, made possible with support from the Michigan 4-H Foundation.

The concept and PowerPoint used for this lesson was inspired by, and adapted with permission, from the World Food Prize Foundation.

AUTHORS

Debra K. Barrett

Senior Extension Educator
Michigan State University
smithde6@msu.edu

and

Paiton McDonald

Animal Science Graduate Student
Michigan 4-H Volunteer
Michigan State University
mcdon599@msu.edu

August 2026





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PROCEDURE

Before - This simulation lesson includes individual and small group work. As the facilitator:

- Review the PowerPoint slides and speaker notes. Suggestions, outlines, and what to emphasize are included in the slide notes.
- Optional—will the pre- and post-test be used? An instructional PDF for making a Mentimeter, along with the questions/items for the pre- and post-test, are linked in the resources section.
- Create Mentimeter pre- and post-test or copy the handout.
- Gather materials for the lesson.
- Consider and decide what size groups will work for the audience. The lesson is set up to accommodate a total of four small groups with a maximum of five individuals per group.
- Based on lesson time format chosen (1, 3-hour or 3, 1-hour, sessions), consider breaks to assess understanding and encourage active participation during discussions.
- Set up tables/chairs in small groups; no more than four groups; maximum of five individuals per group.

- If using themed decorations, set them up around the room.
- If snacks are provided, set them out before starting the lesson.
- Distribute paper, sticky notes, and pens/pencils to each group; enough for each person.
- Warm up the technology (laptop and projector) and pull up the PowerPoint slides and internet. If not using technology, make copies of the slides for participants.



Photo credits: Globe and Props by 4-H member Amelia Ward; Laptop by Devin Pickell on Unsplash; Musical Notes by Oner Mopo3 on Unsplash, and Snacks by Ravi Sharma on Unsplash.

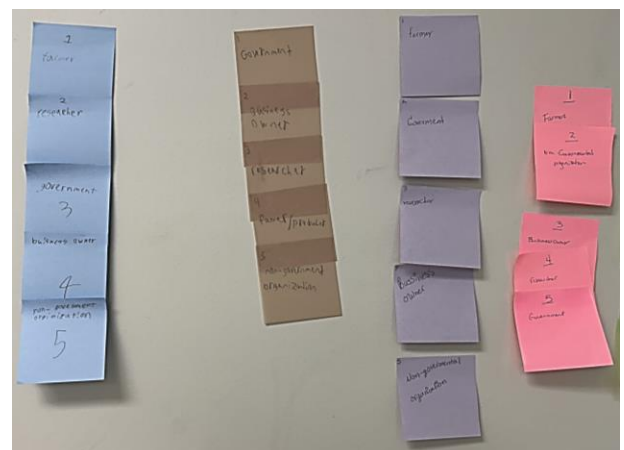


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PROCEDURE CONTINUED

During: Hour 1

1. Set the stage for today's activity. Refer to the lesson introduction and overview if needed. Have students make name tents (optional).
2. Present PowerPoint slides 1-4.
3. Complete the pre-test; slide 5. Add the current QR code and Menti passcode here or use Pre-test and Post-test handout.
4. Present PowerPoint slides 6-10.
5. Sticky Notes Activity; refer to the slide and notes for slide 11. Each student will rank the roles that are involved with decision making and solution planning on a sticky note (s); 1-5 with 1 being highest and 5 being the lowest ranking. Encourage the students to rank the roles. *Note—If students decide that ranking is not an accurate picture of their thoughts, then have students write or draw out their concept of the leadership roles.
6. Post sticky notes in a shared space within the room that can be seen by everyone.
7. Cluster the 1, 2, 3, 4, and 5 rankings together and reflect on the activity.
8. Complete post-test; slide 12. Add the current QR code and Menti passcode here or use Pre-test and Post-test handout.
9. End session 1 or continue.
10. Optional—facilitator may wish to review pre- and post-test responses to assess student learning, as time permits.





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PROCEDURE CONTINUED

During: Hour 2

Either or both factor topics may be completed.

INFRASTRUCTURE FACTOR:

1. Divide participants into groups (at least 2 participants per group; maximum of 5).
 2. Give one group of participants a deck of cards, and the other group of participants are given tumbling or wooden building blocks.
 3. Participants will work together to build at least one house or building with their resources for a maximum of 5 minutes.
 4. After they have completed the building, the facilitator will go around with a piece of paper and simulate a weather event with high winds to determine which building had greater integrity.
 5. Lead participants in a discussion about the differences between the two groups and how that influenced the outcome of surviving a weather event. Include brainstorming resources that may have been helpful for both groups. Example discussion questions are included below.
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6. Open the PowerPoint to the country simulation and navigate through the introduction slides (start with slide 14), stopping at the infrastructure slide (slide 31).
 7. Walk through the details of the introductory slides which includes an island description and lead a group discussion about the challenges that these islands have and potential solutions. When discussing solutions, include how the roles discussed in the introduction might play a part in those solutions.
 8. End session 2 or continue.



EXAMPLE INFRASTRUCTURE DISCUSSION QUESTIONS:

- Did one building resource do better in the wind event?
- Why did one resource survive the wind compared to the other resource?
- Can you think of other building materials that we use for buildings?
- Do you think this result would be the same if there was flooding?
- Discuss the cost differences between common building materials (wood, concrete, steel, etc.), and if one region of the world may have greater access to these resources than others.





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PROCEDURE CONTINUED

WATER HYGIENE AND SCARCITY FACTOR PART 1:

There will be four groups of participants for this activity. Each group will be assigned a measuring cup of water representing different resources. **Full resources** will be $\frac{3}{4}$ full measuring cups and **limited resources** are $\frac{1}{4}$ full. Two groups will have access to fresh or clean water (no sand), and two groups will have access to "dirty" or sand-contaminated water. This activity will be done twice; one without a filtration method, and one with a filtration method. More water, sand, and water-growing toys will be needed for each round as noted in the materials. If all the water is not used from round one, participants can reuse it for round two instead of preparing a new water supply.

Please note that the water-growing toys will not respond properly without warm water. It is also important that NO water used in this activity should be consumed. ALL water and sand will be disposed. Plan accordingly as the sand should NOT go down the drain.



To begin –

1. Place three water-grow toys in each of four bowls to create four stations. Bowls should be placed on a table at least 6 feet away from the water bottle or cup stations. This set up is for instruction 7 later in the lesson.
2. Gather four - 1 cup measuring cups and two spoons.

With words of encouragement in the background, this photo shows example of four bowls, each containing three water-growing toy capsules.





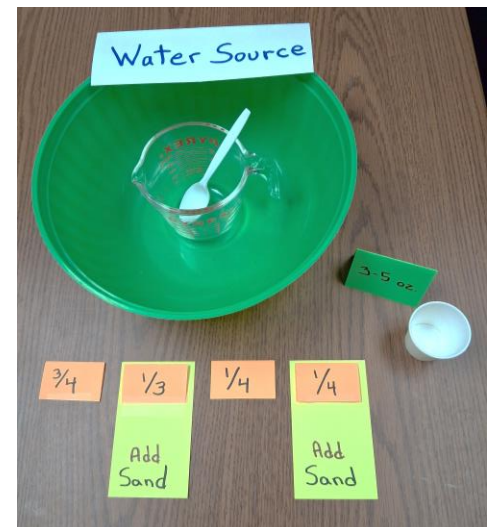
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PROCEDURE CONTINUED

WATER HYGIENE AND SCARCITY FACTOR PART 1 CON'T.:

3. Fill the measuring cups with these volumes of warm water: one $\frac{3}{4}$ full; one $\frac{1}{3}$ full, and two at $\frac{1}{4}$ full.
 4. To the measuring cups containing **$\frac{1}{3}$ water** and **one of the $\frac{1}{4}$ full cups**, add sand until the measuring cups double in volume. The $\frac{1}{3}$ full will equal $\frac{2}{3}$ full and the $\frac{1}{4}$ full will equal $\frac{1}{2}$ full.
 5. With a spoon, stir the two sand measuring cups to thoroughly mix the water and sand.
 6. Give each group of participants a 3–5-ounce cup to be used as a dipper to transport water from the measuring cups or bottles to the bowls. This set up may resemble a relay race.
 7. Explain to the participants that they will be working together with their group mates to transport water from their water station measuring cup (that is at least 6 feet away), to their bowl with the water-growing toys; using the small cup provided, one participant at a time.
 8. Do not fill the bowls more than $\frac{1}{2}$ full of water at a time, and if using a sand-contaminated water source, stir the water cup or bottle prior to pouring water each time. Make sure, to always scoop sand with water to demonstrate the contaminated source.
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9. Start a 2-minute timer and let the participants know that the activity has begun.
 10. At the end of the 2-minute timer, the participants compare the growth of their water toys. Lead participants in a discussion about the differences between their water sources (purity and volume) and how that impacts the growth of the water toys.

Photo shows examples of some items including a large bowl (water source), a measuring cup and spoon, small signs depicting water amount for each measuring cup, the two spots that will receive sand, and a 3–5-ounce cup to transport water when all groups are ready to begin.





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PROCEDURE CONTINUED

WATER HYGIENE AND SCARCITY FACTOR PART 2:

1. Reset the supplies for each group but for the groups with the sand water measuring cups, give them a coffee filter to put over their bowl(s). A group member may need to help hold the coffee filter in place over the bowl as water is transferred.
2. Repeat the activity and have participants compare the growth and purity of their water.
3. Have the participants engage in a discussion about the differences between round 1 and 2.
4. Open the PowerPoint to the country simulation and navigate through the introduction slides, stopping at the water slide(s). Note: the introduction slides only need to be shared once but are included here in case the water hygiene and scarcity factor is the only piece of the lesson completed.
5. Walk through the details and lead a group discussion about the challenges that these islands have and potential solutions that the participants can think of based on the activity. Example discussion questions are provided below. When discussing solutions, include how the roles discussed in the introduction might play a part in those solutions.

EXAMPLE WATER DISCUSSION QUESTIONS:

- The water growing toys represent things that consume water, can you think of other things that consume water (animals, humans, crops, etc.)?
- What would make the transport of water easier for this activity (connecting back to countries that rely on agricultural animals to transport water)?
- How do you think your toys would have grown if there were less or more of them in the bowl (connecting back to family or herd size, etc.)?
- Did the filtration system help with growth? Do you think every country has access to these systems?
- Discuss the different pollutants we can deal with in water and how resources differ across the world (weather events, pathogens, manure, or chemical pollutants).





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PROCEDURE CONTINUED

30-MINUTE WRAP UP (OPTIONAL IF BOTH INFRASTRUCTURE AND WATER SCARCITY ACTIVITIES WERE COMPLETED)

The goal of this activity and simulation is to teach the process and concept used by change makers. Encourage participants to connect how different challenge factors impact one another.

1. Ask the participants to share their main takeaways from each activity discussion (infrastructure and water hygiene and scarcity; end of hour 2 discussion). Be ready to assist participants and probe thoughts and interactions with questions.
2. Re-focus small groups back to one large group and choose some of the Talk It Over—Reflection Questions below to wrap up the experience.
3. Optional - Share slide 36 which includes the lesson authors' contact information for future reference.

TALK IT OVER – REFLECTION QUESTIONS

- What went well during small group work?
- What challenges did anyone come across during discussions and problem-solving?
- Did anyone notice any similarities between groups' solutions or information that might be beneficial to another group's solutions?
- What knowledge, resources, and skills would be needed to support implementing the proposed solutions?
- What makes solutions feasible/not feasible for Virgin Islands communities?
- Does this lesson give participants ideas on how to make more of a difference in their local community?
- What jobs or careers were identified during small group work?
- Are participants interested in learning more?





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This lesson is linked to the World Food Prize Foundation and their Global Youth Institutes. At Michigan State University, the World Food Prize Michigan Youth Institute is a precollege program. Working towards a common goal, to provide a sustainable and secure global food supply, the World Food Prize Michigan Youth Institute (WFPMIYI) bridges interests across English language arts, social studies, culture, economics, sciences, health, and nutrition, as well as agriculture, natural resources, and conservation.

The WFPMIYI provides learning opportunities and interactions that are interdisciplinary and foster both life and employability skills. Students in grades 7-12 engage with local leaders and experts on critical global challenges, participate in hands-on experiences, and explore exciting ways to make a difference in Michigan and around the world while building their network for the future.



Photo by [Adrien Olichon](#) on [Unsplash](#)



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RELATED RESOURCES

- [Michigan 4-H Youth Development](#)
- [Career Exploration and Entrepreneurship](#)
- [Global and Cultural Education](#)
- [Leadership, Citizenship and Service](#)
- [World Food Prize Michigan Youth Institute Pre-College Program](#)
- [Michigan State University Library World Food Prize Research Guide](#)

For more information about the World Food Prize Michigan Youth Institute, visit:
<https://www.canr.msu.edu/wfpmyi/index>

or contact:

Debra Barrett, Sr. Extension Educator
smithde6@msu.edu
517-355-3855

Brian Wibby, Extension Educator
wibby@msu.edu
906-439-5065

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Beyond Ready!**



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