

# A DROP IN THE BUCKET

(Want to create a calm and focused space to start the conversation? Set up desks or chairs in a circle and start the session with 2 minutes of collective silence.)

## ACADEMIC OBJECTIVES

Identify Fractional Parts  
Fraction Word Problems  
Multiplication & Addition

### 1 Ask an EMPATHY QUESTION: "How much water do we use per day? In a week? In a year? In our lives?"

A few people might raise their hands and answer with something like this: "Depends on the day." "I use a lot, but my brother uses more." "I don't know - not a lot though." Or maybe an outlier: "Who cares?"

Show the group "[I Am Ghani](#)". Ask the group to keep water on their minds - to think about the various ways Ghani uses water, and to begin to write down our assumptions about his water use.

### 2 THINK IN ECOSYSTEMS: "Where does all of this water come from? How much does Ghani use? How much do we have here on Earth?" (NOTE: MATH is a great tool for us here. Graphs, charts, equations, and more!)

Let the group answer, hopefully reflecting on some of the video's discussion. Ask them what math concepts might be helpful to address these questions. Ask if graphs, fractions, and algebra might be helpful. Read "[Ghani Grows Rice](#)" (specifically, page 2) to explore these connections.

Choose green sections that are relevant to your classroom and read aloud, in small groups, or have everyone read on their own. Another question could be: "If we are using "X" amount clean water, and there are "Y" amount of people to drink it and use it, how much water can each of us sustainably use? Is the answer this simple? Are there more complex aspects to think about? How can math help us?"

### 3 GET CREATIVE: Begin a "Free-Write" exercise with the group to help draw out assumptions and ideas.

The goal with our Free-Write is to write for 5 minutes straight. "Take no breaks. Try to never lift the pen off of the paper." Get ready for the group to share everything they believe about the way Ghani, the group, and the world uses water. Ask the group also to think about the differences and similarities between personal and group (business/agriculture) water use. Ideally, you do this activity too to share with the group at the end or in case people aren't willing to share right away.)

After 5 minutes, ask if anyone is willing to share his or her new thoughts or questions to discuss. Ask if anyone believes their thoughts about water use have changed since the beginning of class. "Do we feel that there are ways we can reduce or optimize our water use? Can Ghani? Can we all? How?"

### 4 Pose a COLLABORATION QUESTION: "Do we all have enough water? Do some of us use more than we need? What can we do to create access to clean water for everyone? How can we do our part? What are some of the solutions we can begin to explore? How would we leverage math as we address these challenges?"

Discuss as a group, but also feel free to share your own thoughts. Maybe say something like: "This might be a really important topic, right? Because the water we use, from Ghani to those of us in this room, has an impact on our global water supply. We might feel like what we use is a drop in the bucket, but the collective amount of water we use MATTERS A LOT. It's the power of numbers. What would happen if all of us used a few gallons less per day? But now we have to look at, as we've learned through Ghani's story, the amount of water used by businesses and for farming at larger scales.

Suggest the idea that there isn't a one-for-all solution here, but rather that we can do our individual part and make the collective effort to change this story through how we use water and what we advocate for. And remind everyone: "This is our first introduction to water through another person's shoes. There's much more to learn about how we can have an impact here. The conversation doesn't have to stop here!"

**KEEP LEARNING AT HOME:** Reflect on the videos, writings, and conversations from the day. Add in your academic goals. For "homework" (to keep learning): Start logging your water usage. Start determining how much your family uses too. Begin to research various organizations through [GiveWell](#) and other sources to understand the water challenges and effective solutions.

**LEARNING BY LIVING:** Groups of 4-5, half of the class, or the entire class can begin their "empathy challenge": choose a few different ways we can change our relationship with water to better ourselves and our planet. Work together to create indicators to measure success. Examples could include changing our water use in a particular way (taking bucket showers or eating less meat), finding effective water organizations to contribute to, or creating goals for our water use as a group or even as a school/community!