

## Lesson 18: Using Water Efficiently

Let's investigate saving water.

### 18.1: Comparing Baths and Showers

Some people say that it uses more water to take a bath than a shower. Others disagree.

1. What information would you collect in order to answer the question?
  
  
  
  
  
  
  
  
  
  
2. Estimate some reasonable values for the things you suggest.

### 18.2: Saving Water: Bath or Shower?

1. Describe a method for comparing the water usage for a bath and a shower.
  
  
  
  
  
  
  
  
  
  
2. Find out values for the measurements needed to use the method you described. You may ask your teacher or research them yourself.
  
  
  
  
  
  
  
  
  
  
3. Under what conditions does a bath use more water? Under what conditions does a shower use more water?

## 18.3: Representing Water Usage

1. Continue considering the problem from the previous activity. Name two quantities that are in a proportional relationship. Explain how you know they are in a proportional relationship.
2. What are two constants of proportionality for the proportional relationship? What do they tell us about the situation?
3. On graph paper, create a graph that shows how the two quantities are related. Make sure to label the axes.
4. Write two equations that relate the quantities in your graph. Make sure to record what each variable represents.