

# Conserving Water while Brushing Teeth

Launch Materials

M2C3 (2018)

# Water Conservation



- What are some daily activities that require us to use water?
  - At home?
  - At school?
- About how much water do we use for each of the activities?

# Water Conservation



- Pay close attention to the water use in this video.
- <https://www.youtube.com/watch?v=mJtEJm4F4nE>



What do you notice?  
What do you wonder?

What questions do you have that you could answer using mathematics?



- What do you know that could help you answer these questions?
- What information would you need?
- What would you need to do?

What questions do you have that you could answer using mathematics?



- How much water do you use when you are brushing your teeth?
- How much water do you use if you turn the water off while you are brushing?
- What if you leave the water on, then how much water do you use?

- Bathroom faucets often use **2 gallons of water per minute**



- 1 liter is approximately .25 gallon
- 10 liters is approximately 2.5 gallons



# TASK: CONSERVING WATER WHILE BRUSHING TEETH



- A newspaper says that a family can save almost 7,000 gallons of water every year if they turn off the water while brushing their teeth.
- Is this reasonable? How can this be possible?
- Create a model using numbers, pictures, words and symbols that shows:
  - If this is a reasonable statement
  - In what circumstances (conditions) it is reasonable
  - If it is not reasonable, what a reasonable estimate would be



# TASK: CONSERVING WATER WHILE BRUSHING TEETH



- A newspaper says that you can save A LOT of water every year if you turn off the water while brushing your teeth. How much water can our class save in one day if we all turn off the water while brushing our teeth? How much water can we save in one week?
- Is this reasonable? How can this be possible?
- Create a model using numbers, pictures, words and symbols that shows:
  - If this is a reasonable statement
  - In what circumstances (conditions) it is reasonable
  - If it is not reasonable, what a reasonable estimate would be

# TASK: CONSERVING WATER WHILE BRUSHING TEETH



- Your friend claims that in one month his **family** can fill up 100 buckets with the water they waste while brushing their teeth. Do you believe him? What could make his claim reasonable?
- Create a model to support your argument.
- Going further: How could your family test this claim at home?
- Questions to think about:
  - What do you know?
  - What do you need to find out?
    - How many people are in your friend's family?
    - How often do they brush their teeth?
  - What do you need to *assume*?
    - How much water can a "bucket" hold?
    - How long does the water run while someone brushes his/her teeth?