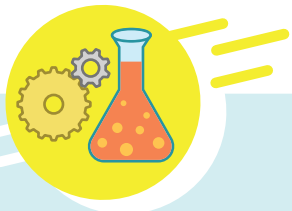
Speak Agent™

HOW MUCH WATER IS IN ONE CUP? PAGE 1

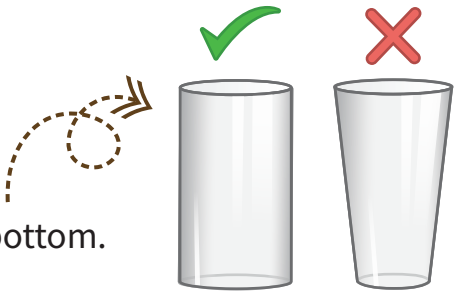
ACCEL. 2



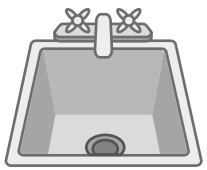
We are going to measure the volume of one cup of water — twice!

1 GATHER YOUR TOOLS

- Find a ruler that has inches on it.
- Find a 1-cup measuring cup.
- Find a glass or mug that is a cylinder shape. Make sure it is not wider at the top than the bottom.



TOOLS YOU NEED

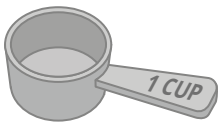


Sink

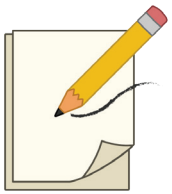
Glass / Mug

Ruler

Calculator



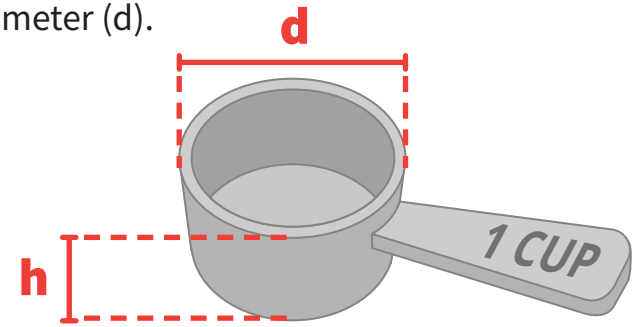
Measuring Cup



Paper & Pencil

2 MEASURE

- Measure the cup's height (h) and diameter (d).



3 FIND THE RADIUS

- Use the formula:

$r = d \div 2$

$r =$ _____

Speak Agent™

HOW MUCH WATER IS IN ONE CUP? PAGE 2

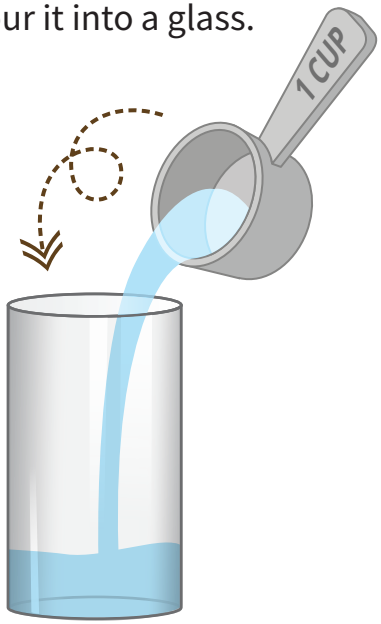
ACCEL. 2

4 CALCULATE

- Calculate the volume of the cup.
- Use the formula: $V = \pi r^2 h$ OR $V = 3.14 \cdot r^2 \cdot h$
- Write this down for later. $V_{1\text{-cup}} =$ _____

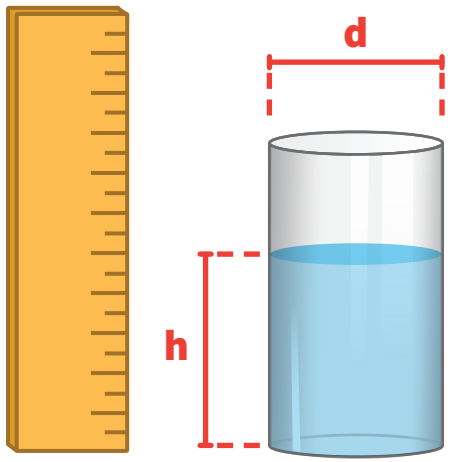
5 FILL

- Now fill the measuring cup and pour it into a glass.



6 MEASURE

- Measure the height (h) and diameter (d) of the water in your glass.
  Measure only up to the water line.



7 CALCULATE

- Calculate the volume of the water in your glass.

$V_{water} =$ _____

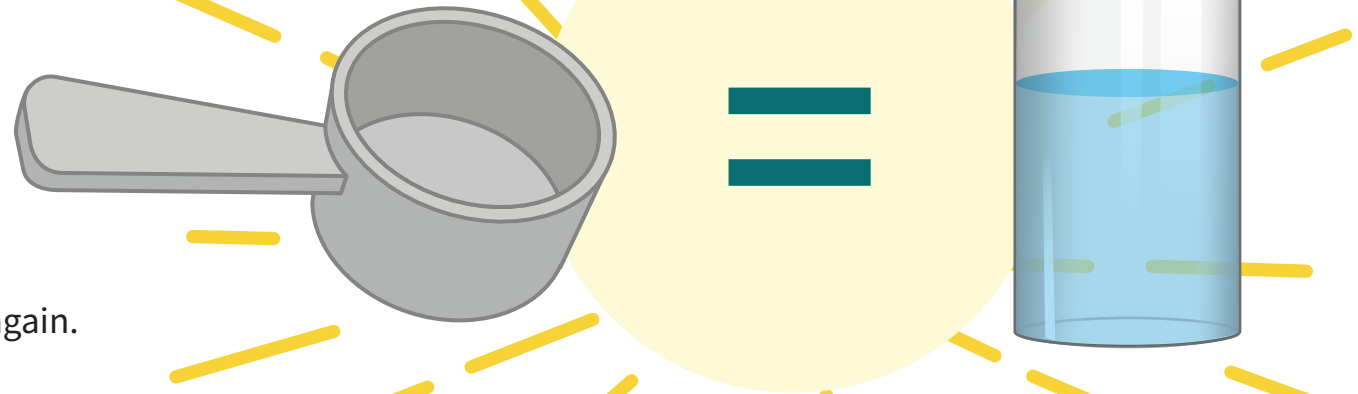
Don't forget to halve the diameter to find the radius.

Don't forget to use the volume formula in step 4.

8 MATCH

- **Did your answers match?**

  The volume of the 1-cup should equal the volume of the water in the glass.



- If they don't match, that's okay!
  Try measuring and calculating again.

9 CHECK YOUR ANSWER

- Go to this webpage: **speakagent.com/pgcps-parents**
  Look for the link called "Answer Key."

LEARNING GOALS

- [ ] Solve the volume of a cylinder using real-world objects.
- [ ] Students will also prove that volume is equivalent when moved from one container to another.

UNIT: Volume