

# Converting Capacity Measurement

This lesson deals with converting one form of capacity measurement to another. For example: If Sara has 9 cups of milk, how many quarts of milk does she have? The chart below should explain the concept very well. Students should practice reciting the order of the units from greatest to least. It goes: Gallons, Half Gallons, Quarts, Pints, Cups. If students can remember the order, they can draw the charts to complete the conversions. The charts are provided below. For the numbered chart, they really need to understand that each unit doubles. Then, if they are given 7 gallons, they can double each number down to figure out how many other units they have. If they are given 32 cups, they can half the numbers and go up the chart. They can draw the picture chart to the side or fold a piece of blank paper to fill it in if they forget the numbers. From this they can use another method to solve for conversions. Whichever way they are comfortable will work. There is no video for this skill, but there are practice problems and word problems below the charts.

## Conversion Information

Conversion Chart for Capacity Measurement (notice that the numbers double on the way down the chart):

- One Gallon= 2 Half Gallons
- One Gallon= 4 Quarts
- One Gallon = 8 Pints
- One Gallon = 16 cups

\* If students can draw the chart they can get into the details (such as 1 Half Gallon = 4 Pints)

For example:

8 Gallons = \_\_\_\_\_ Pints

- 8 Gallons
- 16 Half Gallons
- 32 Quarts
- 64 Pints
- 128 Cups

OR

40 Cups= \_\_\_\_\_ Half Gallons

- 5 H Gallons
- 10 Quarts
- 20 Pints
- 40 Cups

Chart the kids should be able to create from memory (they should know that the entire piece of paper is a gallon or write gallon at the top):

Half Gallon				Half Gallon			
Quart		Quart		Quart		Quart	
Pint	Pint	Pint	Pint	Pint	Pint	Pint	Pint
Cup	Cup	Cup	Cup	Cup	Cup	Cup	Cup

The paper is the gallon and these units can fit inside the gallon.

Students can also use this chart to come up with numbers and use the "Big to little gotta multiply, Little to big divide" rap to come up with conversions. Whichever way they understand best will work.

For example:

8 Quarts = \_\_\_\_\_ cups

Quarts to cups is big to little, so they need to multiply 8 by the number of cups in a quart. There are 4 cups in a quart. So they can multiply 8 x 4 and know there are 32 cups in 8 quarts.

OR

34 cups = \_\_\_\_\_ gallons

Cups to gallons is little to big, so they need to divide 34 by the number of cups in a gallon. There are 16 cups in a gallon. 34 divided by 16 is 2 with a remainder of 2. Students should know they can make 2 whole gallons and have 2 cups left over.



**Sample Word Problems:**

1. Lana's little sister needs to take a bubble bath. The package says to put in a drop of bubble bath for every half gallon of water in the bath tub. Lana doesn't know how many half gallons there are, but she knows that their bathtub can hold 12 gallons of water. How many drops can she put into the bath for her sister?
2. Ivan needs gas for his truck. He knows his truck holds 20 gallons of gas. His gas can does not measure gallons, though. It measures pints. How many times will he have to fill up his gas can to get his truck full of gas?
3. To make enough cakes for the entire fair, Marie needs 60 cups of milk. She bought 5 half gallons of milk. Will that be enough to make her cakes? (Extension: How many cakes can she make if each cake needs 4 cups of milk?)
4. Hank's mother asked him to go to the store and buy 3 pints of orange juice for her church brunch. He came back with 2 quarts of orange juice and said, "That's all they had." Did Hank buy more or less orange juice than his mother needed?
5. For every quart of water in the swimming pool, we need to add a tablet of chlorine. If there are 2,000 gallons of water in the pool, how many chlorine tablets will we need?