

Discovering Gallon Man

Students experiment with units of liquid measure used in the customary system of measurement. They practice making volume conversions in the customary system.

Learning Objectives

Students will:

- experiment with different amounts of water to discover the conversion factors dealing with volume in the customary system
- convert volumes in the customary system

Materials

3 one-gallon containers

4 one-quart containers

8 one-pint containers

16 one-cup containers

Chart Paper

[Gallon Man Activity Sheet](#)

[Gallons, Cups, and Pints Activity Sheet](#)

[You Think Gas is Expensive? Activity Sheet](#) (Optional, used in Extension)

Student-created charts from Lesson 1

Instructional Plan

To assess students' prior knowledge, have students brainstorm different customary units of measure in length, weight, and volume. List these on a chart for future reference. Discuss with the students the best measuring tools for objects with which they are familiar. Alternatively, you may ask the students to refer back to the charts they created in Lesson 1.

To begin the lesson, organize the class into three groups of equal size. Provide one group with 16 cups, the second group with 8 pints, and the third group with 4 quarts. Give each group a one-gallon container filled with water.

Allow students to pour the water from the gallon jug into their particular measuring unit. As the students discover the relationship between the different amounts, have them record their findings on a piece of chart paper.

Direct the students' attention to the number of cups in a pint, the number of pints in a quart, and the number of quarts in a gallon (1 pint = 2 cups, 2 pints = 1 quart, 4 quarts = 1 gallon). When they have "discovered" the correct equivalent measures, show them the Gallon Man organizer.

The Gallon Man is a large uppercase G with four uppercase Qs inside the G, two uppercase Ps inside each of the Qs, and two lowercase Cs inside each capital P.

A model of Gallon Man is provided in the activity sheet, [The Gallon Man](#).

[Gallon Man Activity Sheet](#)

Once the students have had a chance to familiarize themselves with Gallon Man, they can practice making conversions between units of measure. One strategy is making a table and filling in known amounts to convert to another unit. Students can use conversion factors to help them.

Students may complete the [Gallons, Cups, and Pints](#) activity sheet individually or in pairs. You may wish to add more questions to the activity sheet, depending upon the needs of your students.

[Gallons, Cups, and Pints Activity Sheet](#)

Questions for Students

When would you need to make conversions between units?

[If the students have traveled abroad, ask them about the use of metric measures in other countries. For example, many countries have notebooks

based on metric measures.]

When would you use a combination of inches, feet, or yards to measure?

[Student responses may vary.]

What are some things to consider when deciding which unit of measure to choose?

[Are you measuring length, weight, volume, etc? What is the relative "size" of the item being measured?]

Assessment Options

At this stage of the unit, students should be able to do the following:

- Use their conversion factors to set up an equation to convert from one unit of measurement to another
- Recognize the relevance of converting units in everyday life
- Choose the most appropriate unit of measurement in a given situation

Extensions

Distribute the Student Learning Guide, [You Think Gas is Expensive?](#) activity sheet.

[You Think Gas is Expensive? Activity Sheet](#)

Allow students to calculate the unit rates on each item while making conversions from ounces to gallons. The items on the activity sheets are things that should be familiar to the students, so the process gives the students an opportunity to use what they have learned and apply this knowledge to everyday products.

Teacher Reflection

What additional experiences do students who are having difficulties setting

up their chart or table need to make conversions?

Do the students have a good grasp of the units themselves? Do they understand how big the units are relative to one another?

Do students need more practice measuring objects to understand the different customary units of measure?

NCTM Standards and Expectations

[Measurement 6-8](#)

Understand both metric and customary systems of measurement.

Understand relationships among units and convert from one unit to another within the same system.

This lesson was developed by Katie Carbone.