Mara has a can of paint with 3 cups of purple paint in it. She also has a bucket with a capacity of 26 fluid ounces. Will the bucket hold all of the paint Mara has?

The capacity of a container is the amount the container can hold.

1 cup (c) = ______ fluid ounces (fl oz)

**Use a bar model to write an equation.**

**STEP 1** Convert 3 cups to fluid ounces.

**MODEL**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
</tbody>
</table>

**RECORD**

<table>
<thead>
<tr>
<th>total cups</th>
<th>fl oz in 1 cup</th>
<th>total fl oz</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**STEP 2** Compare. Write <, >, or =.

______ fl oz ______ 26 fl oz

Since ______ fluid ounces is ________ than 26 fluid ounces,

Mara's bucket _________ hold all of the paint.

**Mathematical Practice** What if Mara has 7 cups of green paint and a container filled with 64 fluid ounces of yellow paint? Which color paint does Mara have more of? Explain your reasoning.
Example

Coral made 32 pints of fruit punch for a party. She needs to carry the punch in 1-gallon containers. How many containers does Coral need?

To convert a smaller unit to a larger unit, you need to divide. Sometimes you may need to convert more than once.

Convert 32 pints to gallons.

**STEP 1** Write an equation to convert pints to quarts.

<table>
<thead>
<tr>
<th>total pints</th>
<th>pints in 1 qt</th>
<th>total quarts</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**STEP 2** Write an equation to convert quarts to gallons.

<table>
<thead>
<tr>
<th>total quarts</th>
<th>quarts in 1 gal</th>
<th>total gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

So, Coral needs ____ 1-gallon containers to carry the punch.

Share and Show

1. Use the picture to complete the statements and convert 3 quarts to pints.
   a. 1 quart = ____ pints
   b. 1 quart is ____ than 1 pint.
   c. 3 qt ____ pt in 1 qt = ____ pt

Convert.

2. 3 gal = ____ pt

3. 5 qt = ____ pt

4. 6 qt = ____ c

Math Talk

Reason Abstractly Explain how converting units of capacity is similar to converting units of length. How is it different?
Name _______________________________  

**On Your Own**  

**Convert.**  

5. \( 38 \text{ c} = \underline{\text{ pt}} \)  

6. \( 36 \text{ qt} = \underline{\text{ gal}} \)  

7. \( 104 \text{ fl oz} = \underline{\text{ c}} \)  

**Practice: Copy and Solve**  

Convert.  

8. \( 200 \text{ c} = \underline{\text{ qt}} \)  

9. \( 22 \text{ pt} = \underline{\text{ fl oz}} \)  

10. \( 8 \text{ gal} = \underline{\text{ qt}} \)  

11. \( 72 \text{ fl oz} = \underline{\text{ c}} \)  

12. \( 2 \text{ gal} = \underline{\text{ pt}} \)  

13. \( 48 \text{ pt} = \underline{\text{ gal}} \)  

**Compare. Write <, >, or =.**  

14. \( 28 \text{ c} \underline{\text{ 14 pt}} \)  

15. \( 25 \text{ pt} \underline{\text{ 13 qt}} \)  

16. \( 20 \text{ qt} \underline{\text{ 80 c}} \)  

17. \( 12 \text{ gal} \underline{\text{ 50 qt}} \)  

18. \( 320 \text{ fl oz} \underline{\text{ 18 pt}} \)  

19. \( 15 \text{ qt} \underline{\text{ 63 c}} \)  

20. **WRITE**  

**Math** Which of exercises 14–19 could you solve mentally?  

Explain your answer for one exercise.  

21. **GO DEEPER** Larry made 4 batches of punch. Each batch uses 16 fluid ounces of lemon juice and 3 pints of orange juice. If each serving is 1 cup, how many servings did he make all together?
22. Use Graphs Complete the table, and make a graph showing the relationship between quarts and pints.

<table>
<thead>
<tr>
<th>Quarts</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pints</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

23. Describe any pattern you notice in the pairs of numbers you graphed. Write a rule to describe the pattern.

24. What other pair of customary units of capacity have the same relationship as pints and quarts? Explain.

25. Shelby made 5 quarts of juice for a picnic. She said that she made $1\frac{1}{4}$ cups of juice. Explain Shelby's mistake.
Name ____________________________

**Customary Capacity**

**Convert.**

1. 5 gal = ____ pt
   
   Think: 1 gallon = 4 quarts
   1 quart = 2 pints

2. 192 fl oz = ____ pt

3. 15 pt = ____ c

4. 240 fl oz = ____ c

5. 32 qt = ____ gal

6. 10 qt = ____ c

7. 48 c = ____ qt

8. 72 pt = ____ gal

9. 128 fl oz = ____ pt

**Compare. Write <, >, or =.**

10. 17 qt ____ 4 gal

11. 96 fl oz ____ 8 pt

12. 400 pt ____ 100 gal

13. 100 fl oz ____ 16 pt

14. 74 fl oz ____ 8 c

15. 12 c ____ 3 qt

**Problem Solving (Real World)**

16. Vickie made a recipe for 144 fluid ounces of scented candle wax. How many 1-cup candle molds can she fill with the recipe?

17. A recipe calls for 32 fluid ounces of heavy cream. How many 1-pint containers of heavy cream are needed to make the recipe?

18. **WRITE Math** Give some examples of when you would measure capacity in each of the units of capacity shown in the table on page 592.
Lesson Check (S.MD.A.1)

1. Rosa made 12 gallons of lemonade to sell at a lemonade stand. How many pints of lemonade did she make?

2. Ebonae's fish tank holds 40 gallons. How many quarts does the fish tank hold?

Spiral Review (S.NBT.B.5, S.NF.A.1, S.NF.B.3, S.MD.A.1)

3. A mountain climber climbed 15,840 feet on her way to the summit of a mountain. How many miles did she climb?

4. Jamal is making blueberry muffins. He has 6\(\frac{3}{4}\) cups of batter, but he needs a total of 12 cups. How much more batter does Jamal need?

5. At a building site, there are 16 pallets with sacks of cement. The total weight of all the pallets and cement is 4,856 pounds. Each pallet with cement weighs the same amount. How much does each pallet with cement weigh?

6. A publisher shipped 15 boxes of books to a bookstore. Each box contained 32 books. How many books did the publisher ship to the bookstore?