

Notes 6-9 - Fulcher


Thursday, December 12, 2019 7:08 AM

Math Practices and Problem Solving: Reasoning

Name: _____

Solve It

Aaron has three slabs of beeswax. He plans to melt them and use all of the wax to form 36 candles. If all the candles are the same size and weight, how much will each candle weigh? Use reasoning to decide.



Math Practices and Problem Solving

Lesson 6-9

Reasoning

I can ...
make sense of quantities and relationships in problem situations.

Mathematical Practices MP.2.Aba, MP.1, MP.3, MP.4, MP.5
Constant Standard 5.NF.B.7

Thinking Habits
Be a good thinker! These questions can help you.
What do the numbers and symbols in the problem mean?
How are the numbers or quantities related?
How can I represent a word problem using pictures, numbers, or equations?


Handwritten notes:
t = total wax
8.2 lb | 8.1 lb | 8.9 lb
 $8.2 + 8.1 + 8.9 = t$
 $t = 25.2$
 $25.2 \div 36 = 0.7$
Each candle weighs 0.7 lb.

Look Back! **MP.2 Reasoning** Suppose Aaron wants each candle to weigh 0.5 pound. How many candles could he make with the beeswax?

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How Can You Use Reasoning to Solve Problems?

Ms. Watson is mixing mint green paint for her art class. She combines full bottles of blue, yellow, and white paint. How many 3.5-fluid ounce jars can she fill? Use reasoning to decide.



What do I need to do to solve this problem?
I need to add the three quantities of paint. Then I need to divide the sum by the capacity of a jar.

How can I use reasoning to solve this problem?

I can

- identify the quantities I know.
- draw a bar diagram to show relationships.
- give the answer using the correct unit.

Here's my thinking...

Use bar diagrams to show how the quantities are related.

First, find the sum of the three quantities of paint in the mixture.

34.6	34.6	23.2	
7 total number of fluid ounces			
34.6	34.6	23.2	92.4

Then, divide 92.4 by 3.5 to find the number of jars that can be filled. Annex zeros as needed.

92.4		26.4
3.5	7	35
		192.40
		- 70
		224
		- 210
		140
		- 140
		0

Ms. Watson can fill 26 jars. The 27th jar will be only partially filled.

Convince Me! **MP.2 Reasoning** Ms. Watson is mixing 34.6 fluid ounces of red paint and 18.6 fluid ounces of yellow paint to make orange paint. How many 3.5-fluid ounce jars can she fill? Use reasoning to decide.

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Name: _____

Guided Practice

MP.2 Reasoning Miranda mixed 34.5 fluid ounces of blue paint, 40.5 fluid ounces of red paint, and 2 fluid ounces of black paint to make purple paint. She poured the same amount of the purple paint into each of 14 jars. How much paint did she pour in each jar?

Use reasoning to decide how the quantities in the problem are related.

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③ t = total oz of paint
124.5 = 41.5 m

34.5
110

MP.2 Reasoning

Miranda mixed 34.5 fluid ounces of blue paint, 40.5 fluid ounces of red paint, and 2 fluid ounces of black paint to make purple paint. She poured the same amount of the purple paint into each of 14 jars. How much paint did she pour in each jar?

Use reasoning to decide how the quantities in the problem are related.

1. Explain what each of the quantities in the problem means.

34.5, 40.5, and 2 are fl. oz. of paint.
14 is the number of jars the paint goes into.

2. Describe one way to solve the problem.

Add up all the fl. oz. of paint. Divide the sum of the paint by 14 jars.

3. What is the solution to the problem? Explain.

5.5 oz. per jar because the total paint was 77 oz and 77 oz into 14 jars is 5.5 oz per jar.



Complete 4-6

③ $t = \text{total oz of paint}$
 $\boxed{34.5 \text{ oz}} \quad \boxed{40.5 \text{ oz}} \quad \boxed{2 \text{ oz}}$

$34.5 + 40.5 + 2 = t$

$\frac{77 \text{ fl. oz of paint}}{14 \text{ bottles}} \rightarrow$

$77 \div 14 = x$

$84 \div 12 = 7$

$77 \div 14 = x$

$72 \div 12 = 6$

$$\begin{array}{r} 1 \\ 34.5 \\ 40.5 \\ + 2.0 \\ \hline 77.0 \end{array}$$

$$14 \overline{) 77.0} \begin{array}{r} \times 5.5 \\ - 70 \downarrow \\ \hline 70 \\ - 70 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 2 \\ 5.5 \\ \times 14 \\ \hline 220 \\ + 550 \\ \hline 77.0 \end{array}$$

1dp + 0dp = 1dp

Independent Practice

MP.2 Reasoning

Sue made chicken soup by combining the entire can of soup shown with a full can of water. How many 10-fluid ounce bowls can she fill with the soup? How much soup will be left over?

4. Explain what each of the quantities in the problem means.

18.6 fl. oz of can soup, 18.6 fl. oz of water
A bowl holds 10 fl. oz.

5. Describe one way to solve the problem.

Add the soup and the water.
Divide sum by 10 fl. oz.

6. What is the solution to the problem? Explain.

3 bowls of soup
7.2 fl. oz. of soup left over.



$t = \text{total soup}$
 $\boxed{18.6 \text{ fl oz}} \quad \boxed{18.6 \text{ fl. oz}}$

$18.6 + 18.6 = t$

$\frac{37.2 \text{ fl. oz of soup}}{10 \text{ fl oz}} \rightarrow$
 $b = \text{number of bowls}$

$37.2 \div 10 = b$

$37.2 \div 10 = 3.72$

$$\begin{array}{r} 11 \\ 18.6 \\ + 18.6 \\ \hline 37.2 \end{array}$$

$3 \times 10 \text{ oz} =$

$$\begin{array}{r} 37.2 \text{ fl. oz} \\ - 30.0 \text{ fl. oz} \\ \hline 7.2 \text{ fl. oz} \end{array}$$

Math Practices and Problem Solving

Common Core Performance Assessment

Cooking Competition

Lucas's cooking class is having a cooking competition. There are 6 teams. Each student brought supplies that will be shared equally among the teams. The table shows the supplies Lucas brought. If the supplies are shared equally among the teams, how much of each supply will each team get?

Supplies	Price
2 sacks of flour, 4.5 pounds per sack	\$2.67 per sack
3 boxes of rice, 3.5 cups per box	\$1.89 per box
15 pounds of ground turkey	\$2.36 per pound

7. **MP.1 Make Sense and Persevere** Do you need all of the information given above to solve the problem? Explain.

8. **MP.2 Reasoning** Describe how to solve the problem.

9. **MP.4 Model with Math** Write equations to represent how much of each supply each team will get.

10. **MP.6 Be Precise** What is the solution to the problem? Explain.

11. **MP.3 Critique Reasoning** Lucas says that to find the total cost of the rice, you should multiply 3.5 by \$1.89. Do you agree? Explain.

Use reasoning to think about what the quantities in the table represent.

