

**Aim:** 4-4 I will be able to solve word problems using the **GREATEST COMMON FACTOR!**

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Date Key \_\_\_\_\_  
Math 6

**Warm-up:** Find the GCF for each set of numbers.

<p>1)            6 and 15</p> $\begin{array}{r l} 3 & 6 \quad 15 \\ 1 & 2 \quad 5 \end{array}$ <p style="text-align: center;">3 · 1 ↓</p> <p>GCF: <u>3</u></p>	<p>2)            5 and 14</p> $\begin{array}{r l} 1 & 5 \quad 14 \end{array}$ <p style="text-align: center;">*relatively prime</p> <p>GCF: <u>1</u></p>	<p>3)            5, 10, and 15</p> $\begin{array}{r l} 5 & 5 \quad 10 \quad 15 \\ 1 & 1 \quad 2 \quad 3 \end{array}$ <p style="text-align: center;">5 · 1 ↓</p> <p>GCF: <u>5</u></p>
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**Let's Investigate:** What are some key words that tell us to find the GCF?

Key words for finding the GCF	
Greatest	Most
Biggest	Maximum
Largest	Factors (divide into groups)

Read each word problem below and highlight key words that tell us to find the GCF.

**Example:** The community service club is making gift bags full of candy. They have 60 Twix bars, and 48 Blow-Pops. What is the greatest number of bags they can prepare using all of the candy?

Twix      Blow-pops

$$\begin{array}{r|l} 4 & 60 \quad 48 \\ 3 & 15 \quad 12 \\ 1 & 5 \quad 4 \end{array}$$

4 · 3 · 1 = 12 bags of candy

Now You Try! Partner Practice

Read each word problem below and highlight the key words that tell us to find the GCF. Answer the question and write your answer in a complete sentence!

- 1) I have 25 strawberries and 90 blueberries to make smoothies. I want to use all of the fruit. What is the greatest number of smoothies I can make using all of the blueberries and strawberries? How many strawberries and how many blueberries will I put in each?

$$\begin{array}{r|rr} 5 & 25 & 90 \\ 1 & 5 & 18 \end{array}$$

$5 \cdot 1 = 5$

$$S: 25 \div 5 = \underline{5}$$

$$B: 90 \div 5 = \underline{18}$$

you can make 5 smoothies  
with 5 strawberries + 18 blueberries  
per smoothie.

- 2) Ty has 20 logic puzzles and 40 visual puzzles that he wants to group into sets for his friends. He wants each set to be identical, containing the same combination of logic puzzles and visual puzzles, with no puzzles left over. What is the largest number of sets he can create?

$$\begin{array}{r|rr} & L & V \\ 4 & 20 & 40 \\ 5 & 5 & 10 \\ 1 & 1 & 2 \end{array}$$

$4 \cdot 5 \cdot 1 = 20$

The largest number of sets  
is 20 sets!

- 3) Emily is making flower arrangements. She has 16 red roses and 20 pink roses. Each arrangement must have the same combination of red roses and pink roses. What is the maximum number of arrangements Emily can make if every flower is used? How many red and pink roses will be in each flower arrangement?

$$\begin{array}{r|rr}
 & R & P \\
 4 & 16 & 20 \\
 1 & 4 & 5 \\
 \hline
 & & \\
 \end{array}$$

$R: 16 \div 4 = 4$   
 $P: 20 \div 4 = 5$

$4 \cdot 1 = 4$

Emily can make a maximum of 4 arrangements. There will be 4 red roses and 5 pink roses in each.

- 4) Isabell is making fruit baskets. She has 30 apples, 24 bananas, and 12 oranges.

- a) What is the greatest number of baskets she can make if each type of fruit is distributed equally among the baskets?

$$\begin{array}{r|rrr}
 6 & 30 & 24 & 12 \\
 1 & 5 & 4 & 2 \\
 \hline
 & & & \\
 \end{array}$$

$6 \cdot 1 = 6$

Isabell can make 6 baskets.

- b) What is the fewest number of fruit that will be in each basket?  
 "How many fruit will be in each basket?"

$$5 + 4 + 2 = \underline{11 \text{ fruit}}$$

- c) How many apples, bananas, and oranges will be in each basket?

$$A: 30 \div 6 = 5 \text{ apples}$$

$$B: 24 \div 6 = 4 \text{ bananas}$$

$$O: 12 \div 6 = 2 \text{ oranges}$$

- 5) You have 12 jars of grape jam, 16 jars of strawberry jam, and 24 jars of raspberry jam. You want to place the jam into the greatest possible number of boxes so that each box has the same number of jars of each kind of jam. How many boxes do you need?

2	12	16
2	6	8
1	3	4

$2 \cdot 2 \cdot 1 = 4$

You will need 4 boxes.

- 6) Can you write a set of three numbers that have a GCF of 9?

9	9, 18, 27
1	1 2 3

$9 \cdot 1$   
GCF = 9

9, 18, 27

- 7) The sum of three numbers is 60. Their greatest common factor is 4. Which of the following lists shows those three numbers?

- a) 4, 16, 36
- b) 8, 20, 32**
- c) 14, 16, 30
- d) 10, 18, 32

$$\begin{array}{r} 32 \\ 20 \\ + 8 \\ \hline 60 \checkmark \end{array}$$

4	8	20	32
1	2	5	8

$4 \cdot 1 = 4$