

Name: \_\_\_\_\_

## Summer Homework

### Factor practice

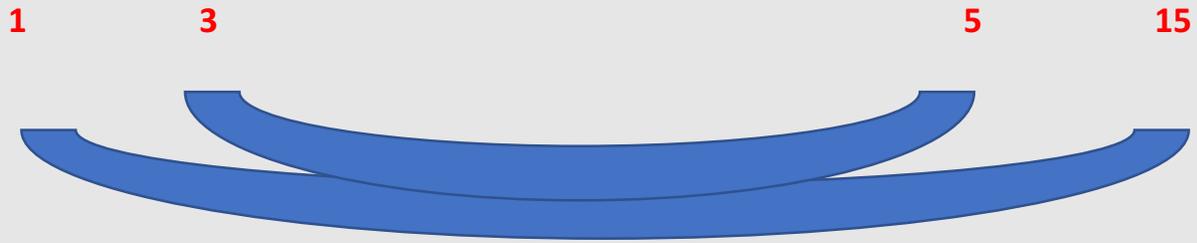
**Goal:** Find factors of a number

**Models:** Factor Rainbows or multiplication pairs

**Example:** Find the factors of 15

**Method:**

- Start your rainbow ends with 1 and the number itself ( $1 \times 15 = 15$ )
- Try 2. Does  $2 \times \text{something} = 15$ ? No? Okay, then...
- Try 3. Does  $3 \times \text{something} = 15$ ? Sure!  $3 \times 5 = 15$ . So continue your rainbow with 3 connecting to 5
- Try 4. Does  $4 \times \text{something} = 15$ ? No? Okay, then...
- Try 5. What?? It's already connected from  $3 \times 5$ ? Then you've found them all!



**Make factor rainbows to find the factors of the following:**

1) 8

3) 6

5) 75

2) 16

4) 12

6) 20

## Multiple Practice

**Goal: Find multiples of numbers**

**Models: Multiple lists**

**Example: Find the first 5 multiples of 6**

**Method: List multiples (numbers that can be made by multiplying the number itself by another number or by skip counting beginning with the number itself), and then locate the greatest factor on both lists for GCF or smallest multiple on both lists for LCM.**

**6: 6, 12, 18, 24, 30**

**Explanation: Each of these numbers was found by adding 6 to the previous number. Each of these numbers represents  $6 \times 1$ ,  $6 \times 2$ ,  $6 \times 3$ ,  $6 \times 4$ ,  $6 \times 5$ ...**

**Make multiple lists to find the first 5 multiples of...:**

**1) 8**

**3) 6**

**5) 10**

**2) 16**

**4) 12**

**6) 20**

## Some deeper thinking problems

7. Bri runs a lap of John Jay every 3 minutes. Maya runs a lap of John Jay every 4 minutes. If they start together running this pace starting at 1:00 PM, at what time will they arrive at the start together?

8. Mr. Hoffman has 12 kickballs, 20 soccer balls, and 8 basketballs. He wants to make as many bags of equipment as he can with the same number of each type of ball. How many bags can he make? How many of each type of ball will be in each bag?

9. In 6<sup>th</sup> grade, we will learn about the “Greatest Common Factor,” which means when you find the factors of 2 or more numbers, picking out the biggest factor they have in common. Find the greatest common factor of 8 and 12.

10. In 6<sup>th</sup> grade, we will learn about the “Least Common Multiple,” which means when you find the multiples of 2 or more numbers, picking out the smallest multiple they have in common. Find the least common multiple of 8 and 12.

11. Why do you think no one is ever interested in the Least Common Factor?  
Hint: What will the least common factor be for ANY numbers?

12. Why do you think it would be unfair to ask someone to find the Greatest Common Multiple? Hint: pick two numbers and try to find it!

## Order of Operations

**Methodology:** Use PEMDAS, but remember:

- With multiplication and division, work the problem left to right.
- Similarly, work left to right with addition and subtraction.
- Underline each calculation before you solve
- Work vertically, continuing to simplify until you are left with one number.
- The exponent tells you how many times to multiply the number by itself
  - $2^3 = 2 \times 2 \times 2 = 8$

**Example:**  $5 + \underline{3^2} \div 3 \times 2$   
 $5 + \underline{9} \div 3 \times 2$   
 $5 + \underline{3 \times 2}$   
 $\underline{5 + 6}$   
 $11$

**Note:** I have not shown calculations, but if I had to, I would do them on the side

**You try!**

1)

$$8 + 7 \cdot 9$$

2)

$$12 + 4^2$$

3)

$$24 - 9 \cdot 2 + 6 \div 3$$

4)

$$35 - (17 - 2) \div 5$$

## Introduction

*Write me a paragraph (or bonus, a poem) introducing yourself and how math has been going for you. IT'S OKAY IF YOU DON'T LIKE MATH... YOU WILL! It is helpful for me to get an idea of how you are feeling about math. Here's an example!*

### Mr. Levin's Math Poem

**Mr. Levin is my name  
And math is what I teach  
Except for in the summer  
When I'm hanging at the beach**

**As a kid I thought math came easy  
But in college, not so much  
Turned out I was only good at  
Memorizing and such**

**I never learned to think  
Critically and deep  
So when I bombed in calculus  
From my eyes did I weep**

**But even though I struggled  
And if you haven't yet, you will  
I changed around my perspective  
And I persisted still**

**Until I realized math  
Was more than fractions, decimals, and calculations  
It's common sense and thinking  
Whether logic, puzzles, and equations**

**So I welcome you to class  
And if math is tricky for you, that's great!  
We'll try to have some fun next year  
6<sup>th</sup> grade, I just can't wait!**