



# Helping With Math

## Adding and Subtracting Unlike Fractions

**GRADE 5**



In your previous lesson, you learned about similar fractions - what it is and how operations can be done with it. In this new topic, you will learn about unlike or dissimilar fractions. This worksheet provides you with fact files and challenging activities to help you understand this new concept.



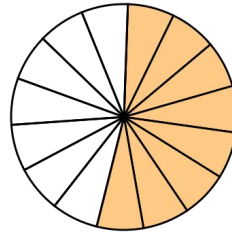
Hello, lovely kids! I am Mr. Baker. I own the newest bake shop in town. Come and visit my shop to taste delicious goods! Do you know that I divide my pies and cakes into fractional parts to sell per slice? Yes, I use math in baking!



## UNLIKE FRACTIONS

### FRACTIONS

Fractions represent equal parts of a whole or a collection.



$$= \frac{8}{15}$$

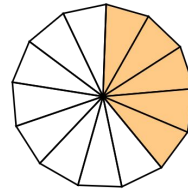
### EQUIVALENT FRACTIONS

Fractions with different numerators and denominators that represent the same value or proportion of the whole.

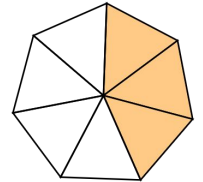


### UNLIKE FRACTIONS

These are fractions with different denominators.



$$\frac{5}{13}$$



$$\frac{3}{5}$$



### LIKE FRACTIONS

These are fractions with same denominators.



# MULTIPLES



## LET'S REVIEW

### MULTIPLES



- It is the result of multiplying numbers by another whole number.
- It is possible that a number can be a multiple of two or more numbers. This is called **common multiple**.
- The smallest number that is common to two or more multiples is called **least common multiple**.
- Determining the correct least common multiple (LCM) is needed to get the least common denominators of two unlike fractions.

Do you see any common multiple?

Multiples of 2	2	4	6	8	10	12
Multiples of 3	3	6	9	12	15	18

Since the multiples of 2 contains 6 and 12 and the multiples of 3 contains 6 and 12 as well, 6 and 12 are already considered common multiples. **6 is the smallest common multiple, it is call the least common multiple of 2 and 3.**



## CONCEPTS



### LET'S REVIEW

## FACTORS



- These are numbers being multiplied together to produce another number.
- Multiplying two or more numbers means that the factors are being multiplied together.
- In fact, factors are numbers involved when we perform multiplication.

## ILLUSTRATIVE EXAMPLES:

What are the factors of 18?

18

$1 \times 18$

$2 \times 9$

$3 \times 6$

The factors of 18 are 1, 2, 3, 6, 9, and 18.



## GREATEST COMMON FACTOR



**LET'S LEARN  
SOMETHING NEW!**



## GREATEST COMMON FACTORS

The greatest common factor, or GCF, is the greatest factor that divides two numbers.

To find the GCF of two numbers:

1. List the prime factors of each number.
2. Multiply those factors both numbers have in common. If there are no common prime factors, the GCF is 1.
  - GCF is needed in simplifying fractions or expressing them in simplest form.

**EXAMPLE: Find the GCF of 18 and 24.**

The prime factors of 18 are  $2 \times 3 \times 3$ .

The prime factors of 24 are  $2 \times 2 \times 2 \times 3$

Notice that there is one 2 and one 3 in common.

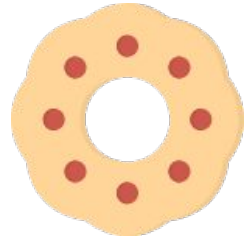
**Thus, the GCF of 18 and 24 is  $2 \times 3 = 6$ .**



## ADDING UNLIKE FRACTIONS



LET'S LEARN  
SOMETHING NEW!



## ADDING AND SUBTRACTING UNLIKE FRACTIONS

Before you can add or subtract fractions with different denominators,

1. Find the smallest multiple (LCM) of both numbers.
2. Rewrite the fractions as equivalent fractions with the LCM as the denominator.
3. Always express the answer in simplest form.

EXAMPLE: Find the sum of  $\frac{2}{3}$  and  $\frac{1}{5}$ .

The LCD  
is 15.



$$\frac{2}{3} = \frac{5 \times 2}{15}$$

*(The LCD 15 divided by the denominator of  $\frac{2}{3}$  which is 3 then multiply the quotient by the numerator.)*

$$= \frac{10}{15}$$

*The equivalent fraction of  $\frac{2}{3}$  with 15 as denominator is  $\frac{10}{15}$ .*



## ADDING UNLIKE FRACTIONS

continuation...

The LCD is  
15.

$$\Rightarrow \frac{1}{5} = \frac{3 \times 1}{15}$$

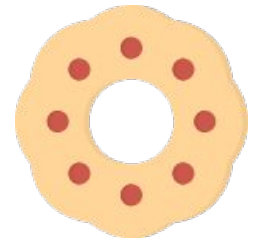
(The LCD 15 divided by the denominator of  $\frac{1}{5}$  which is 5 then multiply the quotient by the numerator.)

$$= \frac{3}{15}$$

The equivalent fraction of  $\frac{1}{5}$  with 15 as denominator is  $\frac{3}{15}$ .

$$\frac{2}{3} + \frac{1}{5} = \frac{10}{15} + \frac{3}{15} = \frac{10 + 3}{15} = \frac{13}{15}$$

$$\frac{2}{3} + \frac{1}{5} = \frac{13}{15}$$



**EXAMPLE:** Find the difference of  $\frac{2}{3}$  and  $\frac{1}{5}$ .

The LCD is  
15.

$$\Rightarrow \frac{2}{3} = \frac{5 \times 2}{15}$$

(The LCD 15 divided by the denominator of  $\frac{2}{3}$  which is 3 then multiply the quotient by the numerator.)

$$= \frac{10}{15}$$

The equivalent fraction of  $\frac{2}{3}$  with 15 as denominator is  $\frac{10}{15}$ .



## SUBTRACTING UNLIKE FRACTIONS

continuation...

The LCD  
is 15.



$$\frac{1}{5} = \frac{3 \times 1}{15}$$

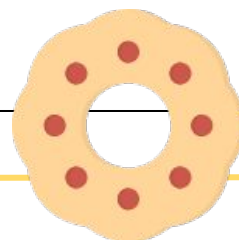
(The LCD 15 divided by the denominator of  $\frac{1}{5}$  which is 5 then multiply the quotient by the numerator.)

$$= \frac{3}{15}$$

The equivalent fraction of  $\frac{1}{5}$  with 15 as denominator is  $\frac{3}{15}$ .

$$\frac{2}{3} - \frac{1}{5} = \frac{10}{15} - \frac{3}{15} = \frac{10 - 3}{15} = \frac{7}{15}$$

$$\frac{2}{3} - \frac{1}{5} = \frac{7}{15}$$



## PRACTICE EXERCISES

$$\frac{9}{2} + \frac{5}{3} =$$

$$\frac{2}{4} - \frac{2}{5} =$$

$$\frac{4}{9} + \frac{4}{5} =$$





# TABLE OF ACTIVITIES

1. The Discounted Oven
2. Baking Tools
3. Baked goods For Sale
4. Pastry Ingredients
5. Pizza Crusts
6. Happy Donuts
7. Craving for Cookies
8. Cake Lover
9. Everyday Treats with Baked Goods
10. Is it a Piece of A Cake?



# THE DISCOUNTED OVEN

Help Mr. Baker get a discount in buying this much needed oven for his bakery. Supply the concept being described.

1) It represents part of a whole or a collection of whole. The upper part is called numerator and the lower part is called denominator.

2) These are fractions whose denominators are similar to one another.

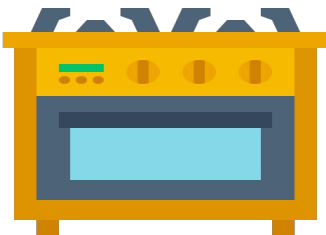
3) These are fractions with different numbers in denominators and numerators but have same values.

4) These are fractions whose denominators are different from one another.

5) It is the smallest number that is common to two or more multiples.

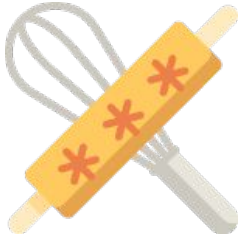
6) These are numbers being multiplied together to produce another number.

7) It is needed in simplifying fractions or expressing them in simplest form.



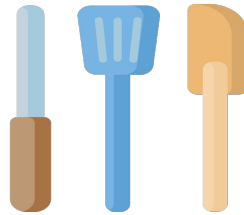
# BAKING TOOLS

Mr. Bread is looking for some baking tools to make delicious goodies. Help him identify these tools by finding the LCM.



1) 4 and 8

LCM: \_\_\_\_\_



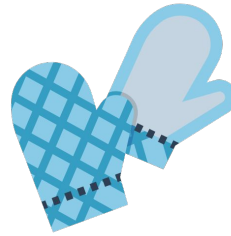
2) 6 and 9

LCM: \_\_\_\_\_



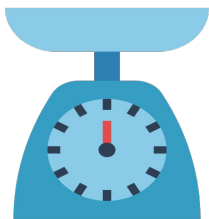
3) 10 and 8

LCM: \_\_\_\_\_



4) 3 and 7

LCM: \_\_\_\_\_



5) 9 and 4

LCM: \_\_\_\_\_



6) 10 and 5

LCM: \_\_\_\_\_



## BAKED GOODS FOR SALE

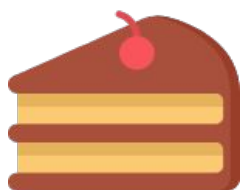
These delicious goodies are for sale! For you to avail a 10% off on its price, solve for the GCF of the following numbers.



1) 20 and 10

GCF: \_\_\_\_\_

Solution:



2) 45 and 6

GCF: \_\_\_\_\_

Solution:



3) 14 and 21

GCF: \_\_\_\_\_

Solution:



4) 36 and 48

GCF: \_\_\_\_\_

Solution:



5) 100 and 50

GCF: \_\_\_\_\_

Solution:



# PASTRY INGREDIENTS

Below are measurements of pastry ingredients needed by Ms. Cupcake. Express them into equivalent fractions.

1)  $\frac{7}{8}$  and  $\frac{2}{5}$

Solution:

2)  $\frac{3}{4}$  and  $\frac{5}{7}$

Solution:

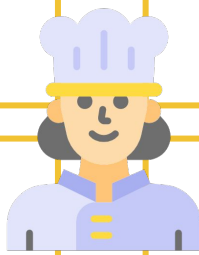


3)  $\frac{1}{2}$  and  $\frac{7}{10}$

Solution:

4)  $\frac{6}{7}$  and  $\frac{3}{5}$

Solution:



5)  $\frac{8}{5}$  and  $\frac{2}{9}$

Solution:

6)  $\frac{5}{10}$  and  $\frac{9}{4}$

Solution:



# PIZZA CRUSTS

Look at these lovely pizza crusts! Help the baker write the fraction and identify if they are like or unlike fractions. Put a check on your answer.

1)



LIKE

UNLIKE



2)



LIKE

UNLIKE

3)



LIKE

UNLIKE



4)



LIKE

UNLIKE



# HAPPY DONUTS

Hmmmmn! Do you smell the aroma of these delicious donuts? But wait! You need to solve the following fractions before you taste them!

1)  $\frac{9}{4} + \frac{5}{7} =$



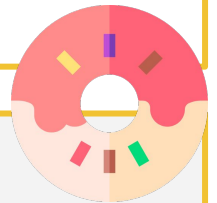
2)  $\frac{1}{4} + \frac{2}{3} =$

3)  $\frac{4}{10} + \frac{4}{5} =$



4)  $\frac{2}{9} + \frac{6}{7} =$

5)  $\frac{6}{8} + \frac{1}{9} =$



6)  $\frac{1}{4} + \frac{3}{7} =$



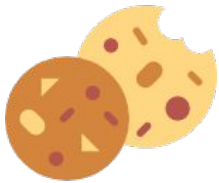
# CRAVING FOR COOKIES

Jeff is lost in his way towards the bakery of Mr. Baker. Help him find his way by solving for the difference of the following unlike fractions.



5)  $\frac{7}{10} - \frac{2}{3}$

4)  $\frac{6}{10} - \frac{3}{7}$



3)  $\frac{1}{5} - \frac{1}{8}$

2)  $\frac{9}{8} - \frac{2}{5}$

1)  $\frac{3}{2} - \frac{1}{6}$





# CAKE LOVER

Hillary loves cakes! However, her mother will only buy her favorite food if she will answer the following problems correctly. Go and help her! An example is done for you.

E  
X  
A  
M  
P  
L  
E

$$1 \frac{1}{2} + \frac{1}{3} = \frac{(2 \times 1) + 1}{2} + \frac{1}{3} = \frac{2 + 1}{2} + \frac{1}{3}$$

➔

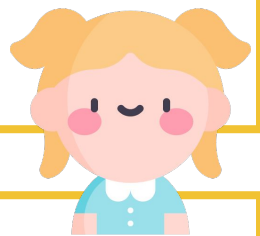
$$= \frac{3}{2} + \frac{1}{3} = \frac{9}{6} + \frac{2}{6} = \frac{11}{6}$$

$$2 \frac{3}{5} + \frac{2}{5} \rightarrow$$

$$3 \frac{1}{4} + \frac{5}{7} \rightarrow$$

$$3 \frac{2}{7} - \frac{1}{3} \rightarrow$$

$$6 \frac{2}{3} - \frac{8}{9} \rightarrow$$



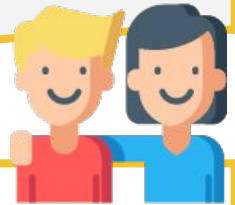
# EVERYDAY TREATS WITH BAKED GOODS

Solve the problems below. These are common real-life applications of fractions. Write your complete solution.

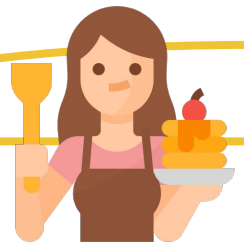


Paul ate  $\frac{2}{8}$  of a pizza and Jessie ate  $\frac{1}{4}$  of it.

How much pizza did they eat together?



Your mother is making a cake for your birthday. She needs to mix the following dry ingredients: Flour --  $4\frac{1}{2}$  cups, sugar---  $2\frac{1}{3}$  cups and baking powder ---  $\frac{1}{10}$  cup. What is the total number of cups of the dry ingredients?



# IS IT A PIECE OF A CAKE?

Reflect on the learnings you just acquired in this lesson. Then answer the following questions.

What are the things that you have learned from this lesson?

---

---

---

---

What are the challenges that you encountered? How did you address it?

---

---

---

---

*"We do not learn from experience. We learn from reflecting on it."*

**John Dewey**

How will you apply your learning in real life?

---

---

---

---



# ANSWER GUIDE

## Activity 1

1. Fraction
2. Like fractions
3. Equivalent Fractions
4. Unlike fractions
5. Least common Multiples
6. Factors
7. Greatest common factor

## Activity 2

1. 8
2. 18
3. 40
4. 21
5. 36
6. 20

## Activity 3

1. 10
2. 3
3. 7
4. 12
5. 50

## Activity 4

1.  $\frac{35}{40}$  and  $\frac{16}{40}$
2.  $\frac{21}{28}$  and  $\frac{20}{28}$
3.  $\frac{5}{10}$  and  $\frac{7}{10}$
4.  $\frac{30}{35}$  and  $\frac{21}{35}$
5.  $\frac{72}{45}$  and  $\frac{10}{45}$
6.  $\frac{10}{20}$  and  $\frac{45}{20}$



# ANSWER GUIDE

## Activity 5

- |    |                                   |                                  |                                  |                                    |                                     |                                    |                                       |
|----|-----------------------------------|----------------------------------|----------------------------------|------------------------------------|-------------------------------------|------------------------------------|---------------------------------------|
| 1. | <input type="text" value="2/9"/>  | <input type="text" value="6/9"/> | <input type="text" value="5/9"/> | <input type="checkbox" value="x"/> | <input type="button" value="LIKE"/> | <input type="checkbox"/>           | <input type="button" value="UNLIKE"/> |
| 2. | <input type="text" value="2/6"/>  | <input type="text" value="4/7"/> | <input type="text" value="5/7"/> | <input type="checkbox"/>           | <input type="button" value="LIKE"/> | <input type="checkbox" value="x"/> | <input type="button" value="UNLIKE"/> |
| 3. | <input type="text" value="1/8"/>  | <input type="text" value="4/8"/> | <input type="text" value="5/7"/> | <input type="checkbox"/>           | <input type="button" value="LIKE"/> | <input type="checkbox" value="x"/> | <input type="button" value="UNLIKE"/> |
| 4. | <input type="text" value="8/10"/> | <input type="text" value="7/9"/> | <input type="text" value="6/9"/> | <input type="checkbox"/>           | <input type="button" value="LIKE"/> | <input type="checkbox" value="x"/> | <input type="button" value="UNLIKE"/> |

## Activity 6

- |            |            |
|------------|------------|
| 1. $83/28$ | 4. $68/63$ |
| 2. $11/12$ | 5. $31/36$ |
| 3. $6/5$   | 6. $19/28$ |

## Activity 7

- |            |           |
|------------|-----------|
| 1. $4/3$   | 4. $6/35$ |
| 2. $29/40$ | 5. $1/30$ |
| 3. $3/40$  |           |

## Activity 8

- |              |              |
|--------------|--------------|
| 1. 3         | 3. 2 $16/21$ |
| 2. 3 $27/28$ | 4. 8 $2/3$   |



# ANSWER GUIDE

## Activity 9

1.  $\frac{1}{2}$  of a pizza
2.  $\frac{14}{15}$  cups

## Activity 10

Answers may vary.



# Copyright Notice

This resource is licensed under the [Creative Commons Attribution-NonCommercial 4.0](https://creativecommons.org/licenses/by-nc/4.0/) International license.

You are free to:

- **Share** – copy and redistribute the material in any medium or format
- **Adapt** – remix, transform, and build upon the material

Under the following terms:

- **Attribution** – You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
- **NonCommercial** – You may not use the material for commercial purposes.

For more information on this license, visit the following link:

<http://creativecommons.org/licenses/by-nc/4.0/>

Where possible, free-use images are sourced from online repositories such as Wikipedia and Wikimedia Commons. References and sources for images are provided in the speaker notes section of this document.

Thank you!



# Thank you

Thank you so much for purchasing and downloading this resource.

We hope it has been useful for you in the classroom and that your students enjoy the activities.

For more teaching and homeschooling resources like this, don't forget to [come back](#) and download the new material we add every week!

Thanks for supporting **Helping With Math**. We can provide teachers with low-cost, high-quality teaching and homeschooling resources because of our loyal subscribers and hope to serve you for many years to come.

- The Entire Helping With Math Team :)

