



# **Mathematics 4 Microlearning Module**

### **OUARTER 2 – Module 14**

Adding and Subtracting Similar Fractions





**REGION XII - DIVISION OF SULTAN KUDARAT** 

#### Mathematics 4 Microlearning Module (MLM) Quarter 2 – Module 14: Adding and Subtracting Similar Fractions First Edition, 2024

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Development Team			
Writer	: John Paul Art G. Echavaria		
Editor	: Feberick O. Quitor		
Evaluator	: Marlou B. Faeldonia		
Cover Art Designer:		Jann Mark P. Oriel	
Management Team:		Crispin A. Soliven Jr., CESE – Schools Division Superintendent	
		Meilrose B. Peralta EdD – Asst. Schools Division Superintenden	
		Ismael M. Ambalgan – Chief, CID	
		Sheryl L. Osano – EPS, LRMS	
		Rodolfo B. Bermudo, Jr. EdD – EPS, Mathematics	

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Office Address: Kenram, Isulan, Sultan Kudarat Telefax: 064-471-1007 E-mail Address: depedsk.r12@deped.gov.ph

Name:		Grade & Sec:	Score:	
Subject: <u>Matl</u>	nematics	Quarter: <u>2</u>	MLM No <u>. 14</u>	
Teacher:				
Competency: Add and subtract similar fractions:				
	a. two pro	per fractions;		
	b. two mix	ed numbers;		
	c. a mixed	l number and a proper fra	action;	
	d. a whole	number and a proper fra	action; and	

#### **MICROLEARNING MODULE**

e. a whole number and a mixed number

#### A. Look Back!

A. Directions: Plot the missing fractions by writing the correct answer in the box.



B. Directions: Draw a number line. Then, write the following fractions on it. Place your answer in the box provided.



#### C. What's New?

Observe and study each fraction model and complete the addition/subtraction equation.



#### ADDING AND SUBTRACTING SIMILAR FRACTIONS WITH TWO PROPER FRACTIONS

Read the problem and study the solution below.

Mother cooked a tray of pancit. The children ate  $\frac{2}{5}$ , while the Father ate  $\frac{1}{5}$  of it. What part of the whole tray of pancit was eaten?

To find the answer, you need to add the following.

Number sentence: 
$$\frac{2}{5} + \frac{1}{5} =$$
\_\_\_\_\_

To illustrate:



So, you have the equation:

 $\frac{2}{5} + \frac{1}{5} = \frac{2+1}{5} = \frac{3}{5} \longrightarrow number of parts eaten in all$ 

Complete answer: Father and the children ate  $\frac{3}{5}$  of the whole tray of pancit.

Now, let's see how similar fractions with 2 proper fractions are subtracted.

 $\frac{4}{6} - \frac{3}{6} =$ \_\_\_\_\_



#### ADDING AND SUBTRACTING TWO MIXED NUMBERS WITH COMMON DENOMINATOR

Read the problem and study the solution below.

Uncle John added  $2\frac{3}{5}$  cups of coconut milk to steam a sapin-sapin. He later realized that he needed more sapin-sapin as a few more relatives were joining their family for the birthday party. He added more  $1\frac{2}{5}$  cups of coconut milk. How many cups of coconut milk did he use in total?

To find the answer, you need to add the following.

Number sentence:  $2\frac{3}{5} + 1\frac{2}{5} =$ \_\_\_\_\_

Step 1: Add the whole number.

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

Step 2: Add the fractional parts.



Step 3: Follow the procedure in adding similar fractions

$$2\frac{3}{5} + 1\frac{2}{5} = 2 + 1 + \frac{3}{5} + \frac{2}{5}$$
$$= 3 + \frac{3+2}{5}$$
$$= 3 + \frac{5}{5}$$
$$= 3 + 1$$
$$= 4$$

Complete answer: Uncle John added 4 cups of coconut milk.

## Now, let's see how 2 mixed numbers with common denominators are subtracted.

 $5\frac{6}{10} - 1\frac{3}{10} =$ \_\_\_\_\_

To find the answer, you need to subtract the following.

Number sentence:  $5\frac{6}{10} - 1\frac{3}{10} =$ \_\_\_\_\_

Step 1: Subtract the whole number.

$$5\frac{6}{10} - 1\frac{3}{10} = 5 - 1$$

Step 2: Subtract the fractional parts.

$$5\frac{6}{10} - 1\frac{3}{10} = 5 - 1 \frac{6}{10} - \frac{3}{10}$$

Step 3: Follow the procedure in subtracting similar fractions

$$5\frac{6}{10} - 1\frac{3}{10} = 5 - 1\frac{6}{10} - \frac{3}{10}$$
$$= 4\frac{6-3}{10}$$
$$= 4\frac{3}{10}$$



#### **ALWAYS REMEMBER!**

To add and subtract mixed numbers having the same denominator, first add or subtract the whole numbers, then the fractional parts. Follow the procedure in adding or subtracting similar fractions. Simplify the answer if possible.

#### ADDING AND SUBTRACTING A MIXED NUMBER AND A PROPER FRACTION WITH COMMON DENOMINATOR

Read the problem and study the solution below.

Maria baked  $3\frac{1}{4}$  trays of bibingka for their merienda. Later, she baked an additional  $\frac{2}{4}$  of trays. How many trays of bibingka did she bake in total?

To find the answer, you need to do the following steps:

Number sentence:  $3\frac{1}{4} + \frac{2}{4} =$ \_\_\_\_\_

Step 1: Covert the mixed number into an improper fraction.

$$3\frac{1}{4} = \frac{13}{4}$$

Step 2: Add the improper fraction and the proper fraction.

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

Step 3: Rename the improper fraction to a mixed number.

$$\frac{15}{4} = 3\frac{3}{4}$$

*Complete answer:* Maria baked a total of 3 and  $\frac{3}{4}$  trays of bibingka.

### Now, let's see how a mixed number and a proper fraction with common denominators are subtracted.

 $5\frac{1}{3}-\frac{2}{3}=$ \_\_\_\_\_

Step 1: Convert the mixed number into an improper fraction.

$$5\frac{1}{3} = \frac{16}{3}$$

Step 2: Subtract the improper fraction and the proper fraction.

$$\frac{16}{3} - \frac{2}{3} = \frac{16-2}{3} = \frac{14}{3}$$

Step 3: Rename the improper fraction to a mixed number.

$$\frac{14}{3} = 4\frac{2}{3}$$



#### **ALWAYS REMEMBER!**

To add and subtract mixed number and a proper fraction with common denominator, convert first the mixed number into improper fraction. Then, add or subtract the improper fraction and the proper fraction. Finally, rename the improper fraction to mixed number.

#### ADDING AND SUBTRACTING A WHOLE NUMBER AND A PROPER FRACTION

Read the problem and study the solution below.

Joel is preparing himself for the Palarong Pambansa. Today, he went out jogging and ran 3 miles. During his cool-down, he walked an additional of  $\frac{1}{2}$  mile. How far did he travel in total?

To find the answer, you need to do the following steps:

Number sentence: 
$$3 + \frac{1}{2} =$$
\_\_\_\_\_

Step 1: Convert the whole number to a fraction.

Step 2: Find the Least Common Denominator (LCD) of both fractions and multiply it by both numerators.

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

Step 3: Add the numerator and keep the denominator.

$$\frac{3}{1} + \frac{1}{2} = \frac{6+1}{2} = \frac{7}{2}$$

Step 4: Rename the improper fraction to a mixed number.

$$\frac{7}{2} = 3\frac{1}{2}$$

Complete answer: Joel traveled  $3\frac{1}{2}$  miles during his jog and cool-down.

#### Now, let's see how a whole number and a proper are subtracted.

 $5 - \frac{3}{4} = \underline{\qquad}$ Step 1: Convert the whole number to a fraction.  $\frac{5}{1}$ Step 2: Find the Least Common Denominator (LCD) of both fractions and multiply it by both numerators.  $\frac{5}{1} - \frac{3}{4} = \frac{20-3}{4}$ Step 3: Add the numerator and keep the denominator.  $\frac{5}{1} - \frac{3}{4} = \frac{20-3}{4} = \frac{17}{4}$ Step 4: Rename the improper fraction to a mixed number.  $\frac{17}{4} = 4\frac{1}{4}$ 

#### ADDING AND SUBTRACTING A WHOLE NUMBER AND A MIXED NUMBER

### Let's see how a whole number and a mixed number are added and subtracted.

Addition:

 $4 + 5\frac{2}{3} =$ \_\_\_\_\_

Step 1: Add both the whole numbers.

$$4 + 5\frac{2}{3} = 4 + 5$$

Step 2: Copy the fraction part.

$$4 + 5\frac{2}{3} = 9\frac{2}{3}$$

Subtraction:

 $7 - 2\frac{3}{5} =$ \_\_\_\_\_

Step 1: Regroup or change the whole number to a mixed number and the fractional part needs to be equal to one.

$$6\frac{5}{5} - 2\frac{3}{5} =$$

Step 2: Proceed in the process of subtracting mixed numbers.

$$6\frac{5}{5} - 2\frac{3}{5} = 6 - 2\frac{5-3}{5} = 4\frac{2}{5}$$

#### E. Let's Try!

A. Directions: Match the number sentence in Column A to its sum/difference in Column B. Write only the letter of your answer in the blank provided before the number.

Column A	Column B
$1.\frac{7}{6}-\frac{2}{6}$	a. $7\frac{1}{2}$
$\_2.6\frac{5}{9}+1\frac{2}{9}$	b. $11\frac{3}{4}$
$3.5\frac{3}{7}+\frac{2}{7}$	c. 5 $\frac{5}{7}$
4. 11 + $\frac{3}{4}$	d. $7\frac{7}{9}$
<u>5. 13 - 5 <math>\frac{1}{2}</math></u>	e. $\frac{5}{6}$

- B. Directions: Read and solve the given problem. Write the complete answer on the line provided.
  - 1. Fidel and Juana had  $\frac{9}{10}$  of an hour to clean the house. Fidel cleaned in  $\frac{5}{10}$  of an hour. How long did Juana clean?

#### F. Let's Evaluate!

Direction: Perform the operation of the following fractions.

1.)  $\frac{8}{11} + \frac{5}{11} =$  2.)  $\frac{21}{50} - \frac{10}{50} =$  3.)  $4\frac{5}{9} + 8\frac{4}{9} =$  4.)  $6\frac{8}{10} - 4\frac{4}{10} =$  5.)  $5\frac{8}{17} + \frac{2}{17} =$  6.)  $7\frac{2}{3} - \frac{1}{3} =$  7.)  $6 + \frac{1}{3} =$  8.)  $4 - \frac{3}{4} =$  9.)  $10 + 12\frac{2}{10} =$  10.)  $7 - 2\frac{1}{4} =$ 

#### **G. References**

Creag, Herminia C. 2022. *Real-Life Mathematics 4 Second Edition*. Quezon City, Philippines: ABIVA Publishing House, Inc.

Crismundo, Kay Therese G. and Noves S. Salingan. *Self-Learning Kit Mathematics 6.* Negros Oriental, Philippines: DepEd Schools Division of Negros Oriental

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Answer Key					
<b>A. Look Back!</b> A. $\frac{2}{2}, \frac{4}{2}, 1$					
B. ← + + + + + →					
$\frac{2}{4}$ $\frac{3}{4}$					
<b>B. What's New?</b> $1\frac{3}{2}$					
<sup>1</sup> <sup>8</sup> <sup>6</sup> <sup>6</sup> <b>D. Let's Try!</b>					
a. 1. E 2. D					
3. C 4. B					
<b>b.</b> Juana cleaned for $\frac{2}{r}$ of an hour.					
E. Let's Evaluate!					
1. $\frac{13}{11}$ or $1\frac{2}{11}$					
$2.\frac{11}{50}$					
3. 13					
4. $2\frac{2}{5}$					
5. $5\frac{10}{17}$					
6. $7\frac{1}{3}$					
7. $6\frac{1}{3}$					
8. $3\frac{1}{4}$					
9. $22\frac{1}{5}$					
10. $4\frac{3}{4}$					