

 MATATAG K to 10 Curriculum Weekly Lesson Log	School:	Visit DepEdResources.com for More	Grade Level:	7
	Name of Teacher		Learning Area:	MATHEMATICS
	Teaching Dates and Time:	SEPTEMBER 16 - 20, 2024 (WEEK 8)	Quarter:	First
I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES				
A. Content Standards	The learner should have knowledge and understanding of operations on rational numbers			
B. Performance Standards	By the end of the quarter, the learners will be able to perform operations on rational numbers			
C. Learning Competencies and Objectives	Learning Competency 1. Perform operations on rational numbers.			
D. Content	Operations on Rational Numbers			
E. Integration	Discounts (Finance), Value of Sharing			
II. LEARNING RESOURCES				
Adding decimals. (n.d.). https://www.mathsisfun.com/adding-decimals.html Cruz, L. L., & Nolasco, O. M. (2017). Skill Book in Mathematics 7. St. Bernadette Publishing House Corporation. IXL Maths Online maths practice. (n.d.). IXL Learning. https://www.ixl.com/math/lessons/adding-and-subtracting-rational-numbers IXL Maths Online maths practice. (n.d.-b). IXL Learning. https://www.ixl.com/math/lessons/multiplying-and-dividing-rational-numbers				
III. TEACHING AND LEARNING PROCEDURE				NOTES TO TEACHERS

A. Activating Prior Knowledge	DAY 1 1. Short Review Part 1. Answer the following review questions. 1. What are rational numbers? 2. What are similar fractions? 3. What are dissimilar fractions? 4. How do we add or subtract similar fractions? 5. How do we add or subtract dissimilar fractions? 6. How do we multiply fractions?	This review focuses on recalling students' understanding on the operations on fractions. It's the prerogative of the teacher to provide examples that will activate the prior knowledge of students in answering the review questions.
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	7. How do we divide fractions? Part 2. Perform the following operations on fractions and decimals. Express your answer in lowest terms. 1. $\frac{1}{3} + \frac{2}{3}$ 2. $\frac{5}{6} - \frac{1}{6}$ 3. $\frac{4}{7} \cdot \frac{5}{9}$ 4. $\frac{14}{15} + \frac{2}{3}$ 5. $\frac{12}{7}$ 6. $\frac{8}{9} + \frac{1}{4}$ 7. $0.61 + 2.342$ 8. $43.46 - 31.52$ 9. $1.43 \cdot 6.34$ 10. $\frac{84.021}{2.1}$ 2. Feedback (Optional)	The teacher is encouraged to let the students perform the review questions in solving the operations that involve fractions and decimals Answers: 1. 1 2. $\frac{2}{3}$ 3. $20/63$ 4. $28/45$ 5. $8 \frac{1}{4}$ 6. $1 \frac{5}{36}$ 7. 2.952 8. 11.94 9. 9.0662 10. 40.01
B. Establishing Lesson Purpose	1. Lesson Purpose - Have you ever wondered how we calculate discounts, taxes, or measurements accurately? - What about dividing a pizza among friends or figuring out your average grade in class? All these everyday tasks involve operations on rational numbers. 2. Unlocking Content Area Vocabulary	The teacher is encouraged to gather responses from the students to generalize and introduce the topic lesson on operations on rational numbers.
C. Developing and Deepening Understanding	DAY 2 1. Explicitation Observe the expression below. How can we find the result of these operations? What do you notice on the denominators of the fractions? $\left(\frac{1}{3} + \frac{5}{3}\right) - \left(\frac{1}{4} + \frac{3}{4}\right)$ How about these expressions. a. $\frac{1}{3} + \frac{3}{2} - \left(\frac{1}{2} \cdot \frac{1}{4}\right) + \frac{2}{5}$ b. $(4.6 \cdot 3.2) - 0.89 + \frac{1.42}{1.1}$ <i>How are we going to solve these? What are the results of these expressions?</i> The given problem is an example of performing operations on rational numbers.	It is advisable to elicit more responses from students. It's in the discretion of the teacher if he/she will allow students to solve the given expressions.

DAY 3**2. Worked Example**

Perform the following operations on rational numbers.

A. Addition and Subtraction of Rational Numbers

- 1) $2.03 + 0.041 + 5.325 = 7.396$
- 2) $12.245 - 4.5124 - 2.521 = 5.2116$
- 3) $4\frac{1}{4} + 3\frac{2}{5} = 7\frac{13}{20}$
- 4) $\frac{6}{13} - \frac{2}{9} = \frac{28}{117}$
- 5) $6.89 - 1\frac{4}{5} = 5.09$

Pointers to consider in adding and subtracting rational numbers. For Fractions:

- To add or subtract two rational numbers (fractions) with the same denominator, we simply add or subtract the numerators and write the result over the common denominator.
- When the denominators are not the same, we must find the equivalent fractions with the same denominators. In other words, we make the fractions similar.
- For Mixed numbers, convert it to improper fractions and perform the operation

For Decimals:

- Line up the decimal points vertically. Fill in any 0's where necessary.
- Add or subtract the numbers as if they were whole numbers.
- Place the decimal point in the sum or difference so that it lines up vertically with the numbers being added or subtracted.

For Combination of Fractions and Decimals

- Convert all the terms in a similar form, either in all decimals, or fractions.
- Follow the usual way of adding and subtracting rational numbers.

B. Multiplication of Rational Numbers

- 1) $3\frac{1}{4} \cdot 1\frac{1}{2} = 1\frac{5}{8}$
- 2) $\frac{12}{15} \cdot \frac{3}{7} = \frac{12}{35}$
- 3) $4.82 \cdot 32.4 = 138.672$
- 4) $8\frac{2}{3} \cdot 1.75 = 15\frac{1}{6}$

It is also important to note that since formal discussion about integers will happen on the third quarter, the involvement of negative integers is not advisable in this lesson.

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Pointers to consider in multiplying rational numbers. For Fractions:

- Rewrite any mixed numbers as improper fractions.
- Multiply the numerators, and then multiply the denominators.
- Simplify, if needed.

For Decimals:

- Multiply as you would with whole numbers.
- Move the decimal point in the product one place to the left for each decimal place in the factors.

For Combination of Fractions and Decimals:

- Convert all the terms in a similar form, either in all decimals, or fractions.
- Follow the usual way of multiplying rational numbers.

C. Division of Rational Numbers

$$\begin{array}{ll} 1) \frac{\overset{14}{15}}{3} = \frac{28}{45} & 3) \frac{11.7}{5.2} = 2.25 \\ 2) \frac{\overset{2}{20}}{14} = \frac{1}{14} & 4) \frac{6.973}{1.9} = 3.67 \end{array}$$

Pointers to consider in dividing rational numbers For Fractions:

- Rewrite any mixed numbers as improper fractions.
- Multiply the dividend by the reciprocal of the divisor.
- Simplify, if needed

For Decimals:

- Move the decimal point to the right to make the divisor a whole number. Move the decimal point the same number of places to the right in the dividend.
- Place the decimal point in the quotient directly above the decimal point in the dividend.
- Divide until there is no remainder, or until the quotient begins to repeat in a pattern. Annex zeros, if necessary.

The teacher is encouraged to elicit initial responses from students before working on the solutions.

The teacher may come up with his/her own process of solving the given examples.

The teacher has the prerogative on how he/she will execute the worked example. He/she may add other worked examples.

- For Combination of Fractions and Decimals
- Convert all the terms in a similar form, either in all decimals, or fractions.
 - Follow the usual way of dividing rational numbers.

DAY 4

3. Lesson Activity

Determine the hidden phrase by performing the operations on rational numbers. Show your complete solution.

- R. $1\frac{2}{5}$

F. 7.242

T. $3\frac{31}{50}$

O. 26.32

E. 4.157

A. $\frac{5}{7}$

H. $\frac{7}{6}$
- I. 32.26

S. $1\frac{11}{14}$

N. $38\frac{2}{5}$

M. 5.48

K. 7.222

U. 1.375

F. $5\frac{5}{11}$

Hidden Phrase:

$1.23 + 4.25$	$\frac{45}{49} \cdot \frac{7}{9}$	$\frac{13}{25} + 18 - \frac{5}{10}$	$\frac{7}{4} \cdot \frac{3}{2}$

$\frac{36.13}{1.12}$	$4\frac{6}{7} - 3\frac{1}{14}$

$7.442 - \frac{5}{25}$	$\frac{1}{4} \cdot 5.5$	$\frac{12}{6} \cdot \frac{14}{5}$

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See the Learning Activity Worksheet.

Answers:
Hidden Phrase: MATH IS FUN

D. Making Generalizations	1. Learners' Takeaways Answer the following problems: 1. What new knowledge did you gain from this week's topic? 2. Which part of the lesson do you find challenging to understand? 3. What aspects of the lesson surprised you the most?	The teacher will guide the students in answering the takeaway questions and reflections.
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2. Reflection on Learning

Answer the following reflection questions.

1. Looking back, what was the most valuable takeaway from this week's lesson for you?
2. In what ways has this learning guide impacted your perspective or thinking?

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION**NOTES TO TEACHERS****A. Evaluating Learning****DAY 5****1. Formative Assessment**

Perform the following operations on rational numbers. Show your complete solution. Round off to the nearest hundredths (for decimals). Express your answers in simplest form / mixed number (for fractions).

$$1. 92.516 - 12.531 + 41.535$$

$$6. \frac{6.89}{1.56}$$

$$2. \frac{5^2}{10^3} -$$

$$7. 17.425 - 12.512 - 1.435$$

$$3. 4^6 \div 1^5 -$$

$$8. 4^5 \cdot 6^1$$

$$4. 1 - \frac{4}{5} \div \frac{1}{2}$$

$$9. \frac{42.12}{20}$$

$$5. 4.24 \cdot 3.14$$

$$10. \frac{150}{3}$$

2. Homework (Optional)**Answer Key:**

$$1. 121.52$$

$$2. \frac{5}{24}$$

$$3. 6 \frac{7}{12}$$

$$4. \frac{7}{10}$$

$$5. 13.31$$

$$6. 4.42$$

$$7. 3.478$$

$$8. 41 \frac{1}{6}$$

$$9. 2.11$$

$$10. \frac{4}{25}$$

B. Teacher's Remarks

Note observations on any of the following areas:

Effective Practices**Problems Encountered**

strategies explored

materials used

learner engagement/ interaction

The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies, materials used, learner engagement and other related stuff.

	<i>others</i>			Teachers may also suggest ways to improve the different activities explored/lesson exemplar.
C. Teacher's Reflection	<i>Reflection guide or prompt can be on:</i> • <u>principles behind the teaching</u> <i>What principles and beliefs informed my lesson? Why did I teach the lesson the way I did?</i> • <u>students</u> <i>What roles did my students play in my lesson? What did my students learn? How did they learn?</i> • <u>ways forward</u> <i>What could I have done differently? What can I explore in the next lesson?</i>			Teacher's reflection in every lesson conducted/facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.