

7

# Lesson Exemplar for Mathematics

Quarter 1

Week

7

## Lesson Exemplar Sheet for Mathematics Grade 7 Quarter 1: Week 7

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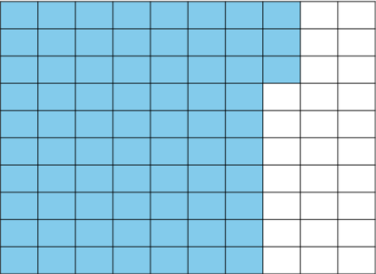
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<b>MATATAG K to 10 Curriculum Weekly Lesson Log</b>	School	Grade Level	7
	Name of Teacher	Learning Area	Mathematics
	Teaching Dates and Time	Quarter	1

	DAY 1	DAY 2	DAY 3	DAY 4
<b>I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES</b>				
<i>A. Content Standards</i>	The learners demonstrate knowledge and understanding of rational numbers			
<i>B. Performance Standards</i>	By the end of the quarter, the learners will be able to describe, order, and perform operations on rational numbers.			
<i>C. Learning Competencies</i>	The learners 1. describe given rational numbers as fractions, decimals, or percentages; and 2. order rational numbers on a number line.			
<i>D. Learning Objectives</i>	At the end of the lesson, the learners will be able to:  1. Describe rational numbers as: a. Fractions b. Decimals c. Percentages 2. Relate fractions with decimals, decimals with percentages, and fractions with percentages.  Assign a point in the number line of a given rational number.	At the end of the lesson, the learners will be able to:  1. describe rational numbers as fractions, decimals, or percentages. 2. convert rational numbers from percentage form to decimal form and fraction form; and 3. convert rational numbers from fraction form to decimal form and percentage form.	At the end of the lesson, the learners will be able to: convert rational numbers from decimal form to fraction form and percentage form.	At the end of the lesson, the learners will be able to:  1. arrange rational numbers in order from least to greatest or vice versa; and 2. order rational numbers on the number line.
<i>E. Instructional Design framework feature (s)</i>	Learning & Innovation Skills Media & Information Literacy			
<i>F. 21<sup>st</sup> Century Skills</i>	Ideational, Integrative Engage, Explore, Experience, Context, Collaboration, Connection Creativity, Engage, Explore, Experience, Empathize			

II. CONTENT	Rational Numbers	Rational Numbers	Rational Numbers	Rational Numbers								
<b>III. LEARNING RESOURCES</b>												
A. References												
B. Other Learning Resources												
<b>IV. TEACHING AND LEARNING PROCEDURES</b>												
<b>Before/Pre-Lesson Proper</b>												
<p><i>Activating Prior Knowledge</i></p>	<p>In Grade 6 Quarter 2, students have already learned percentages and their relationship with fractions and decimals. This implies that students must have the foundational knowledge of these concepts. Thus first, we want to make sure that their understanding of these concepts still holds.</p> <p>To do so, the teacher may present illustrations as examples of fractions, decimals, and percentages, and ask students to describe their meanings.</p> <p><b>Activity 1: Describe Me</b> Ask the students to describe the following as a fraction or as a decimal or as a percentage.</p>  <p>Note: The teacher may use a table as shown below</p>	<p>Make a brief discussion about percentages, and their relationships with fractions and decimals by answering</p> <p><b>Activity 1:</b> Model Representations</p> <p>1. Represent 73 out of 100 in three (3) ways</p>  <table border="1"> <tr> <td colspan="2">Represent 73 out of 100 as a:</td> </tr> <tr> <td>Percentage</td> <td></td> </tr> <tr> <td>Fraction</td> <td></td> </tr> <tr> <td>Decimal</td> <td></td> </tr> </table> <p>Notes to Teacher: Emphasize that percentage is a ratio and ratio can be written as a fraction, and a fraction can be written as a decimal.</p>	Represent 73 out of 100 as a:		Percentage		Fraction		Decimal		<p>To determine learners' prior knowledge about the lesson they will answer</p> <p><b>Activity 1:</b> Describe the output and able to answer the following questions:</p> <ol style="list-style-type: none"> <li>How did you determine the fraction form of each decimal?</li> <li>What steps did you follow to convert the decimal to a percentage?</li> <li>Why are these numbers considered rational?</li> </ol>	<p>To determine learners' prior knowledge about the lesson they will answer</p> <p><b>Activity 1:</b> Describe the output and able to answer the following questions:</p> <ol style="list-style-type: none"> <li>How can you convert a percentage to a decimal or a fraction to find a number within the range?</li> <li>What strategies can you use to ensure your answer is correct and fits within the given range?</li> <li>Why is it important to understand the relationships between percentages, fractions, and decimals when completing this activity?</li> </ol>
Represent 73 out of 100 as a:												
Percentage												
Fraction												
Decimal												

	<table border="1"> <thead> <tr> <th>Item</th> <th>Fraction</th> <th>Decimal</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>From here, you can gauge students' prior knowledge on the concepts needed for this lesson. The teacher may proceed to the next part of the lesson if the students demonstrate sufficient understanding of these concepts. Otherwise, the teacher must further explain these concepts.</p>	Item	Fraction	Decimal	Percentage	1				2				3				<p>Since rational numbers are expressed as a ratio of two numbers then, it can be expressed or converted as fractions, decimals, and percentages.</p>		
Item	Fraction	Decimal	Percentage																	
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<p><i>Lesson Purpose/Intention</i></p>	<p>The teacher will provide an overview of the expected outcomes of this lesson. Learners will be informed that the purpose of this lesson is to deepen students' understanding of fractions, decimals, and percentages, and their interrelationships. By mastering these concepts, students will be able to describe rational numbers not only in terms of their values but also by comprehending their meanings and applications.</p>	<p>The teacher will provide an overview of the expected outcomes of this lesson. Learners will be informed that the focus of this day's lesson will be on rational numbers such as fractions, decimals, or percentages and on how to make conversions among them.</p>	<p>The teacher will present the objectives of the lesson.</p>	<p>Learning is a two-way process that involves active participation from both the teacher and the learners. To foster greater involvement and engagement from the learners, it is essential to clearly communicate the lesson objectives.</p> <p>The teacher will present the objectives of the lesson.</p>																
<p><i>Lesson Language Practice</i></p>	<p>To facilitate language development, a vocabulary drill will be conducted and to</p>	<p>To facilitate language development, the teacher will ask learners about their prior</p>	<p>The teacher will present <b>Activity 2: Define in your own words.</b></p>	<p>To facilitate language practice, the learners will answer <b>Activity 2</b> in</p>																

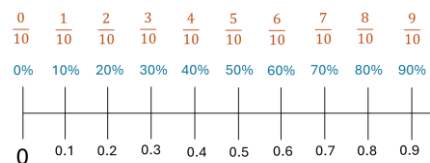
	<p>make the drill more interesting, you may present it through a puzzle /game.</p> <p>The following keywords/terms to emphasize on the vocabulary drill found on <b>Activity 2.</b></p> <p>Fractions</p> <ul style="list-style-type: none"> <li>• Numerator</li> <li>• Denominator</li> <li>• Whole number</li> </ul> <p>Decimals</p> <ul style="list-style-type: none"> <li>• Decimal Point</li> <li>• Fractional Part</li> </ul> <p>Percentages</p> <ul style="list-style-type: none"> <li>• Percent symbol (%)</li> </ul> <p>After the activity, you need to emphasize that the learners will realize the relevance of these words to the lesson throughout the discussion.</p>	<p>knowledge of the following keywords/ terms related to the days' topic through a Math Word Puzzle</p> <p><b>Activity 2.</b></p> <table border="1"> <tr><td>N</td><td>U</td><td>M</td><td>E</td><td>R</td><td>A</td><td>T</td><td>O</td><td>R</td><td>E</td><td>O</td><td>S</td></tr> <tr><td>A</td><td>O</td><td>B</td><td>L</td><td>N</td><td>W</td><td>C</td><td>X</td><td>E</td><td>P</td><td>T</td><td>H</td></tr> <tr><td>J</td><td>W</td><td>I</td><td>J</td><td>E</td><td>D</td><td>O</td><td>E</td><td>B</td><td>E</td><td>Y</td><td>O</td></tr> <tr><td>C</td><td>P</td><td>C</td><td>T</td><td>C</td><td>I</td><td>N</td><td>S</td><td>M</td><td>R</td><td>M</td><td>L</td></tr> <tr><td>G</td><td>Z</td><td>O</td><td>P</td><td>C</td><td>B</td><td>V</td><td>G</td><td>U</td><td>C</td><td>L</td><td>A</td></tr> <tr><td>V</td><td>K</td><td>N</td><td>U</td><td>X</td><td>A</td><td>E</td><td>F</td><td>N</td><td>E</td><td>K</td><td>M</td></tr> <tr><td>F</td><td>X</td><td>V</td><td>D</td><td>Y</td><td>L</td><td>R</td><td>H</td><td>M</td><td>N</td><td>N</td><td>I</td></tr> <tr><td>M</td><td>A</td><td>E</td><td>C</td><td>V</td><td>N</td><td>S</td><td>F</td><td>J</td><td>T</td><td>O</td><td>C</td></tr> <tr><td>U</td><td>Q</td><td>R</td><td>R</td><td>A</td><td>T</td><td>I</td><td>O</td><td>N</td><td>A</td><td>L</td><td>E</td></tr> <tr><td>R</td><td>E</td><td>T</td><td>B</td><td>R</td><td>S</td><td>O</td><td>I</td><td>K</td><td>G</td><td>P</td><td>D</td></tr> <tr><td>Z</td><td>C</td><td>A</td><td>Q</td><td>C</td><td>D</td><td>N</td><td>E</td><td>E</td><td>E</td><td>W</td><td>Y</td></tr> <tr><td>R</td><td>O</td><td>T</td><td>A</td><td>N</td><td>I</td><td>M</td><td>O</td><td>N</td><td>E</td><td>D</td><td>L</td></tr> </table> <p>After this activity, it is important to emphasize that the learners will realize the relevance of this activity to the lesson.</p>	N	U	M	E	R	A	T	O	R	E	O	S	A	O	B	L	N	W	C	X	E	P	T	H	J	W	I	J	E	D	O	E	B	E	Y	O	C	P	C	T	C	I	N	S	M	R	M	L	G	Z	O	P	C	B	V	G	U	C	L	A	V	K	N	U	X	A	E	F	N	E	K	M	F	X	V	D	Y	L	R	H	M	N	N	I	M	A	E	C	V	N	S	F	J	T	O	C	U	Q	R	R	A	T	I	O	N	A	L	E	R	E	T	B	R	S	O	I	K	G	P	D	Z	C	A	Q	C	D	N	E	E	E	W	Y	R	O	T	A	N	I	M	O	N	E	D	L	<p>The learners will give the meaning of following words and cite some examples.</p> <p>Rational numbers Whole numbers Numerator Percentage Decimals Number line Fraction Denominator</p> <p>After this activity, it is important to emphasize that the learners will realize the relevance of this activity to the lesson.</p>	<p>pairs to refamiliarize learners to the keywords or terms related to the day's topic</p>
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**During/Lesson Proper**

<p><i>Reading the Key Idea/ Stem</i></p>	<p>The teacher will discuss the key concepts and ideas for learners to know and understand the targets of the lesson.</p> <p>At this point, you may describe fractions, decimals, and percentages as rational numbers.</p>	<p>The teacher will give a prompt to learners involving a simple conversion of percentage to fraction and decimal.</p> <p>Learners may accomplish this</p> <p><b>Activity 3: Express differently</b> with a partner.</p>	<p>The lesson will start by developing the key ideas. This part will be done by giving an example on how to order rational numbers on a number line.</p>	<p>The teacher will discuss the key concepts and ideas for learners to know and understand the targets of the lesson.</p> <p>By engaging in the "Pencil Expedition" activity, students will gain a practical</p>
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Key Idea: Rational numbers are the results we obtain when we divide two numbers (of course except when divided by 0). These results can be represented in different forms, namely, in fractions, in decimals, or in percentage.

Use a visual aid to represent this idea using a number line. An example is shown below



Note to Teacher:  
Feel free to use various types of visual aids, such as number lines and charts, to help students better understand the concept of rational numbers represented as fractions, decimals, and percentages.

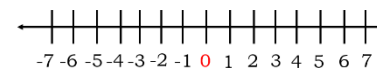
Using the **number line** and visual aids, the teacher will ask the following questions:

1. How can we represent a rational number as a fraction, a decimal, and a percentage?
2. Describe how a single



Make sure that learners are able to grasp percentages, and its relationships with fractions and decimals. Thus, conversion may be done among percentages, and words to the lesson throughout the discussion.

### Activity 3: Think Pair Share!



1. Arrange the following fractions in order, from the least to greatest.  $\frac{3}{4}$ ,  $\frac{5}{6}$ ,  $\frac{4}{5}$ ,  $\frac{1}{3}$ ,  $\frac{2}{3}$
2. Convert 0.6 to fraction and percent.
3. Change 22% to decimal and fraction.
4. During a sale, some items are advertised at a 25% discount. A dress usually costs Php1,500. How much is the discounted price?

From the learners' responses, you may discuss further concepts regarding rational numbers, including their definition, how to convert between forms, and how to identify equivalent values in fractions, decimals, and percentages forms.

understanding of comparing and ordering fractions and decimals, key concepts in the lesson. By analyzing the lengths of the explorers' pencils, converting fractions to decimals, and arranging the measurements in ascending and descending order, students will develop a solid grasp of these mathematical principles. They can refer to **Activity 3: Covert and Arrange** to reinforce their understanding and apply it to other scenarios, demonstrating how measurement skills are essential in various real-world contexts.

	<p>rational number can be shown in these three forms.</p> <ul style="list-style-type: none"> <li>• Can you identify examples of numbers that can be represented as fractions, decimals, and percentages?</li> </ul> <p>3. Identify how these forms are related to each other.</p> <p>4. Can you provide examples of rational numbers in each form?</p> <p>5. How do we convert fractions, decimals, and percentages?</p> <p>From the learners' responses, you may discuss further concepts regarding rational numbers, including their definition, how to convert between forms, and how to identify equivalent values in fractions, decimals, and percentages forms.</p>			
<p><i>Developing Understanding of the Key Idea/ Stem</i></p>	<p>To develop learners' understanding of key ideas, the teacher will provide <b>Activities 3 and 4</b>, which focus on describing rational numbers using a number line. In this task, students must determine the location of given values on the number line. The teacher will guide students through these worksheets, ensuring they</p>	<p>For concept development, learners will work collaboratively and will answer problems in the worksheet involving converting among percentages, fractions, and decimals by accomplishing <b>Activity 4</b>. After accomplishing the activities, the teacher should make sure</p>	<p>To practice the concepts presented in the previous activity the learners will look for a partner to answer exercises found in</p> <p><b>Activity 4:</b></p> <p><b>Directions:</b> Answer the following problems.</p>	<p>To improve the concepts that are grasped by the learners in the stem they will do exercises found in the Worksheet. <b>Activity 4</b></p>



	<p>understand how to accurately plot and label each point.</p> <p>For assessing learners' understanding of the lesson and providing immediate feedback, the teacher may ask the following questions:</p> <ol style="list-style-type: none"> <li>1. Can you explain how you determined the position of a given fraction on the number line?</li> <li>2. How do you convert a fraction to a decimal and then locate it on the number line?</li> <li>3. How can you represent a percentage as a point on the number line?</li> <li>4. Can you identify a point on the number line and provide its equivalent fraction, decimal, and percentage?</li> <li>5. What challenges did you encounter while plotting these values, and how did you overcome them?</li> <li>6. Why is it useful to represent rational numbers in different forms?</li> </ol> <p>After discussing these questions, the teacher can clarify any misunderstandings and reinforce key concepts.</p>	<p>learners are able to master the following conversion techniques.</p> <p>To Convert a Percent</p> <ul style="list-style-type: none"> <li>• To a decimal: Move the decimal point two (2) places to the left and omit the % symbol. To a fraction: Omit the % symbol and express the number “over” 100.</li> <li>• Express to lowest term, if possible</li> </ul> <p>To Convert a Fraction</p> <ul style="list-style-type: none"> <li>• To a decimal: Simply divide the numerator by the denominator.</li> <li>• To a percent: Express the fraction into its equivalent decimal, then move the decimal point two (2) places to the right and add the % symbol.</li> </ul> <p>To Convert a Decimal</p> <ul style="list-style-type: none"> <li>• To a fraction: Read the decimal and reduce the resulting fraction.</li> </ul> <p>To a percent: Move the decimal point two (2) places to the right and add the % sign.</p>	<ol style="list-style-type: none"> <li>1. In a Grade 7 class with 40 students, <math>\frac{3}{4}</math> are girls. How many girls are there? How many percent is <math>\frac{3}{4}</math>?</li> <li>2. In a survey, 9 out of 10 people said that they love singing than dancing. Write this in decimal form.</li> <li>3. In a class, 75% of them remembered to bring coloring materials for their art class. What percentage of students forgot to bring their coloring materials?</li> </ol>	
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	By engaging students in this way, the teacher ensures they not only complete the task but also grasp the underlying principles of rational numbers, their representations, and their relationships on the number line. This interactive approach helps solidify their understanding and prepares them for more complex mathematical concepts.			
<i>Deepening Understanding of the Key Idea/Stem</i>	To deepen learners' understanding, teachers will now demonstrate values that are greater than 1 in <b>Activity 4</b> .	To enhance learners' understanding of the concepts, learners will answer independently the questions found in the worksheet, <b>Activity 5</b> .	To deepen learners' understanding of the concept, learners will work individually on <b>Activity 5</b> .	Learners will work independently to <b>Activity 5</b> provided to test their progress.
<b>After/Post-Lesson Proper</b>				
<i>Making Generalizations and Abstractions</i>	As a concluding part of the lesson, ask the students to summarize what they have learned about the relationship between fractions, decimals, and percentages. This may be done as a recitation so that students may share their insights with the class.  Formally, ask the students to summarize the method of assigning a point in the number line given a rational number and how fractions,	As a concluding part of the lesson, the learners will answer the following questions. 1. State the process in converting percentages to decimals and fractions. 2. Determine the techniques in converting among fractions, decimals and percentages. 3. Why is it important to reduce fractions to their lowest terms?	To conclude the discussion, students will address metacognition questions located within the Worksheet	To bring the discussion to a close, students will engage with metacognition questions situated in the Worksheet.

	decimals, and percentages are related to each other.			
<i>Evaluating Learning</i>	To determine the learning outcomes, learners will answer <b>Activity 5</b> of the provided Worksheet.	To determine the learning outcomes, learners will answer <b>Activity 6</b> of the provided Worksheet.	To assess their understanding, students will answer <b>Activity 6</b> .	To ascertain the achieved learning outcomes, students will complete the assessment section within the Worksheet. <b>Activity 6 &amp; 7</b>
<i>Additional Activities for Application or Remediation (if applicable)</i>	For additional activity for the learners, the teacher may give other activity for intervention.	For the learners who will not be able to reach 75% of the assessment, <b>Activity 7</b> is provided for intervention	For those learners who do not attain a score of 75% on the assessment, extra exercises are available on the Worksheet as further practice.	In case learners do not achieve a score of 75% on the assessment, an additional exercise is made available on the Worksheet to offer further practice and support.
<i>Remarks</i>				
<i>Reflection</i>				