SUBJECT: MATHEMATICS   **UNIT**: 2   **COURSE**: SIXTH GRADE

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RATIONAL NUMBERS, ALGEBRAIC EXPRESSIONS, RATIOS, PROPORTIONS AND CIRCUMFERENCES.

THROUGHLINES:

1. What is the difference between addition and subtraction of whole, integer and a rational number?
2. How can you multiply and divide rational numbers fluently?
3. What is an equation and algebraic expression?
4. Where can you find ratios and proportions in a real-world context?
5. How can you find the circumference of the circles?

GENERATIVE TOPIC

RATIONAL ME!

UNDERSTANDING GOALS:

The student will understand addition and subtraction of rational numbers by using their different representations as fractions and decimals.	The student will learn how to multiply and divide rational numbers by using a visual representation.	The student will understand how to write and evaluate equations and algebraic expressions by using the concept of a variable.	The student will learn to identify ratios and proportions and how to write them by representing real-world context situations.	The student will understand how to discover the circumference of a circle by using some formulas.

	UNDERSTANDING PERFORMANCES	TIME	ASSESSMENT	
	ACTIONS		**WAYS**	**CRITERIA**
Exploration Stage	• To watch a video introducing rational numbers and their application in real life. • To model fractions, integers and rational numbers. • To model additions, subtractions, multiplications and divisions of rational numbers. • To measure the circumference of circular objects. • To model algebraic expressions and equations using area models. • To make thing's models (cars, buildings, monuments, etc) using one half and one third as ratios and proportions.	1 weeks	− Analysing possible difficulties that can appear on the activities. − Using appropriately hundreds of charts with different colour in individual workshop for the decimal numbers. − Giving arguments that generalize the arguments of the operations. − Representing the basic operations with the hundreds chart. − Finding the relationship between circumference and diameter.	− Properly argue problem solving. − Proposing problematic situations with specific topics.
Guided Stage	• To solve additive operations with rational numbers. • To solve multiplicative with rational numbers. • To identify rational numbers. • To transform fractions into the equivalent decimal ones. • To solve problems where the multiplicative operations of rational number can be applied. • To determine the kind of proportionality between two variables.	6 weeks	− Participating in guided exercises solved in class. − Participating in group and individual workshop. − To express and give examples of differences between whole, integers and rational numbers. − Giving solution to writing tests and assessments. − Solving activities from the book "GO MATH LEVEL 7" − Solving extra activities (Workshop, quizzes, readings, videos, etc) from Holt McDougal Platform (GO MATH LEVEL 7). Taken from: https://www.youtube.com/watch?v=SQ4cB9yXkHM ***Synthesis project*** **Stage 1:** Teacher will socialize to students. The project's objectives to develop along the term. **Stage 2:** Students are going to find out information about the components of their bodies as Hydrogen (62.9%), oxygen (almost 24%), carbon (nearly 12%), nitrogen (nearly 0.6%), calcium (0.24%) and phosphorus (0.14%). **Stage 3:** Students will make a table to record the elements found and write them in their fractional and decimal representation.	− Using the appropriate materials for the activities. − Proposing and solving problems with specific process. − Drawing accurate Representations by using appropriate measures and materials.

Learning Evidence	RATIONAL ME! To make a table showing the components of their bodies, specifying their writing in fraction and decimal.	**1 weeks**	**Stage 4:** Students will show and socialize the outcome of their chart to their classmates and teachers.	– Synthesizing the main topics as a – product. – Discusses the result of the exercises.