

Math 7 Rational Numbers

Unit Overview: *Students develop an understanding of number, recognizing fractions, decimals (that have finite or a repeating decimal representation) and percents as different representations of rational numbers. Students extend addition, subtraction, multiplication and division to all rational numbers, maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division. By applying these properties and viewing negative numbers in terms of everyday (e.g., amounts owed or temperatures below zero), students explain and interpret the rules for adding, subtracting, multiplying and dividing with negative numbers. They use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems.*

Notes – Part A

Prep for 7.NS.	The Subsets of the Real Numbers
Prep for 7.NS.	Defining and identifying rational numbers
Prep for 7.NS.A.1	Locating rational numbers on a number line
Prep for 7.NS.A.1	Graphing rational numbers on a number line
Prep for 7.NS.A.1	Comparing rational numbers
Prep for 7.NS.A.1	Ordering rational numbers
7.NS.A.1a	Opposites – Describe situations in which opposites combine to make 0.
7.NS.A.1b	Additive Inverses
Prep for 7.NS.A.1c	Absolute value with rational numbers
7.NS.A.1c	Distance between rational numbers on a number line
Prep for 7.NS.A.	Review of Divisibility Rules
Prep for 7.NS.A.	Review of Prime and Composites
Prep for 7.NS.A.	Finding Common Denominators

Notes – Part B

7.NS.A.1	Apply and extend understanding of addition and subtraction to addition and subtraction of rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
7.NS.A.1c	Subtraction is adding the opposite
7.NS.A.1d	Apply properties of operations to add and subtract rational numbers
7.NS.A.2	Multiply and divide rational numbers
7.NS.A.2a	Apply properties of operations, particularly the

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	distributive property leading to products such as $(-1)(-1) = 1$.
7.NS.A.2b	Understand that division by zero is undefined. Know that every quotient of integers (with non-zero divisor) is a rational number. Know if p and q are integers then $-\left(\frac{p}{q}\right) = \frac{(-p)}{q} = \frac{p}{(-q)}$.
7.NS.A.2c	Properties of operations to multiply and divide rational numbers
7.NS.A.2d	Convert a rational number to a decimal; know that it terminates or repeats
7.NS.A.3	Solve real-world and mathematical problems involving the 4 operations with rational numbers
7.EE.A.1	Apply properties of operations as strategies to add, subtract, factor and expand linear expressions with rational coefficients
7.EE.A.2	Rewriting an expression in different forms
7.EE.B.3	Solve real-world and mathematical problems posed with rational numbers in any form