

## Grade 7 Math Guaranteed/Viable Curriculum

Number	Standard	Proficiency Timeline
7.4	<p>Apply and extend knowledge of operations of whole numbers, fractions, and decimals to add, subtract, multiply, and divide rational numbers including integers, signed fractions, and decimals.</p> <ol style="list-style-type: none"> <li>a. Identify and explain situations where the sum of opposite quantities is 0 and opposite quantities are defined as additive inverses.</li> <li>b. Interpret the sum of two or more rational numbers, by using a number line and in real-world contexts.</li> <li>c. Explain subtraction of rational numbers as addition of additive inverses.</li> <li>d. Use a number line to demonstrate that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</li> <li>e. Extend strategies of multiplication to rational numbers to develop rules for multiplying signed numbers, showing that the properties of the operations are preserved.</li> <li>f. Divide integers and explain that division by zero is undefined. Interpret the quotient of integers (with a nonzero divisor) as a rational number.</li> <li>g. Convert a rational number to a decimal using long division, explaining that the decimal form of a rational number terminates or eventually repeats.</li> </ol>	1st
7.6	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	1st
7.9	<p>Use variables to represent quantities in real-world or mathematical problems and construct algebraic expressions, equations, and inequalities to solve problems by reasoning about the quantities.</p> <ol style="list-style-type: none"> <li>a. Solve word problems leading to equations of the form <math>px + q = r</math> and <math>p(x + q) = r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.</li> <li>b. Solve word problems leading to inequalities of the form <math>px + q &gt; r</math> or <math>px + q &lt; r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are sp</li> </ol>	1st
7.3	Solve multi-step percent problems in context using proportional reasoning, including simple interest, tax, gratuities, commissions, fees, markups and markdowns, percent increase, and percent decrease.	2nd
7.1	Calculate unit rates of length, area, and other quantities measured in like or different units that include ratios or fractions.	2nd
7.2	Represent a relationship between two quantities and determine whether the two quantities are related proportionally.	2nd
7.13	Use a number from 0 to 1 to represent the probability of a chance event occurring, explaining that larger numbers indicate greater likelihood of the event occurring, while a number near zero indicates an unlikely event.	3rd
7.20	<p>Explain the relationships among circumference, diameter, area, and radius of a circle to demonstrate understanding of formulas for the area and circumference of a circle.</p> <ol style="list-style-type: none"> <li>a. Informally derive the formula for the area of a circle.</li> <li>b. Solve area and circumference problems in real-world and mathematical situations involving circles.</li> </ol>	3rd
7.21	Use facts about supplementary, complementary, vertical, and adjacent angles in multi-step problems to write and solve simple equations for an unknown angle in a figure.	4th

# Grade 7 Math Guaranteed/Viable Curriculum