

7th Grade Math Essential Standards

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| 7.RP.A.2b | Recognize and represent proportional relationships between quantities. - Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. |
| 7.RP.A.2c | Recognize and represent proportional relationships between quantities. - Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p , the relationship between the total cost and the number of items can be expressed as $t = pn$. |
| 7.RP.A.2d | Recognize and represent proportional relationships between quantities. - Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate. |
| 7.RP.A.3 | Use proportional relationships to solve multi-step ratio and percent problems (e.g., simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error). |
| 7.NS.A.1b | Add and subtract integers and other rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. - Understand $p + q$ as the number located a distance $ q $ from p , in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world context. |
| 7.NS.A.1c | Add and subtract integers and other rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. - Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show 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 context. |
| 7.NS.A.2b | Multiply and divide integers and other rational numbers - Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world context. |
| 7.NS.A.2c | Multiply and divide integers and other rational numbers - Apply properties of operations as strategies to multiply and divide rational numbers. |
| 7.NS.A.2d | Multiply and divide integers and other rational numbers - Convert a rational number to decimal form using long division; know that the decimal form of a rational number terminates in 0's or eventually repeats. |
| 7.NS.A.3 | Solve mathematical problems and problems in real-world context involving the four operations with rational numbers. Computations with rational numbers extend the rules for manipulating fractions to complex fractions where $a/b \div c/d$ when $a, b, c,$ and d are all integers and $b, c,$ and $d \neq 0$. |
| 7.EE.B.4a | Use variables to represent quantities in mathematical problems and problems in real-world context, and construct simple equations and inequalities to solve problems. - Solve word problems leading to equations of the form $px+q = r$ and $p(x+q) = r$, where $p, q,$ and r 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. |
| 7.EE.B.4b | Use variables to represent quantities in mathematical problems and problems in real-world context, and construct simple equations and inequalities to solve problems. - Solve word problems leading to inequalities of the form $px+q > r$ or $px+q < r$, where $p, q,$ and r are rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. |