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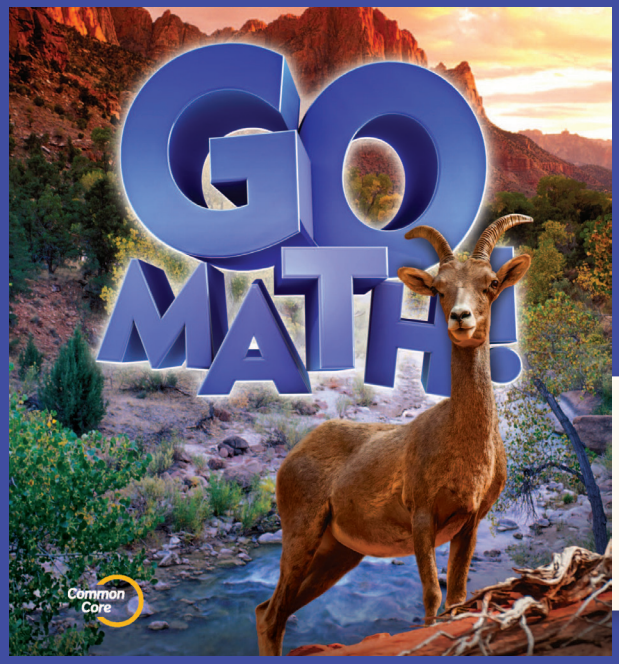

Correlation to the Common Core State Standards for Mathematics Grade 6

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Common Core State Standards for Mathematics
Grade 6

Standards	Descriptor	Citations
Standards for Mathematical Practice		
SMP.1	Make sense of problems and persevere in solving them.	This standard is addressed throughout the text, some representative examples are: SE: 8, 29, 97, 104, 139, 160, 281, 304, 318, 329, 365, 391, 424, 427, 480, 514, 542, 545, 605, 618, 652, 684, 716, 722 TE: 8, 29, 97, 104, 139, 160, 281, 304, 318, 329, 365, 391, 424, 427, 480, 514, 542, 545, 605, 618, 652, 684, 716, 722
SMP.2	Reason abstractly and quantitatively.	This standard is addressed throughout the text, some representative examples are: SE: 26, 38, 110, 121, 158, 226, 251, 252, 357, 359, 366, 410, 439, 454, 477, 514, 571, 586, 604, 610, 626, 658, 688, 728 TE: 26, 38, 110, 121, 158, 226, 251, 252, 357, 359, 366, 410, 439, 454, 477, 514, 571, 586, 604, 610, 626, 658, 688, 728
SMP.3	Construct viable arguments and critique the reasoning of others.	This standard is addressed throughout the text, some representative examples are: SE: 14, 44, 104, 154, 160, 278, 318, 322, 376, 402, 404, 430, 491, 514, 534, 536, 559, 600, 650, 689, 690, 725 TE: 14, 44, 104, 154, 160, 278, 318, 322, 376, 402, 404, 430, 491, 514, 534, 536, 559, 600, 650, 689, 690, 725

Standards	Descriptor	Citations
SMP.4	Model with mathematics.	This standard is addressed throughout the text, some representative examples are: SE: 17, 96, 98, 116, 141, 211, 252, 272, 323, 369, 378, 404, 430, 445, 478, 480, 540, 542, 599, 600, 650, 655, 709, 722 TE: 17, 96, 98, 116, 141, 211, 252, 272, 323, 369, 378, 404, 430, 445, 478, 480, 540, 542, 599, 600, 650, 655, 709, 722
SMP.5	Use appropriate tools strategically.	This standard is addressed throughout the text, some representative examples are: SE: 95, 113, 211, 269, 433, 445, 539, 551, 623, 675, 719 TE: 95, 113, 211, 269, 433, 445, 539, 551, 623, 675, 719
SMP.6	Attend to precision.	This standard is addressed throughout the text, some representative examples are: SE: 12, 49, 104, 157, 192, 256, 276, 358, 384, 410, 435, 454, 474, 480, 534, 584, 604, 616, 658, 684, 714 TE: 12, 49, 104, 157, 192, 256, 276, 358, 384, 410, 435, 454, 474, 480, 534, 584, 604, 616, 658, 684, 714
SMP.7	Look for and make use of structure.	This standard is addressed throughout the text, some representative examples are: SE: 11, 18, 269, 401, 407, 503, 517, 539, 551, 707 TE: 11, 18, 269, 401, 407, 503, 517, 539, 551, 707
SMP.8	Look for and express regularity in repeated reasoning.	This standard is addressed throughout the text, some representative examples are: SE: 11, 18, 107, 114, 218, 278, 316, 366, 383, 391, 448, 472, 479, 514, 534, 560, 610, 630, 649, 668, 720, 728 TE: 11, 18, 107, 114, 218, 278, 316, 366, 383, 391, 448, 472, 479, 514, 534, 560, 610, 630, 649, 668, 720, 728

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Standards	Descriptor	Citations
Standards for Mathematical Content		
6.RP	**Ratios and Proportional Relationships**	
Understand ratio concepts and use ratio reasoning to solve problems		
6.RP.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities	SE: 211–214, 217–220, 223–226, 229–232, 235–238, 243–246, 249–252, 255–258 TE: 211A–211B, 211–214, 217A–217B, 217–220, 223A–223B, 223–226, 229A–229B, 229–232, 235A–235B, 235–238, 243A–243B, 243–246, 249A–249B, 249–252, 255A–255B, 255–258
6.RP.2	Understand the concept of a unit rate a/b associated with a ratio a:b with $b \neq 0$, and use rate language in the context of a ratio relationship	SE: 217–220, 243–246, 249–252, 255–258, 341–344 TE: 217A–217B, 217–220, 243A–243B, 243–246, 249A–249B, 249–252, 255A–255B, 255–258, 341A–341B, 341–344
6.RP.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.	
6.RP.3a	Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios	SE: 223–226, 229–232, 235–238, 255–258 TE: 223A–223B, 223–226, 229A–229B, 229–232, 235A–235B, 235–238, 255A–255B, 255–258
6.RP.3b	Solve unit rate problems including those involving unit pricing and constant speed.	SE: 249–252 SE: 249A–249B, 249–252
6.RP.3c	Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the. quantity); solve problems involving finding the whole, given a part and the percent.	SE: 269–272, 275–278, 281–284, 289–292, 295–298, 301–304 TE: 269A–269B, 269–272, 275A–275B, 275–278, 281A–281B, 281–284, 289A–289B, 289–292, 295A–295B, 295–298, 301A–301B, 301–304
6.RP.3d	Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	SE: 315–318, 321–324, 327–330, 335–338, 341–344 SE: 315A–315B, 315–318, 321A–321B, 321–324, 327A–327B, 327–330, 335A–335B, 335–338, 341A–341B, 341–344

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Standards	Descriptor	Citations
6.NS	**The Number System**	
Apply and extend previous understandings of multiplication and division to divide fractions by fractions		
6.NS.1	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.	SE: 95–98, 101–104, 107–110, 113–116, 119–122, 125–128 TE: 95A–95B, 95–98, 101A–101B, 101–104, 107A–107B, 107–110, 113A–113B, 113–116, 119A–119B, 119–122, 125A–125B, 125–128
Compute fluently with multi-digit numbers and find common factors and multiples.		
6.NS.2	Fluently divide multi-digit numbers using the standard algorithm.	SE: 5–8, 49–52, 55–58, 70–72 TE: 5A–5B, 5–8, 49A–49B, 49–52, 55A–55B, 55–58, 70A–70B, 70–72
6.NS.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	SE: 37–40, 43–46, 49–52, 55–58, 441–442, 566, 568, 683 TE: 37A–37B, 37–40, 43A–43B, 43–46, 49A–49B, 49–52, 55A–55B, 55–58, 441–442, 566, 568, 683
6.NS.4	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor.	SE: 11–14, 17–20, 23–26, 29–32, 81–84 TE: 11A–11B, 11–14, 17A–17B, 17–20, 23A–23B, 23–26, 29A–29B, 29–32, 81A–81B, 81–84

Standards	Descriptor	Citations
Apply and extend previous understandings of numbers to the system of rational numbers.		
6.NS.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	SE 139–142 TE: 139A–139B, 139–142
6.NS.6	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.	
6.NS.6a	Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite.	SE: 139–142, 151–154 TE: 139A–139B, 139–142, 151–154
6.NS.6b	Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.	SE: 183–186 TE: 183A–183B, 183–186
6.NS.6c	Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane	SE: 69–72, 151–154, 177–180 TE: 69A–69B, 69–72, 151A–151B, 151–154, 177A–177B, 177–180

Standards	Descriptor	Citations
6.NS.7	Understand ordering and absolute value of rational numbers.	
6.NS.7a	Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram	SE: 145–148, 157–160 TE: 145A–145B, 145–148, 157A–157B, 157–160
6.NS.7b	Write, interpret, and explain statements of order for rational numbers in real-world contexts	SE: 145–148, 157–160 TE: 145A–145B, 145–148, 157A–157B, 157–160
6.NS.7c	Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation	SE: 165–168 TE: 165A–165B, 165–168
6.NS.7d	Distinguish comparisons of absolute value from statements about order	SE: 171–174 TE: 171A–171B, 171–174
6.NS.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate	SE: 189–192, 195–198, 583–585 TE: 189A–189B, 189–192, 195A–195B, 195–198, 583A–583B, 583–585

Standards	Descriptor	Citations
6.EE	**Expressions and Equations**	
Apply and extend previous understandings of arithmetic to algebraic expressions.		
6.EE.1	Write and evaluate numerical expressions involving whole-number exponents.	SE: 357–360, 363–366 TE: 357A–357B, 357–360, 363A–363B, 363–366
6.EE.2	Write, read, and evaluate expressions in which letters stand for numbers.	
6.EE.2a	Write expressions that record operations with numbers and with letters standing for numbers.	SE: 369–372 TE: 369A–369B, 369–372
6.EE.2b	Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.	SE: 375–378 TE: 375A–375B, 375–378
6.EE.2c	Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).	SE: 381–384, 533–536, 545–548, 557–560, 565–568, 571–574, 609–612, 629–632 TE: 381A–381B, 381–384, 533A–533B, 533–536, 545A–545B, 545–548, 557A–557B, 557–560, 565A–565B, 565–568, 571A–571B, 571–574, 609A–609B, 609–612, 629A–629B, 629–632
6.EE.3	Apply the properties of operations to generate equivalent expressions	SE: 395–398, 401–404 TE: 395A–395B, 395–398, 401A–401B, 401–404
6.EE.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them)	SE: 407–410 TE: 407A–407B, 407–410

Standards	Descriptor	Citations
Reason about and solve one-variable equations and inequalities.		
6.EE.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	SE: 421–424, 465–468 TE: 421A–421B, 421–424, 465A–465B, 465–468
6.EE.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	SE: 389–392 TE: 389A–389B, 389–392
6.EE.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.	SE: 427–430, 433–436, 439–442, 445–448, 451–454, 457–460, 533–536 TE: 427A–427B, 427–430, 433A–433B, 433–436, 439A–439B, 439–442, 445A–445B, 445–448, 451A–451B, 451–454, 457A–457B, 457–460, 533A–533B, 533–536
6.EE.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams	SE: 471–474, 477–480 TE: 471A–471B, 471–474, 477A–477B, 477–480
Represent and analyze quantitative relationships between dependent and independent variables.		
6.EE.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.	SE: 491–494, 497–500, 503–506, 511–514, 517–520 TE: 491A–491B, 491–494, 497A–497B, 497–500, 503A–503B, 503–506, 511A–511B, 511–514, 517A–517B, 517–520

Standards	Descriptor	Citations
6.G	**Geometry**	
Solve real-world and mathematical problems involving area, surface area, and volume.		
6.G.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	SE: 533–536, 539–542, 545–548, 551–554, 557–560, 565–568, 571–574, 577–580, 635–638 TE: 533A–533B, 533–536, 539A–539B, 539–542, 545A–545B, 545–548, 551A–551B, 551–554, 557A–557B, 557–560, 565A–565B, 565–568, 571A–571B, 571–574, 577A–577B, 577–580, 635A–635B, 635–638
6.G.2	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	SE: 609–612, 615–618, 623–626, 629–632, 635–638 TE: 609A–609B, 609–612, 615A–615B, 615–618, 623A–623B, 623–626, 629A–629B, 629–632, 635A–635B, 635–638
6.G.3	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.	SE: 583–586 TE: 583A–583B, 583–586
6.G.4	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	SE: 597–600, 603–606, 609–612, 615–618, 635–638 TE: 597A–597B, 597–600, 603A–603B, 603–606, 609A–609B, 609–612, 615A–615B, 615–618, 635A–635B, 635–638

Standards	Descriptor	Citations
6.SP	**Statistics and Probability**	
Develop understanding of statistical variability.		
6.SP.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.	SE: 649–652, 656, 745–748 TE: 649A–649B, 649–652, 656, 745A–745B, 745–748
6.SP.2	Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	SE: 655–658, 681–684, 707–710, 725–728, 739–742, 745–748, 751–754 TE: 655A–655B, 655–658, 681A–681B, 681–684, 707A–707B, 707–710, 725A–725B, 725–728, 739A–739B, 739–742, 745A–745B, 745–748, 751A–751B, 751–754
6.SP.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	SE: 681–684, 725–728, 739–742 TE: 681A–681B, 681–684, 725A–725B, 725–728, 739A–739B, 739–742
Summarize and describe distributions		
6.SP.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	SE: 661–664, 667–670, 693–696, 713–716 TE: 661A–661B, 661–664, 667A–667B, 667–670, 693A–693B, 693–696, 713A–713B, 713–716
6.SP.5	Summarize numerical data sets in relation to their context, such as by	
6.SP.5a	Reporting the number of observations	SE: 655–660 TE: 655A–655B, 655–660
6.SP.5b	Describing the nature of the attribute under investigation, including how it was measured and its units of measurement	SE: 655–660 TE: 655A–655B, 655–660

Standards	Descriptor	Citations
6.SP.5c	Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered	SE: 675–678, 681–684, 707–710, 719–722, 725–728 SE: 675A–675B, 675–678, 681A–681B, 681–684, 707A–707B, 707–710, 719A–719B, 719–722, 725A–725B, 725–728
6.SP.5d	Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered	SE: 687–690, 733–736 TE: 687A–687B, 687–690, 733A–733B, 733–736