Common Core Math Standards
Grade 5

Common Core Standards	Converted/Unpacked Standards	
Standards Code: OA=Operations and Algebraic Thinking, NBT=Number and Operations in Base 10, MD=Measurements and Data, G=Geometry, NF=Number and Operations-Fractions, RP=Rations and Proportional Relationships, NS= Number System, EE=Expressions and Equations, SP=Statistics and Probability, A=Algebra.		
CC.5.OA.1 Write and interpret numerical expressions. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	I can write and interpret numerical expressions. (CCSS: 5.OA) Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. (CCSS: 5.OA.1)	
CC.5.OA.2 Write and interpret numerical expressions. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.	I can write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. (CCSS: 5.OA.2)	
CC.5.OA.3 Analyze patterns and relationships. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.	I can generate two numerical patterns using given rules. (CCSS: 5.OA.3) I can identify apparent relationships between corresponding terms. (CCSS: 5.OA.3) I can form ordered pairs consisting of corresponding terms from the two patterns, and graphs the ordered pairs on a coordinate plane.(CCSS: 5.OA.3) I can explain informally relationships between corresponding terms in the patterns. (CCSS: 5.OA.3)	
CC.5.NBT.1 Understand the place value system. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	I can explain that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. (CCSS: 5.NBT.1)	
CC.5.NBT.2 Understand the place value system. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole number exponents to denote powers of 10.	I can explain patterns in the number of zeros of the product when multiplying a number by powers of 10. (CCSS: 5.NBT.2) I can explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. (CCSS: 5.NBT.2) I can use whole-number exponents to denote powers of 10. (CCSS: 5.NBT.2)	
CC.5.NBT.3 Understand the place value system. Read, write, and compare decimals to thousandths.	I can read, write, and compare decimals to thousandths. (CCSS: 5.NBT.3)	

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CC.5.NBT.3a Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).	I can read and write decimals to thousandths using base-ten numerals, number names, and expanded form. (CCSS: 5.NBT.3a)	
CC.5.NBT.3b Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	I can compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. (CCSS: 5.NBT.3b)	
CC.5.NBT.4 Understand the place value system. Use place value understanding to round decimals to any place.	I can use place value understanding to round decimals to any place. (CCSS: 5.NBT.4)	
CC.5.NBT.5 Perform operations with multi-digit whole numbers and with decimals to hundredths. Fluently multiply multi-digit whole numbers using the standard algorithm.	I can multiply multi-digit whole numbers using standard algorithms. (CCSS: 5.NBT.5)	
CC.5.NBT.6 Perform operations with multi-digit whole numbers and with decimals to hundredths. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	I can find whole-number quotients of whole numbers. (CCSS: 5.NBT.6) I can use strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. (CCSS: 5.NBT.6) I can illlustrate and explain calculations by using equations, rectangular arrays, and/or area models. (CCSS: 5.NBT.6)	
CC.5.NBT.7 Perform operations with multi-digit whole numbers and with decimals to hundredths. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	I can add, subtract, multiply, and divide decimals to hundredths. (CCSS: 5.NBT.7) I can use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (CCSS: 5.NBT.7) I can relate strategies to a written method and explain the reasoning used. (CCSS: 5.NBT.7)	
CC.5.NF.1 Use equivalent fractions as a strategy to add and subtract fractions. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)	I can use equivalent fractions as a strategy to add and subtract fractions. (CCSS: 5.NF) I can add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions with like denominators. (CCSS: 5.NF.1)	
CC.5.NF.2 Use equivalent fractions as a strategy to add and subtract fractions. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7 by observing that 3/7 < 1/2.	I can use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. (CCSS: 5.NF.2) I can solve word problems involving addition and subtraction of fractions referring to the same whole. (CCSS: 5.NF.2)	

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CC.5.NF.3 Apply and extend previous understandings of multiplication and division to multiply and divide fractions. Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3 and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?	I I can interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). (CCSS: 5.NF.3) I can solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers. (CCSS: 5.NF.3)	
CC.5.NF.4 Apply and extend previous understandings of multiplication and division to multiply and divide fractions. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.		
CC.5.NF.4a Interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b. For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)	I can interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b. In general, (a/b) × (c/d) = ac/bd. (CCSS: 5.NF.4a)	
CC.5.NF.4b Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	I can find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. (CCSS: 5.NF.4b) I can multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. (CCSS: 5.NF.4b)	

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CC.5.NF.5 Apply and extend previous understandings of multiplication and division to multiply and divide fractions. Interpret multiplication as scaling (resizing) by: -- a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. -- b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b = (n×a) / (n×b) to the effect of multiplying a/b by 1.	e. I can interpret multiplication as scaling (resizing). (CCSS: 5.NF.5) I can compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.10 (CCSS: 5.NF.5a) ii.I can apply the principle of fraction equivalence a/b = (n × a)/(n × b) to the effect of multiplying a/b by 1. (CCSS: 5.NF.5b)	
CC.5.NF.6 Apply and extend previous understandings of multiplication and division to multiply and divide fractions. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	I can solve real world problems involving multiplication of fractions and mixed numbers. (CCSS: 5.NF.6)	
CC.5.NF.7 Apply and extend previous understandings of multiplication and division to multiply and divide fractions. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.)		
CC.5.NF.7a Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) ÷ 4 and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3.	I can interpret division of a unit fraction by a non-zero whole number, and compute such quotients. (CCSS: 5.NF.7a)	
CC.5.NF.7b Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 ÷ (1/5) and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.	I can interpret division of a whole number by a unit fraction, and compute such quotients. (CCSS: 5.NF.7b)	

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CC.5.NF.7c Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?	I can Interpret division of a whole number by a unit fraction, and compute such quotients. (CCSS: 5.NF.7b)	
CC.5.MD.1 Convert like measurement units within a given measurement system. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step real world problems.	I can convert like measurement units within a given measurement system. (CCSS: 5.MD) I can convert among different-sized standard measurement units within a given measurement system.2 (CCSS: 5.MD.1) I can use measurement conversions in solving multi-step, real world problems. (CCSS: 5.MD.1)	
CC.5.MD.2 Represent and interpret data. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.	I can make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). (CCSS: 5.MD.2) I can use operations on fractions for this grade to solve problems involving information presented in line plots.(CCSS: 5.MD.2)	
CC.5.MD.3 Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. Recognize volume as an attribute of solid figures and understand concepts of volume measurement. -- a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. -- b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.		
CC.5.MD.4 Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	I can measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. (CCSS: 5.MD.4)	

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CC.5.MD.5 Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.		
CC.5.MD.5a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent three-fold whole-number products as volumes, e.g., to represent the associative property of multiplication.	I can show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. (CCSS: 5.MD.5a) I can represent threefold whole-number products as volumes to represent the associative property of multiplication. (CCSS: 5.MD.5a) I can find volume of rectangular prisms using a variety of methods and use these techniques to solve real world and mathematical problems. (CCSS: 5.MD.5a)	
CC.5.MD.5b Apply the formulas V =(l)(w)(h) and V = (b)(h) for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.	I can model and justify the formula for volume of rectangular prisms. (CCSS: 5.MD.5b) I can model the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes. (CCSS: 5.MD.5b) I can apply the formulas V = l × w × h and V = b × h for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths. (CCSS: 5.MD.5b)	
CC.5.MD.5c Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	I can use the additive nature of volume to find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts. (CCSS: 5.MD.5c)	
CC.5.G.2 Graph points on the coordinate plane to solve real-world and mathematical problems. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	I can represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. (CCSS: 5.G.2)	
CC.5.G.3 Classify two-dimensional figures into categories based on their properties. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.	I can explain that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. (CCSS: 5.G.3)	
CC.5.G.4 Classify two-dimensional figures into categories based on their properties. Classify two-dimensional figures in a hierarchy based on properties.	I can classify two-dimensional figures in a hierarchy based on properties. (CCSS: 5.G.4)	

Standards for Mathematical Practice	**1. Make sense of problems and persevere in solving them.** **2. Reason abstractly and quantitatively.** **3. Construct viable arguments and critique the reasoning of others.** **4. Model with mathematics.** **5. Use appropriate tools strategically.** **6. Attend to precision.** **7. Look for and make use of structure.** **8. Look for and express regularity in repeated reasoning.**	