

Essential Standard - Standard should be taught in depth – These are the major work of the grade level

Supporting Standard- Support essential standards -Students need an intermediate understanding of these standards

Additional Standard- Students need a basic foundation of these standards

Not all content in a given grade is emphasized equally in the Standards. Some clusters require greater emphasis than others based on the depth of the ideas, the time they take to master and/or their importance to future mathematics or the demands of college and career readiness. More time in these areas is also necessary for students to meet the Standards for Mathematical Practice (SMP). To say that some things have greater emphasis is not to say that anything in the Standards can safely be neglected in instruction. Neglecting material will leave gaps in student skill and understanding and may leave students unprepared for the challenges of a later grade. <https://achievethecore.org/>

Quarter 1

Standards for Mathematical Practice

[4 and 5 Standards for Mathematical Practice Posters.pdf \(eriercd.org\)](#)

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| 1. Make sense of problems and persevere in solving them | 5. Use appropriate tools strategically |
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CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals (PA Core- NWEA)

Number Operations and Base Ten	5.NBT.A.1	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.
	5.NBT.A.2	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10.
	5.NBT.A.2	Explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10.
	5.NBT.A.2	Use whole number exponents to denote powers of 10.
	5.NBT.A.3	Read, write and compare decimals to thousandths. Read and write decimals to the thousandths using base ten numerals, number names and expanded form.
	5.NBT.A.3.B	Compare two decimals to thousandths based on meanings of the digits in each place using <,=,> symbols to record the result of the comparison.
	5.NBT.A.4	Use place value understanding to round decimals to any place.

CC.2.2.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals (PA Core- NWEA)

	5.NBT.B.5	Fluently multiply multi-digit whole numbers using the standard algorithm. *Required fluency for Grade 5*
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Number Operations in Base Ten	5.NBT.B.6	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.
CC.2.4.5.A.6 Apply concepts of volume to solve problems and relate to multiplication and division (PA Core – NWEA)		
Measurement and Data	5.MD.C.3	Recognize volume as an attribute of solid figures and understand concepts of volume measurement
	5.MD.C.3.A	A cube with side length 1 unit, called a “unit cube” is said to have “one cubic unit” of volume. Can be used to measure volume.
	5.MD.C.3.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.
	5.MD.C.4	Measure volumes by counting unit cubes, using cubic cm., cubic in., cubic ft., and improvised units.
	5.MD.C.5	Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
	5.MD.C.5.A	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 height by the area of the base. Represent threefold whole-number products as volumes, e.g. to represent the associative property of multiplication.
5.MD.C.5.B	Apply the formulas $V=L \times W \times H$ and $V=B \times H$ 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.	
5.MD.C.5.C	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.	

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CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals. (PA Core- NWEA) Add and Subtract decimals, then multiply, then divide.

Number and Operations in Base Ten	5.NBT.B.7	<p>Add and subtract (Nov.) decimals to the hundredths using concrete models or drawings and strategies based in 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.</p> <p>Multiply (Dec.) decimals to the hundredths using concrete models or drawings and strategies based in 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.</p> <p>Divide (Jan) decimals to the hundredths using concrete models or drawings and strategies based in 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.</p>
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CC.2.1.5.C.1 Use the understanding of equivalency to add and subtract fractions (PA Core – NWEA)

Number and Operations Fractions	5.NF.A.1	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.
	5.NF.A.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.
	5.NF.A.2	Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

CC.2.1.5.C.2 Apply and extend previous understanding of multiplication and division to multiply and divide fractions (PA Core – NWEA)

Number and Operations Fractions	5.NF.B.3	Interpret a fraction as division of the numerator by the denominator $a/b = a \div b$. Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.
	5.NF.B.4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
	5.NF.B.4.B	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.

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	5.NF.B.5	Interpret multiplication as scaling (resizing) by 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.
	5.NF.B.5.B	Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number; 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 $a/b = (nxa)/(nxb)$ to the effect of multiplying a/b by one.
	5.NF.B.6	Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models/equations to represent the problem.
	5.NF.B.7	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
	5.NF.B.7.B	Interpret division of a whole number by a unit fraction and compare such quotients.
	5.NF.B.7.C	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.

CC.2.4.5.A.4 Solve problems involving computation of fractions using information provided in a line plot (Core PA – NWEA)

Measurement and Data	5.MD.B.2	Make a line plot to display a data set of measurement 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.
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CC.2.2.5.A.1 – Interpret and evaluate numerical expressions using order of operations (PA Core – NWEA)

Operations and Algebraic Thinking	5.OA.A.1	Use parentheses, brackets, or braces in numerical expression, and evaluate expressions with these symbols.
	5.OA.A.2	Write simple expressions that record calculations with numbers and interpret numerical expressions without evaluating them.

CC.2.2.5.A.4 – Analyze patterns and relationships using two rules (PA Core – NWEA)

Operations and Algebraic Thinking	5.OA.B.3	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms.
	5.OA.B.3	Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.

CC.2.3.5.A.1 Graph points in the first quadrant on the coordinate plane and interpret these points when solving real world mathematical problems (PA Core- NWEA)

Geometry	5.G.A.1	Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number
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		indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
	5.G.A.2	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.
CC.2.4.5.A.1 Solve problems using conversions within a given measurement system – Length, capacity, weight, US customary measurement and Metric - (PA Core – NWEA)		
Measurement and Data	5.MD.A.1	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.
CC.2.3.5.A.2 Classify two-dimensional figures into categories based on an understanding of the properties (PA Core – NWEA)		
Geometry	5.G.B.3	Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.
	5.G.B.4	Classify two-dimensional figures in a hierarchy based on properties.