

**Massachusetts Curriculum Framework  
Correlated to  
Academic Language Notebooks  
The Language of Math  
Grade 5**

Massachusetts Framework	Module Number and Name
<b>Number Sense and Operations Strand</b>	
<i>Students engage in problem solving, communicating, reasoning, connecting, and representing as they:</i>	
<b>5.N.1</b> Demonstrate an understanding of (positive integer) powers of ten, e.g., 102, 105.	<b>1.</b> Place Value of Whole Numbers and Decimals
<b>5.N.2</b> Demonstrate an understanding of place value through millions and thousandths.	<b>1.</b> Place Value of Whole Numbers and Decimals
<b>5.N.3</b> Represent and compare large (millions) and small (thousandths) positive numbers in various forms, such as expanded notation without exponents, e.g., $9724 = 9 \times 1000 + 7 \times 100 + 2 \times 10 + 4$ .	<b>2.</b> Compare and Order Whole Numbers and Decimals
<b>5.N.4</b> Demonstrate an understanding of fractions as a ratio of whole numbers, as parts of unit wholes, as parts of a collection, and as locations on the number line.	<b>11.</b> Fraction and Mixed Number Concepts
<b>5.N.5</b> Identify and determine common equivalent fractions (with denominators 2, 4, 5, 10) and mixed numbers (with denominators 2, 4, 5, 10), decimals, and percents (through one hundred percent), e.g., $\frac{3}{4} = 0.75 = 75\%$ .	<b>12.</b> Equivalent Fractions and Simplest Form
<b>5.N.6</b> Find and position whole numbers, positive fractions, positive mixed numbers, and positive decimals on a number line.	<b>2.</b> Compare and Order Whole Numbers and Decimals
<b>5.N.7</b> Compare and order whole numbers, positive fractions, positive mixed numbers, positive decimals, and percents.	<b>2.</b> Compare and Order Whole Numbers and Decimals
<b>5.N.8</b> Apply the number theory concepts of common factor, common multiple, and divisibility rules for 2, 3, 5, and 10 to the solution of problems. Demonstrate an understanding of the concepts of prime and composite numbers.	<b>10.</b> Common Factors and Common Multiples
<b>5.N.9</b> Solve problems involving multiplication and division of whole numbers, and multiplication of positive fractions with whole numbers.	
<b>5.N.10</b> Demonstrate an understanding of how parentheses affect expressions involving addition, subtraction, and multiplication, and use that understanding to solve problems, e.g., $3 \times (4 + 2) = 3 \times 6$ .	
<b>5.N.11</b> Demonstrate an understanding of the inverse relationship of addition and subtraction, and use that understanding to simplify computation and solve problems.	<b>4.</b> Properties of Addition
<b>5.N.12</b> Accurately and efficiently add and subtract whole numbers and positive decimals. Multiply and divide (using double-digit divisors) whole numbers. Multiply positive decimals with whole numbers.	
<b>5.N.13</b> Accurately and efficiently add and subtract positive fractions and mixed numbers with like denominators and with unlike denominators (2, 4, 5, 10 only); multiply positive fractions with whole numbers. Simplify fractions in cases when both the numerator and the denominator have 2, 3, 4, 5, or 10 as a common factor	<b>12.</b> Equivalent Fractions and Simplest Form
<b>5.N.14</b> Estimate sums and differences of whole numbers, positive fractions, and positive decimals. Estimate products of whole numbers and products of positive decimals with whole numbers. Use a variety of strategies and judge the reasonableness of the answer.	<b>5.</b> Estimate Whole Numbers and Decimals <b>14.</b> Add and Subtract Fractions with Unlike Denominators

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<b>Patterns, Relations, and Algebra Strand</b>	
<i>Students engage in problem solving, communicating, reasoning, connecting, and representing as they:</i>	
<b>5.P.1</b> Analyze and determine the rules for extending symbolic, arithmetic, and geometric patterns and progressions, e.g., ABBCCC; 1, 5, 9, 13...; 3, 9, 27...	<b>8.</b> Patterns and Estimation in Division
<b>5.P.2</b> Replace variables with given values and evaluate/simplify, e.g., $2( ) + 3$ when $ = 4$ .	<b>29.</b> Write and Solve Equations
<b>5.P.3</b> Use the properties of equality to solve problems with whole numbers, e.g., if $ + 7 = 13$ , then $ = 13 - 7$ , therefore $ = 6$ ; if $3 \times = 15$ , then $ = 15 \div 3$ , therefore $ = 5$ .	
<b>5.P.4</b> Represent real situations and mathematical relationships with concrete models, tables, graphs, and rules in words and with symbols, e.g., input-output tables.	<b>24.</b> Make and Read Graphs
<b>5.P.5</b> Solve problems involving proportional relationships using concrete models, tables, graphs, and paper-pencil methods.	<b>24.</b> Make and Read Graphs
<b>5.P.6</b> Interpret graphs that represent the relationship between two variables in everyday situations.	<b>25.</b> Statistics and Data Analysis
<b>Geometry Strand</b>	
<i>Students engage in problem solving, communicating, reasoning, connecting, and representing as they:</i>	
<b>5.G.1</b> Identify, describe, and compare special types of triangles (isosceles, equilateral, right) and quadrilaterals (square, rectangle, parallelogram, rhombus, trapezoid), e.g., recognize that all equilateral triangles are isosceles, but not all isosceles triangles are equilateral.	<b>17.</b> Triangles, Polygons and Quadrilaterals
<b>5.G.2</b> Identify, describe, and compare special types of three-dimensional shapes (cubes, prisms, spheres, pyramids) based on their properties, such as edges and faces.	
<b>5.G.3</b> Identify relationships among points and lines, e.g., intersecting, parallel, perpendicular.	<b>16.</b> Points, Lines, Rays, and Angles <b>20.</b> Solid Figures
<b>5.G.4</b> Using ordered pairs of whole numbers (including zero), graph, locate, and identify points, and describe paths on the Cartesian coordinate plane.	<b>30.</b> Functions and Ordered Pairs
<b>5.G.5</b> Describe and perform transformations on two-dimensional shapes, e.g., translations, rotations, and reflections.	
<b>5.G.6</b> Identify and describe line symmetry in two-dimensional shapes, including shapes that have multiple lines of symmetry.	<b>18.</b> Congruence, Transformations, and Symmetry
<b>5.G.7</b> Determine if two triangles or two quadrilaterals are congruent by measuring sides or a combination of sides and angles, as necessary; or by motions or series of motions, e.g., translations, rotations, and reflections.	<b>18.</b> Congruence, Transformations, and Symmetry

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<b>Measurement Strand</b>	
<i>Students engage in problem solving, communicating, reasoning, connecting, and representing as they:</i>	
<b>5.M.1</b> Apply the concepts of perimeter and area to the solution of problems involving triangles and rectangles. Apply formulas where appropriate.	<b>22.</b> Perimeter and Circumference <b>23.</b> Area, Surface Area, and Volume
<b>5.M.2</b> Identify, measure, describe, classify, and draw various angles. Draw triangles given two sides and the angle between them, or given two angles and the side between them, e.g., draw a triangle with one right angle and two sides congruent.	<b>18.</b> Congruence, Transformations, and Symmetry
<b>5.M.3</b> Solve problems involving simple unit conversions within a system of measurement.	<b>21.</b> Customary and Metric Measurement of Length, Weight/Mass, and Capacity
<b>5.M.4</b> Find volumes and surface areas of rectangular prisms.	<b>23.</b> Area, Surface Area, and Volume
<b>5.M.5</b> Find the sum of the measures of the interior angles in triangles by measuring the angles, and without measuring the angles.	
<b>Data Analysis, Statistics, and Probability Strand</b>	
<i>Students engage in problem solving, communicating, reasoning, connecting, and representing as they:</i>	
<b>5.D.1</b> Given a set of data, find the median, mean, mode, maximum, minimum, and range, and apply to solutions of problems.	<b>25.</b> Statistics and Data Analysis
<b>5.D.2</b> Construct and interpret line plots, line graphs, and bar graphs. Interpret and label circle graphs.	
<b>5.D.3</b> Predict the probability of outcomes of simple experiments (e.g., tossing a coin, rolling a number cube) and test the predictions.	<b>28.</b> Probability