

**Seventh Grade Math Assessment Framework**

**Standard 6A – Representations and Ordering**

		Related Textbook pages	Related Additional Resources	Local Assessment Items
<b>Read, Write, &amp; Represent Numbers</b>	<b>6.7.01</b> Read, write, and recognize equivalent representations of positive powers of 10.			
	<b>6.7.02</b> Read, write, recognize, model, and interpret integers, including translating numerical expressions.			
	<b>6.7.03</b> Recognize, translate between, and apply multiple representations of rational numbers (decimals, fractions, mixed numbers, and percents less than 100%).			
	<b>6.7.04</b> Represent repeated factors using exponents.			
<b>Order &amp; Compare Numbers</b>	<b>6.7.05</b> Order and compare integers, terminating decimals, fractions, and mixed numbers			
<b>Number Line</b>	<b>6.7.06</b> Identify and locate integers, decimals, and fractions/mixed numbers on a number line, and estimate the locations of square roots.			
<b>Classifications of Numbers</b>	<b>6.7.07</b> Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., square numbers, prime/composite, prime factorization, greatest common factor, least common multiple).			

**Standards 6B, 6C – Computation, Operations, Estimation, and Properties**

<b>Number Operations</b>	<b>6.7.08</b> Solve problems and number sentences involving addition, subtraction, multiplication, and division using integers, fractions, and decimals.			
	<b>6.7.09</b> Identify and apply order of operations to simplify numeric expressions involving whole numbers (including exponents), fractions, and decimals.			
<b>Properties</b>	<b>6.7.10</b> Identify and apply the following properties of operations with rational numbers: <ul style="list-style-type: none"> <li>• the commutative and associative properties for addition and multiplication;</li> <li>• the distributive property;</li> <li>• the additive and multiplicative identity properties;</li> <li>• the additive and multiplicative inverse properties; and</li> <li>• the multiplicative property of zero.</li> </ul>			
	<b>6.7.11</b> Demonstrate and apply the relationships between addition/subtraction and multiplication/division with rational numbers.			
<b>Estimation</b>	<b>6.7.12</b> Make estimates appropriate to a given situation, and analyze what effect the estimation method used has on the accuracy of results.			
	<b>6.7.13</b> Estimate the square root of a number less than 1,000 between two whole numbers (e.g., $\sqrt{41}$ is between 6 and 7)			

**Standard 6D – Ratios, Proportions, and Percents**

Identify & Express Ratios	6.7.14 Create and explain ratios that represent a given situation.			
Proportional Reasoning	6.7.15 Use proportional reasoning to model and solve problems.			
Percents	6.7.16 Read, write, recognize, model, and interpret percents from 0% to 100%.			
	6.7.17 Solve number sentences and problems involving fractions, decimals, and percents (e.g., 50% of 10 is the same as 1/2 of 10 is the same as $0.5 \times 10$ , sales tax, tips, interest, discounts).			

**Standards 7A, 7B, 7C – Units, Tools, Estimation, and Applications**

Measurement Tools	7.7.01 Select and use appropriate standard units and tools to measure length, mass/weight, capacity, and angles. Sketch, with given specifications, line segments, angles, triangles, and quadrilaterals.			
Area, Perimeter, & Circumference	7.7.02 Solve problems involving the perimeter and area of polygons and composite figures using diagrams, models, and grids or by measuring or using given formulas (may include sketching a figure from its description).			

<b>Estimation</b>	<b>7.7.03</b> Compare and estimate length (including perimeter), area, volume, weight/mass, and angles ( $0^\circ$ to $180^\circ$ ) using referents.			
<b>Volume &amp; Surface Area</b>	<b>7.7.04</b> Determine the volume and surface area of a right rectangular prism using an appropriate formula or strategy.			
<b>Measurement Conversions</b>	<b>7.7.05</b> Solve problems involving unit conversions <u>within the same measurement system</u> for length, weight/mass, capacity, and square units (e.g., $1 \text{ ft}^2 = 144 \text{ in}^2$ ).			
<b>Indirect Measurements &amp; Scale Drawings</b>	<b>7.7.06</b> Solve problems involving scale drawings and maps.			

**Standard 8A – Representations, Patterns, and Expressions**

<b>Patterns</b>	<b>8.7.01</b> Determine a missing term in a sequence, extend a sequence, and construct and identify a rule that can generate the terms of an arithmetic or geometric sequence.			
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Write and Simplify Expressions	8.7.02 Write an expression using variables to represent unknown quantities.			
	8.7.03 Simplify algebraic expressions by identifying and combining like terms.			
	8.7.04 Recognize equivalent forms of algebraic expressions.			
Evaluate Algebraic Expressions	8.7.05 Evaluate or simplify algebraic expressions with one or more integer variable values (e.g., $a^2 + b$ for $a = 3$ and $b = -4$ ).			

**Standard 8B – Connections Using Tables, Graphs, and Symbols**

Describing Change	8.7.06 Determine how a change in one variable relates to a change in a second variable.			
Coordinate System	8.7.07 Represent linear equations and quantitative relationships on a rectangular coordinate system, and interpret the meaning of a specific part of a graph.			

<b>Representations</b>	<b>8.7.08</b> Translate between different representations (table, written, graphical, or pictorial) of whole number relationships and linear expressions.			
<b>Inequalities</b>	<b>8.7.09</b> Identify, graph, and interpret inequalities on a number line.			

**Standards 8C, 8D – Writing, Interpreting, and Solving Equations**

<b>Write Equations &amp; Inequalities</b>	<b>8.7.10</b> Represent and analyze problems with linear equations and inequalities.			
<b>Solve Equations and Inequalities</b>	<b>8.7.11</b> Solve linear equations in one variable (e.g., $2x + 3 = 13$ ) and inequalities involving $<$ or $>$ (e.g., $2x < 6$ , $x + 7 > 10$ ).			
	<b>8.7.12</b> Solve word problems involving unknown quantities.			

**Standard 9A – Properties of Single Figures and Coordinate Geometry**

<b>Properties of Single Figures</b>	<b>9.7.01</b> Classify, describe, and sketch regular and irregular two-dimensional shapes according to the number of sides, length of sides, number of vertices, and interior angles.			
	<b>9.7.02</b> Solve problems involving two- and three-dimensional shapes.			
	<b>9.7.03</b> Solve problems using properties of triangles and quadrilaterals (e.g., opposite sides of a parallelogram are congruent).			
<b>Circles</b>	<b>9.7.04</b> Identify, describe, and determine the radius and diameter of a circle.			
<b>Coordinate Geometry</b>	<b>9.7.05</b> Graph points and identify coordinates of points on the Cartesian coordinate plane (all four quadrants).			
	<b>9.7.06</b> Represent and identify geometric figures using coordinate geometry.			
<b>Transformations</b>	<b>9.7.07</b> Analyze the results of a combination of transformations.			

<b>Lines, Segments, Rays, &amp; Angles</b>	<b>9.7.08</b> Identify or analyze relationships of angles formed by intersecting lines.			
	<b>9.7.09</b> Identify and sketch acute, right, and obtuse angles.			
	<b>9.7.10</b> Solve problems involving complementary and supplementary angles.			

**Standard 9B – Relationships Between and Among Multiple Figures**

<b>Relationships Between Two- &amp; Three-Dimensional Objects</b>	<b>9.7.11</b> Identify a three-dimensional object from its net.			
<b>Composing &amp; Decomposing Figures</b>	<b>9.7.12</b> Recognize which attributes (such as shape, perimeter, and area) change or don't change when plane figures are composed, decomposed, or rearranged.			
<b>Congruency &amp; Similarity</b>	<b>9.7.13</b> Describe the difference between congruence and similarity.			
	<b>9.7.14</b> Determine if figures are similar, and identify relationships between corresponding parts of similar figures.			

<b>Distance</b>	<b>9.7.15</b> Determine the distance between two points on a horizontal or vertical number line.			
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**Standard 9C – Justifications of Conjectures and Conclusions**

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*This standard is not assessed in isolation. Rather, its essence is assessed indirectly through problems that require this type of thinking.*

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**Standard 9D – Trigonometry**

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*This standard is not assessed on the state assessment until grade 11.*

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**Standards 10A, 10B – Data Analysis and Statistics**

<b>Read &amp; Interpret Displays</b>	<b>10.7.01</b> Read, interpret, and make predictions from data represented in a bar graph, line (dot) plot, Venn diagram (with two circles), chart/table, line graph, scatterplot, circle graph, or histogram.			
	<b>10.7.02</b> Compare different representations of the same data.			
<b>Complete &amp; Create Displays</b>	<b>10.7.03</b> Create a bar graph, chart/table, line graph, or circle graph for a given set of data.			
<b>Line of Best Fit</b>	<b>10.7.04</b> Identify a reasonable approximation of the line of best fit from a set of data or a scatter plot.			
<b>Statistics</b>	<b>10.7.05</b> Determine and use the mode, range, median, and mean to interpret data.			

**Standard 10C – Probability**

<b>Probability</b>	<b>10.7.06</b> Solve problems involving the probability of a simple or compound event, including representing the probability as a fraction, decimal, or percent.			
<b>Outcomes &amp; Counting Principles</b>	<b>10.7.07</b> Represent all possible outcomes for simple events.			
	<b>10.7.08</b> Solve simple problems involving the number of ways objects can be arranged (permutations and combinations).			