

# Illinois Mathematics Assessment Framework, Grade 7, Correlated to *Glencoe Mathematics: Applications and Concepts, Course 2*

Lessons in which the objectives are a primary focus are indicated in **bold**.

Assessment Objective		Student Edition Lesson(s)
<b>STATE GOAL 6 NUMBER SENSE</b>		
<b>Standard 6A—Representations and Ordering</b>		
<b>6.7.01</b>	Read, write, and recognize equivalent representations of positive powers of 10.	1-9, PS8
<b>6.7.02</b>	Read, write, recognize, model, and interpret integers, including translating numerical expressions.	3-1
<b>6.7.03</b>	Recognize, translate between, and apply multiple representations of rational numbers (decimals, fractions, mixed numbers, and percents less than 100%).	5-3, 5-4, 5-5, 5-6, 5-8, 7-5, 7-6, PS2, PS10
<b>6.7.04</b>	Represent repeated factors using exponents.	1-2
<b>6.7.05</b>	Order and compare integers, terminating decimals, fractions, and mixed numbers.	3-2, 5-8, PS3
<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.	3-2, 6-1, 11-2
<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).	5-1a, 5-1, 5-2, GZ5, 5-7, PS1
<b>Standards 6B, 6C—Computation, Operations, Estimation, and Properties</b>		
<b>6.7.08</b>	Solve problems and number sentences involving addition, subtraction, multiplication, and division using integers, fractions, and decimals.	3-4a, 3-4, 3-5a, 3-5, 3-6, 3-7, 5-3, 5-6, 6-2, 6-3, 6-4, GZ6, 6-6, PS6, PS7, PS9
<b>6.7.09</b>	Identify and apply order of operations to simplify numeric expressions involving whole numbers (including exponents), fractions, and decimals.	1-3
<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>	1-6, 6-5
<b>6.7.11</b>	Demonstrate and apply the relationships between addition/subtraction and multiplication/division with rational numbers.	3-5a, 3-5
<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.	1-1, 6-1, 6-3b, 8-1, 8-1b, PS5
<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)	11-1, 11-2, GZ11
<b>Standard 6D—Ratios, Proportions, and Percents</b>		
<b>6.7.14</b>	Create and explain ratios that represent a given situation.	5-8, 7-1, 7-2
<b>6.7.15</b>	Use proportional reasoning to model and solve problems.	7-3, 7-3b, GZ7, 7-5, 7-7, 7-8, 8-3
<b>6.7.16</b>	Read, write, recognize, model, and interpret percents from 0% to 100%.	5-5, 5-6, 7-5, 8-6, 8-6b
<b>6.7.17</b>	Solve number sentences and problems involving fractions, decimals, and percents (e.g., 50% of 10 is the same as $\frac{1}{2}$ of 10 is the same as $0.5 \times 10$ , sales tax, tips, interest, discounts).	5-3, 5-5, 5-6, 7-5, 7-7, 7-8, 8-1, 8-2, 8-3, 8-4, 8-5, 8-6, 8-6b

PS = Prerequisite Skill Appendix (pp. 586–593), GZ = Game Zone

**Assessment Objective**

**Student Edition Lesson(s)**

**STATE GOAL 7 MEASUREMENT**

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

<b>7.7.01</b>	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.	1-8, 10-1, 10-1b, 10-3b, 10-4b, 12-6
<b>7.7.02</b>	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).	6-8, 11-4, 11-5a, 11-5, 11-7, 11-8
<b>7.7.03</b>	Compare and estimate length (including perimeter), area, volume, weight/mass, and angles ( $0^\circ$ to $180^\circ$ ) using referents.	11-7a, 12-2b, 12-4b, 12-6
<b>7.7.04</b>	Determine the volume and surface area of a right rectangular prism using an appropriate formula or strategy.	12-2, 12-4a, 12-4
<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., $1 \text{ ft}^2 = 144 \text{ in}^2$ ).	1-8, 6-7
<b>7.7.06</b>	Solve problems involving scale drawings and maps.	7-4, 7-4b

**STATE GOAL 8 ALGEBRA**

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

<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.	1-7, 1-7b, 3-6a, 4-6
<b>8.7.02</b>	Write an expression using variables to represent unknown quantities.	1-4, 4-1
<b>8.7.03</b>	Simplify algebraic expressions by identifying and combining like terms.	3-4
<b>8.7.04</b>	Recognize equivalent forms of algebraic expressions.	1-6
<b>8.7.05</b>	Evaluate or simplify algebraic expressions with one or more integer variable values (e.g., $a^2 + b$ for $a = 3$ and $b = -4$ ).	1-4, 1-5a, GZ1

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

<b>8.7.06</b>	Determine how a change in one variable relates to a change in a second variable.	4-6, 4-7, 7-2b, 12-4b
<b>8.7.07</b>	Represent linear equations and quantitative relationships on a rectangular coordinate system, and interpret the meaning of a specific part of a graph.	4-6a, 4-6, 4-7
<b>8.7.08</b>	Translate between different representations (table, written, graphical, or pictorial) of whole number relationships and linear expressions.	4-6a, 4-6, 4-7
<b>8.7.09</b>	Identify, graph, and interpret inequalities on a number line.	4-5

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

<b>8.7.10</b>	Represent and analyze problems with linear equations and inequalities.	1-5a, 1-5, 4-1, 4-2, 4-3, 4-4, 4-5, 8-2
<b>8.7.11</b>	Solve linear equations in one variable (e.g., $2x + 3 = 13$ ) and inequalities involving $<$ or $>$ (e.g., $2x < 6$ , $x + 7 > 10$ ).	1-5, 4-2a, 4-2, 4-3, 4-4, GZ4, 4-5, 6-5, 8-2
<b>8.7.12</b>	Solve word problems involving unknown quantities.	1-5a, 1-5, 4-2, 4-3, 4-4, 4-5, 8-2, 8-3

**STATE GOAL 9 GEOMETRY**

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

<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.	10-4, 10-5, 10-7
<b>9.7.02</b>	Solve problems involving two- and three-dimensional shapes.	10-7, 11-1, 11-3a, 11-3
<b>9.7.03</b>	Solve problems using properties of triangles and quadrilaterals (e.g., opposite sides of a parallelogram are congruent).	10-4, 10-5

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Assessment Objective		Student Edition Lesson(s)
<b>9.7.04</b>	Identify, describe, and determine the radius and diameter of a circle.	<b>6-9a, 6-9</b>
<b>9.7.05</b>	Graph points and identify coordinates of points on the Cartesian coordinate plane (all four quadrants).	<b>3-3, GZ3</b>
<b>9.7.06</b>	Represent and identify geometric figures using coordinate geometry.	10-8, 10-9b
<b>9.7.07</b>	Analyze the results of a combination of transformations.	10-7, <b>10-8, 10-8b, 10-9, 10-9b</b>
<b>9.7.08</b>	Identify or analyze relationships of angles formed by intersecting lines.	<b>10-3, 10-3b</b>
<b>9.7.09</b>	Identify and sketch acute, right, and obtuse angles.	<b>10-1a, 10-1, 10-1b</b>
<b>9.7.10</b>	Solve problems involving complementary and supplementary angles.	<b>10-3</b>
<b>Standard 9B—Relationships Between and Among Multiple Figures</b>		
<b>9.7.11</b>	Identify a three-dimensional object from its net.	12-1a, 12-1, <b>12-1b, 12-4a, 12-4, 12-4b</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>11-7, 11-8</b>
<b>9.7.13</b>	Describe the difference between congruence and similarity.	Beyond the scope of this textbook
<b>9.7.14</b>	Determine if figures are similar, and identify relationships between corresponding parts of similar figures.	<b>10-6, 12-2b</b>
<b>9.7.15</b>	Determine the distance between two points on a horizontal or vertical number line.	3-1, 3-4, 3-5, 3-6
<b>Standard 9C—Justifications of Conjectures and Conclusions</b>		
<i>This standard is not assessed in isolation. Rather, its essence is assessed indirectly through problems that require this type of thinking.</i>		
<b>Standard 9D—Trigonometry</b>		
<i>This standard is not assessed on the state assessment until grade 11.</i>		
<b>STATE GOAL 10 DATA ANALYSIS, STATISTICS, AND PROBABILITY</b>		
<b>Standards 10A, 10B—Data Analysis and Statistics</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.	1-1, <b>2-1, 2-2a, 2-2, 2-3, 2-4b, 2-5, 2-6, 2-7</b>
<b>10.7.02</b>	Compare different representations of the same data.	<b>2-7b, 2-8</b>
<b>10.7.03</b>	Create a bar graph, chart/table, line graph, or circle graph for a given set of data.	<b>2-1, 2-2, 2-3, 2-4b, 2-7, 2-7b, 10-2</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>2-2</b>
<b>10.7.05</b>	Determine and use the mode, range, median, and mean to interpret data.	2-3, <b>2-4, 2-4b, GZ2, 2-6</b>
<b>Standard 10C—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>9-1, 9-6, 9-6b, 9-7, 11-8</b>
<b>10.7.07</b>	Represent all possible outcomes for simple events.	<b>9-1, 9-2, 9-3, GZ9, 9-6a</b>
<b>10.7.08</b>	Solve simple problems involving the number of ways objects can be arranged (permutations and combinations).	<b>5-2a, 9-2, 9-3, 9-4, GZ9, 9-5a, 9-5, 9-6a</b>

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