Illinois Learning Standards for Early and Late High School Correlated to *Glencoe Geometry*

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

	Early High School Standard	Student Edition Lesson(s)*
State Goal 6	**Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.**	
6.A.4	Identify and apply the associative, commutative, distributive and identity properties of real numbers, including special numbers such as pi and square roots.	2-6 *Glencoe Algebra 1:* 1-4, 1-5, 1-6, 8-3, 11-1, 11-2, 11-3, PS10
6.B.4	Select and use appropriate arithmetic operations in practical situations including calculating wages after taxes, developing a budget and balancing a checkbook.	*Glencoe Algebra 1:* 1-3, 1-4, 6-8
6.C.4	Determine whether exact values or approximations are appropriate (e.g., bid a job, determine gas mileage for a trip).	*Glencoe Algebra 1:* 1-3, 2-7, 4-1, 10-2, 12-4
6.D.4	Solve problems involving recipes or mixtures, financial calculations and geometric similarity using ratios, proportions and percents.	**6-1,** 6-2, 6-3 *Glencoe Algebra 1:* 3-6, 3-7, **3-9,** 3-9F, **11-6,** 12-8
State Goal 7	**Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.**	
7.A.4a	Apply units and scales to describe and compare numerical data and physical objects.	**1-2,** 11-1, 11-2, 11-3, 11-4, 12-2, 12-3, 12-4, 12-5, 12-6, 12-7, **13-1,** 13-2, 13-3, 13-4
7.A.4b	Apply formulas in a wide variety of theoretical and practical real-world measurement applications involving perimeter, area, volume, angle, time, temperature, mass, speed, distance, density and monetary values.	**PS3, 1-6, 4-2, 8-1, 11-1, 11-2, 11-3, 11-4, 11-5, 13-1, 13-2, 13-3** *Glencoe Algebra 1:* 1-1, 2-7, 3-1, 3-8, 3-9, 3-9F, 5-3, 6-3, 11-1, **11-7,** 12-5
7.B.4	Estimate and measure the magnitude and directions of physical quantities (e.g., velocity, force, slope) using rulers, protractors and other scientific instruments including timers, calculators and computers.	*Glencoe Algebra 1:* 4-2, 5-1, 5-2, 5-3, 5-5
7.C.4a	Make indirect measurements, including heights and distances, using proportions (e.g., finding the height of a tower by its shadow).	**6-3,** 6-5
7.C.4b	Interpret scale drawings and models using maps and blueprints.	6-1, 6-2, 6-3, 6-4, 13-4 *Glencoe Algebra 1:* **3-6**
7.C.4c	Convert within and between measurement systems and monetary systems using technology where appropriate.	**PS2** *Glencoe Algebra 1:* **3-8, 12-3, 12-4**
State Goal 8	**Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.**	
8.A.4a	Use algebraic methods to convert repeating decimals to fractions.	*Glencoe Algebra 1:* **PS4**

P = Preview Lesson, F = Follow-Up Lesson, PS = Prerequisite Skill Lesson
**Glencoe Geometry* unless otherwise noted.

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Number	Early High School Standard	Student Edition Lesson(s)*
8.A.4b	Represent mathematical patterns and describe their properties using variables and mathematical symbols.	**6-1F, 6-6** *Glencoe Algebra 1:* **1-1, 4-8**
8.B.4a	Represent algebraic concepts with physical materials, words, diagrams, tables, graphs, equations and inequalities and use appropriate technology.	Throughout *Glencoe Geometry* and *Glencoe Algebra 1*
8.B.4b	Use the basic functions of absolute value, square root, linear, quadratic and step to describe numerical relationships.	PS4, PS10 *Glencoe Algebra 1:* **2-1,** 2-2, **2-7, 4-4, 6-5,** 11-1
8.C.4a	Analyze and report the effects of changing coefficients, exponents and other parameters on functions and their graphs.	*Glencoe Algebra 1:* 5-2, **5-3F, 10-1F**
8.C.4b	Apply algebraic properties and procedures with matrices, vectors, functions and sequences using data found in business, industry and consumer situations.	**9-6, 9-7, 13-5** *Glencoe Algebra 1:* **1-8, 1-8F, 1-9, 1-9F, 4-7, 4-8, 10-7, 10-7F, 13-2**
8.D.4	Formulate and solve linear and quadratic equations and linear inequalities algebraically and investigate nonlinear inequalities using graphs, tables, calculators and computers.	*Glencoe Algebra 1:* **3-1, 3-2, 3-3, 3-4, 3-5, 3-8, 3-9, 6-1, 6-2, 6-3, 6-4, 10-3, 10-3F, 10-4,** 13-3F
State Goal 9	**Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.**	
9.A.4a	Construct a model of a three-dimensional figure from a two-dimensional pattern.	13-1, **13-2**
9.A.4b	Make perspective drawings, tessellations and scale drawings, with and without the use of technology.	**1-1, 9-4, 9-5**
9.B.4	Recognize and apply relationships within and among geometric figures.	**4-1, 6-2, 8-4, 8-5, 10-1**
9.C.4a	Construct and test logical arguments for geometric situations using technology where appropriate.	**2-1, 2-2, 2-3, 2-4**
9.C.4b	Construct and communicate convincing arguments for geometric situations.	2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7
9.C.4c	Develop and communicate mathematical proofs (e.g., two-column, paragraph, indirect) and counter examples for geometric statements.	**2-5, 2-6, 2-7, 2-8, 4-2, 4-3,** 4-4, 4-5, 4-6, **4-7, 5-3**
9.D.4	Analyze and solve problems involving triangles (e.g., distances which cannot be measured directly) using trigonometric ratios.	**7-4,** 7-5
State Goal 10	**Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.**	
10.A.4a	Represent and organize data by creating lists, charts, tables, frequency distributions, graphs, scatterplots and boxplots.	2-5, 3-3, 3-4, 8-3, 8-5, 8-6, 9-3, 9-4, WebQuest 1 *Glencoe Algebra 1:* **1-8F, 1-9, 2-5,** 5-7, **13-2, 13-3,** 13-4, 13-5F, **13-5**
10.A.4b	Analyze data using mean, median, mode, range, variance and standard deviation of a data set, with and without the use of technology.	*Glencoe Algebra 1:* **13-4, PS12**

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**Glencoe Geometry* unless otherwise noted.

Number	Early High School Standard	Student Edition Lesson(s)*
10.A.4c	Predict from data using interpolation, extrapolation and trend lines, with and without the use of technology.	*Glencoe Algebra 1:* 5-4, 5-7
10.B.4	Design and execute surveys or experiments, gather data to answer relevant questions, and communicate results and conclusions to an audience using traditional methods and contemporary technology.	WebQuests 1-4 *Glencoe Algebra 1:* 13-1, WebQuests 1-5
10.C.4a	Solve problems of chance using the principles of probability including conditional settings.	11-5 *Glencoe Algebra 1:* 14-2, 14-3
10.C.4b	Design and conduct simulations (e.g., waiting times at restaurant, probabilities of births, likelihood of game prizes), with and without the use of technology.	*Glencoe Algebra 1:* 14-5
10.C.4c	Propose and interpret discrete probability distributions, with and without the use of technology.	*Glencoe Algebra 1:* 14-4

The following Illinois Learning Standards for Late High School are also addressed in *Glencoe Geometry*.

Number	Late High School Standard	Student Edition Lesson(s)
6.C.5	Determine the level of accuracy needed for computations involving measurement and irrational numbers.	1-2
6.D.5	Solve problems involving loans, mortgages and other practical applications involving geometric patterns of growth.	6-6
7.B.5	Estimate perimeter, area, volume, and capacity of irregular shapes, regions and solids and explain the reasoning supporting the estimate.	1-6, 11-4, 13-1, 13-2, 13-3, 13-4
7.C.5b	Determine how changes in one measure may affect other measures (e.g., what happens to the volume and surface area of a cube when the side of the cube is halved).	12-2, 12-3, 13-1, 13-4
8.A.5	Solve mathematical problems involving recursive patterns and use models that employ such relationships.	6-6
9.A.5	Use geometric figures and their properties to solve problems in the arts, the physical and life sciences and the building trades, with and without the use of technology.	Throughout *Glencoe Geometry*
9.B.5	Construct and use two- and three-dimensional models of objects that have practical applications (e.g., blueprints, topographical maps, scale models).	WebQuest 4
9.C.5a	Perform and describe an original investigation of a geometric problem and verify the analysis and conclusions to an audience.	WebQuests 1-4
9.C.5b	Apply physical models, graphs, coordinate systems, networks and vectors to develop solutions in applied contexts (e.g., bus routing, areas of irregular shapes, describing forces and other physical quantities).	9-6, 11-4

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