

Illinois Learning Standards for Early High School Correlated to *Glencoe Algebra 1*

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

Learning Standard		Student Edition Lesson(s)*
State Goal 6		
<i>Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.</i>		
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.	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.	1-3, 1-4, 6-1, 6-6
6.C.4	Determine whether exact values or approximations are appropriate (e.g., bid a job, determine gas mileage for a trip).	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.	3-6, 3-7, 3-9, 3-9F, 11-6, 12-8
State Goal 7		
<i>Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.</i>		
7.A.4a	Apply units and scales to describe and compare numerical data and physical objects.	Entire course
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.	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.	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).	3-6, 11-6
7.C.4b	Interpret scale drawings and models using maps and blueprints.	3-6, 4-1
7.C.4c	Convert within and between measurement systems and monetary systems using technology where appropriate.	3-8, 12-3, 12-4

P = Preview Lesson, F = Follow-Up Lesson, PS = Prerequisite Skill Lesson

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Learning Standard

Student Edition Lesson(s)*

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.	PS4
8.A.4b	Represent mathematical patterns and describe their properties using variables and mathematical symbols.	1-1, 4-8
8.B.4a	Represent algebraic concepts with physical materials, words, diagrams, tables, graphs, equations and inequalities and use appropriate technology.	Entire course
8.B.4b	Use the basic functions of absolute value, square root, linear, quadratic and step to describe numerical relationships.	2-1, 2-2, 2-7, 4-4, 4-6, 6-5, 11-1; <i>Glencoe Pre-Algebra: 13-5</i>
8.C.4a	Analyze and report the effects of changing coefficients, exponents and other parameters on functions and their graphs.	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.	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.	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.	8-1F; <i>Glencoe Pre-Algebra: 11-1P, 11-2P, 11-4, 11-5</i>
9.A.4b	Make perspective drawings, tessellations and scale drawings, with and without the use of technology.	3-6; <i>Glencoe Pre-Algebra: 6-3, 10-6, 10-6F, 11-1P</i>
9.B.4	Recognize and apply relationships within and among geometric figures.	11-4, 11-6, 11-7, PS7, PS8
9.C.4a	Construct and test logical arguments for geometric situations using technology where appropriate.	1-7, 11-7P; <i>Glencoe Geometry: 2-1, 2-2, 2-3, 2-4</i>
9.C.4b	Construct and communicate convincing arguments for geometric situations.	1-7, 2-4, 11-7P; <i>Glencoe Geometry: 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7</i>
9.C.4c	Develop and communicate mathematical proofs (e.g., two-column, paragraph, indirect) and counter examples for geometric statements.	1-7, 11-5, 11-7; <i>Glencoe Geometry: 2-5, 2-6, 2-7, 2-8, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 5-3</i>
9.D.4	Analyze and solve problems involving triangles (e.g., distances which cannot be measured directly) using trigonometric ratios.	11-6, 11-7P, 11-7

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State Goal 10		
<i>Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.</i>		
10.A.4a	Represent and organize data by creating lists, charts, tables, frequency distributions, graphs, scatterplots and box-plots.	1-8F, 1-9, 2-5, 5-7, 13-2, 13-3, 13-4, 13-5, 13-5F
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.	2-5, 13-4, PS12
10.A.4c	Predict from data using interpolation, extrapolation and trend lines, with and without the use of technology.	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.	13-1, WebQuest 1-5
10.C.4a	Solve problems of chance using the principles of probability including conditional settings.	2-6, 14-2, 14-3
10.C.4b	Design and conduct simulations (e.g., waiting times at restaurants, probabilities of births, likelihood of game prizes), with and without the use of technology.	14-5
10.C.4c	Propose and interpret discrete probability distributions, with and without the use of technology.	14-4

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