

Ohio Academic Content Standards, Grade 10 Indicators, Correlated to *Glencoe Algebra 1* and *Glencoe Geometry*

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

Academic Standards		Student Edition Lesson(s)
Standard 1 Number, Number Sense and Operations		
Number and Number Systems		
N1	Connect physical, verbal and symbolic representations of irrational numbers; e.g., construct $\sqrt{2}$ as a hypotenuse or on a number line.	<i>Glencoe Geometry</i> 7-3
Meaning of Operations		
N2	Explain the meaning of the n th root.	<i>Glencoe Geometry</i> PS10
Computation and Estimation		
N3	Use factorial notation and computations to represent and solve problem situations involving arrangements.	<i>Glencoe Algebra 1</i> 14-1
N4	Approximate the n th root of a given number greater than zero between consecutive integers when n is an integer; e.g., the 4 th root of 50 is between 2 and 3.	
Standard 2 Measurement		
Use Measurement Techniques and Tools		
M1	Explain how a small error in measurement may lead to a large error in calculated results.	<i>Glencoe Geometry</i> 1-2
M2	Calculate relative error.	<i>Glencoe Geometry</i> 1-2
M3	Explain the difference between absolute error and relative error in measurement.	<i>Glencoe Geometry</i> 1-2
M4	Give examples of how the same absolute error can be problematic in one situation but not in another; e.g., compare “accurate to the nearest foot” when measuring the height of a person versus when measuring the height of a mountain.	<i>Glencoe Geometry</i> 1-2, PS2
M5	Determine the measures of central and inscribed angles and their associated major and minor arcs.	<i>Glencoe Geometry</i> 10-2, 10-4
Standard 3 Geometry and Spatial Sense		
Characteristics and Properties		
G1	Formally define and explain key aspects of geometric figures, including:	
G1a	interior and exterior angles of polygons;	<i>Glencoe Geometry</i> 8-1
G1b	segments related to triangles (median, altitude, midsegment);	<i>Glencoe Geometry</i> 5-1, 6-4
G1c	points of concurrency related to triangles (centroid, incenter, orthocenter, circumcenter);	<i>Glencoe Geometry</i> 5-1
G1d	circles (radius, diameter, chord, circumference, major arc, minor arc, sector, segment, inscribed angle).	<i>Glencoe Geometry</i> 10-1, 10-2, 10-4, 11-5
G2	Recognize and explain the necessity for certain terms to remain undefined, such as point, line and plane.	<i>Glencoe Geometry</i> 1-1
G3	Make, test and establish the validity of conjectures about geometric properties and relationships using counterexample, inductive and deductive reasoning, and paragraph or two-column proof, including:	
G3a	prove the Pythagorean Theorem;	<i>Glencoe Geometry</i> 7-2

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G3b	prove theorems involving triangle similarity and congruence;	<i>Glencoe Geometry</i> 4-2, 4-3, 4-4, 4-5, 4-6, 6-3, 6-5
G3c	prove theorems involving properties of lines, angles, triangles and quadrilaterals;	<i>Glencoe Geometry</i> 2-1, 3-2, 3-3, 4-2, 4-3, 4-4, 4-5, 4-5F, 4-6, 5-1, 5-2, 5-4, 5-5, 8-2, 8-3, 8-4, 8-5, 8-6, 8-7
G3d	test a conjecture using basic constructions made with a compass and straightedge or technology.	<i>Glencoe Geometry</i> 4-4, 4-5, 4-5F, 8-7
Spatial Relationships		
G4	Construct right triangles, equilateral triangles, parallelograms, trapezoids, rectangles, rhombuses, squares and kites, using compass and straightedge or dynamic geometry software.	<i>Glencoe Geometry</i> 4-5F, 4-6, 8-4, 8-5, 8-5F, 8-6, 10-3
G5	Construct congruent figures and similar figures using tools, such as compass, straightedge, and protractor or dynamic geometry software.	<i>Glencoe Geometry</i> 4-4, 4-5, 6-3
Transformation and Symmetry		
G6	Identify the reflection and rotation symmetries of two- and three-dimensional figures.	<i>Glencoe Geometry</i> 9-1, 9-3, 12-1
G7	Perform reflections and rotations using compass and straightedge constructions and dynamic geometry software.	<i>Glencoe Geometry</i> 9-1, 9-3
G8	Derive coordinate rules for translations, reflections and rotations of geometric figures in the coordinate plane.	<i>Glencoe Geometry</i> 9-1, 9-2, 9-3, 9-7
G9	Show and describe the results of combinations of translations, reflections and rotations (compositions); e.g., perform compositions and specify the result of a composition as the outcome of a single motion, when applicable.	<i>Glencoe Geometry</i> 9-2, 9-3
Visualization and Geometric Models		
G10	Solve problems involving chords, radii and arcs within the same circle.	<i>Glencoe Geometry</i> 10-3
Standard 4 Patterns, Functions and Algebra		
Use Patterns, Relations, and Functions		
P1	Define function formally and with $f(x)$ notation.	<i>Glencoe Algebra 1</i> 4-6
P2	Describe and compare characteristics of the following families of functions: square root, cubic, absolute value and basic trigonometric functions; e.g., general shape, possible number of roots, domain and range.	
Use Algebraic Representations		
P3	Solve equations and formulas for a specified variable; e.g., express the base of a triangle in terms of the area and height.	<i>Glencoe Geometry</i> 11-2
P4	Use algebraic representations and functions to describe and generalize geometric properties and relationships.	<i>Glencoe Geometry</i> 1-3, 1-6, 3-6, 4-6, 6-3, 8-1, 10-2
P5	Solve simple linear and nonlinear equations and inequalities having square roots as coefficients and solutions.	<i>Glencoe Algebra 1</i> 3-4, 10-3
P6	Solve equations and inequalities having rational expressions as coefficients and solutions.	<i>Glencoe Algebra 1</i> 3-4, 3-5

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P7	Solve systems of linear inequalities.	<i>Glencoe Algebra 1</i> 7-5
P8	Graph the quadratic relationship that defines circles.	<i>Glencoe Geometry</i> 10-8
P9	Recognize and explain that the slopes of parallel lines are equal and the slopes of perpendicular lines are negative reciprocals.	<i>Glencoe Geometry</i> 3-3
P10	Solve real-world problems that can be modeled using linear, quadratic, exponential, or square root functions.	<i>Glencoe Algebra 1</i> 4-5, 10-1, 10-5, 11-3F
P11	Solve real-world problems that can be modeled, using systems of linear equations and inequalities.	<i>Glencoe Algebra 1</i> 7-1, 7-2, 7-3, 7-4, 7-5
Analyze Change		
P12	Describe the relationship between slope of a line through the origin and the tangent function of the angle created by the line and the positive x -axis.	<i>Glencoe Geometry</i> 7-4
Standard 5 Data Analysis and Probability		
Data Collection		
D1	Describe measures of center and the range verbally, graphically and algebraically.	<i>Glencoe Algebra 1</i> 2-5, 13-4
D2	Represent and analyze bivariate data using appropriate graphical displays (scatterplots, parallel box-and-whisker plots, histograms with more than one set of data, tables, charts, spreadsheets) with and without technology.	<i>Glencoe Algebra 1</i> 5-7, 5-7F, 13-4, 13-5
D3	Display bivariate data where at least one variable is categorical.	<i>Glencoe Algebra 1</i> 13-3
D4	Identify outliers on a data display; e.g., use interquartile range to identify outliers on a box-and-whisker plot.	<i>Glencoe Algebra 1</i> 13-5
Statistical Methods		
D5	Provide examples and explain how a statistic may or may not be an attribute of the entire population; e.g., intentional or unintentional bias may be present.	<i>Glencoe Algebra 1</i> 13-1
D6	Interpret the relationship between two variables using multiple graphical displays and statistical measures; e.g., scatterplots, parallel box-and-whisker plots, and measures of center and spread.	<i>Glencoe Algebra 1</i> 5-7, 13-4, 13-5
Probability		
D7	Model problems dealing with uncertainty with area models (geometric probability).	<i>Glencoe Geometry</i> 11-5
D8	Differentiate and explain the relationship between the probability of an event and the odds of an event, and compute one given the other.	<i>Glencoe Algebra 1</i> 2-6

F = Follow-Up Lesson, PS = Prerequisite Skill