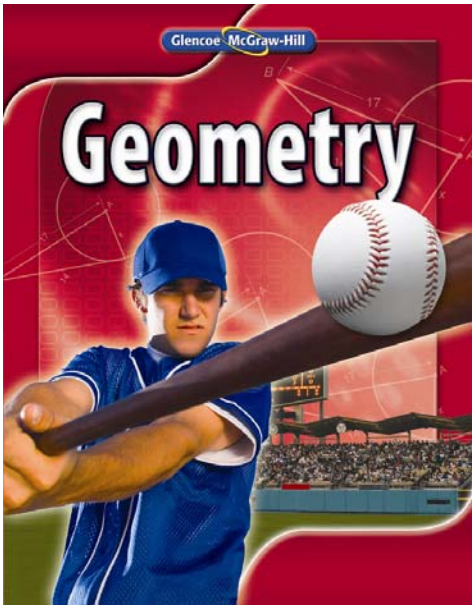
Glencoe

Academic Content Standards
Grade Ten

Ohio



Geometry

Correlation Between the Ohio Academic Content Standards, Grade 10, and Glencoe's Ohio Edition of *Geometry* © 2010

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

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
Number, Number Sense and Operations Standard			
1	Connect physical, verbal and symbolic representations of irrational numbers; e.g., construct $\sqrt{2}$ as a hypotenuse or on a number line.	5-5, 8-1, 8-2, 8-3, 10-1	360-366, 531-539, 541-549, 552-560, 683-691
2	Explain the meaning of the *n*th root.	**0-9**	P19-P20
3	Use factorial notation and computations to represent and solve problem situations involving arrangements.	**13-2**	906-914
4	Approximate the *n*th root of a given number greater than zero between consecutive integers when *n* is an integer; e.g., the 4th root of 50 is between 2 and 3.	**0-9**	P19-P20
Measurement Standard			
1	Explain how a small error in measurement may lead to a large error in calculated results.	**Extend 1-2**	22-24
2	Calculate relative error.	**Extend 1-2**	22-24
3	Explain the difference between absolute error and relative error in measurement.	**Extend 1-2**	22-24

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4	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.	**Extend 1-2**	22-24
5	Determine the measures of central and inscribed angles and their associated major and minor arcs.	**10-2, 10-4**	692-700, 709-716
Geometry and Spatial Sense Standard			
1a	Formally define and explain key aspects of geometric figures, including: interior and exterior angles of polygons.	**Explore 4-2, 4-2, 6-1, Extend 6-1**	243, 244-252, 389-397, 398
1b	Formally define and explain key aspects of geometric figures, including: segments related to triangles (median, altitude, midsegment).	**Explore 5-1, 5-1, Explore 5-2, 5-2, 7-4**	321, 322-331, 332, 333-341, 484-493
1c	Formally define and explain key aspects of geometric figures, including: points of concurrency related to triangles (centroid, incenter, orthocenter, circumcenter).	**5-1, 5-2**	322-331, 333-341
1d	Formally define and explain key aspects of geometric figures, including: circles (radius, diameter, chord, circumference, major arc, minor arc, sector, segment, inscribed angle).	**10-1, 10-2, 10-3, 10-4, 11-3**	683-691, 692-700, 701-708m, 709-716, 782-788
2	Recognize and explain the necessity for certain terms to remain undefined, such as point, line and plane.	**1-1**	5-12
3a	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: prove the Pythagorean Theorem.	2-1, 2-4, **8-2**	89-96, 115-123, 541-549
3b	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: prove theorems involving triangle similarity and congruence.	2-1, 2-4, **4-3, 4-4, Extend 4-4, 4-5, Extend 4-5, 4-6, 4-7, 4-8, 7-3, 7-4, 7-5, 7-6**	89-96, 115-123, 253-261, 262-270, 271, 273-280, 281, 283-291, 294-300, 301-307, 474-483, 484-493, 495-502, 505-511

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
3c	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: prove theorems involving properties of lines, angles, triangles and quadrilaterals.	2-1, 2-4, 2-5, 2-6, **2-7, 2-8, 3-2, 3-5, 3-6, 4-2, 5-1, 5-2, 5-3, 5-4, 5-6, 6-2, 6-3, 6-4, 6-5, 6-6**	89-96, 115-123, 125-132, 134-141, 142-148, 149-157, 178-184, 205-212, 213-222, 244-252, 322-331, 333-341, 342-349, 351-358, 367-376, 399-407, 409-417, 419-425, 435-444
3d	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: test a conjecture using basic constructions made with a compass and straightedge or technology.	2-1, 2-4, **Explore 3-2, 4-4, Extend 4-4, 4-5**	89-96, 115-123, 177, 262-270, 271, 273-280
4	Construct right triangles, equilateral triangles, parallelograms, trapezoids, rectangles, rhombuses, squares and kites, using compass and straightedge or dynamic geometry software.	Extend 4-4, Extend 4-5, 4-6, Explore 6-3, 6-3, 6-4, 6-5	271, 281, 283-291, 408, 409-417, 419-425, 426-434
5	Construct congruent figures and similar figures using tools, such as compass, straightedge, and protractor or dynamic geometry software.	4-4, Extend 4-4, 4-5, Extend 4-5, 4-6, Explore 4-7, 7-4	262-270, 271, 273-280, 281-282, 283-291, 292-293, 484-493
6	Identify the reflection and rotation symmetries of two- and three dimensional figures.	**9-5**	653-659
7	Perform reflections and rotations using compass and straightedge constructions and dynamic geometry software.	**9-1, 9-3, Explore 9-4**	615-623, 632-638, 640
8	Derive coordinate rules for translations, reflections and rotations of geometric figures in the coordinate plane.	**9-1, 9-2, Explore 9-3, 9-3**	615-623, 624-630, 631, 632-638
9	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.	**Explore 9-4, 9-4**	640, 641-649
10	Solve problems involving chords, radii and arcs within the same circle.	**10-1, 10-2, 10-3**	683-691, 692-700, 701-708
Patterns, Functions and Algebra Standard			
1	Define function formally and with $f(x)$ notation.	*Algebra 1 1-7; Algebra 2 2-1*	45-52, 61-67

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
2	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.	*Algebra 1 4-7, Extend 4-7, Extend 9-5, 10-1, Extend 10-1; Algebra 2 2-6, 6-3, 7-3, 13-7*	261-268, 269, 565, 605-610, 611, 101-107, 348-355, 424-430, 855-861
3	Solve equations and formulas for a specified variable; e.g., express the base of a triangle in terms of the area and height.	11-1, **Concepts and Skills 1**	763-770, 1012
4	Use algebraic representations and functions to describe and generalize geometric properties and relationships.	1-3, 3-6, 7-1, 7-2, 7-3, 7-5, 7-6, 7-7, 10-2	25-35, 213-222, 457-463, 465-473, 474-483, 495-502, 505-511, 512-517, 692-700
5	Solve simple linear and nonlinear equations and inequalities having square roots as coefficients and solutions.	5-5, 8-1, 8-2, 8-3	360-366, 531-539, 541-549, 552-560
6	Solve equations and inequalities having rational expressions as coefficients and solutions.	Explore 5-5	359
7	Solve systems of linear inequalities.	*Algebra 1 6-8; Algebra 2 3-3*	382-386, 151-157
8	Graph the quadratic relationship that defines circles.	**Explore 10-8, 10-8**	743, 744-749
9	Recognize and explain that the slopes of parallel lines are equal and the slopes of perpendicular lines are negative reciprocals.	**3-3, 3-4, Extend 3-4**	186-194, 196-203, 204
10	Solve real-world problems that can be modeled using linear, quadratic, exponential or square root functions.	*Algebra 1 3-1, 3-5, 9-1, 9-6, 10-1; Algebra 2 2-2, 5-1, 7-3, 8-1*	153-160, 187-193, 525-535, 567-572, 605-610, 69-74, 249-257, 424-430, 475-482
11	Solve real-world problems that can be modeled, using systems of linear equations and inequalities.	*Algebra 1 6-1, 6-2, 6-3, 6-4, 6-5, 6-7, 6-8; Algebra 2 3-1, 3-2, 3-3*	333-339, 342-347, 348-354, 355-360, 362-367, 376-381, 382-386, 135-141, 143-150, 151-157
12	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.	8-4	562-571
Data Analysis and Probability Standard			
1	Describe measures of center and the range verbally, graphically and algebraically.	**Concept and Skills 6**	1020-1021

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
2	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.	**Concept and Skills 7**	1022-1023
3	Display bivariate data where at least one variable is categorical.	Concept and Skills 7	1022-1023
4	Identify outliers on a data display; e.g., use interquartile range to identify outliers on a box-and-whisker plot.	*Algebra 1 0-13; Algebra 2 Concepts and Skills 8*	P40-P43, 1005-1006
5	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.	*Algebra 1 12-3; Algebra 2 12-2*	756-762, 752-758
6	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.	**Concept and Skills 7**	1022-1023
7	Model problems dealing with uncertainty with area models (geometric probability).	**13-3**	915-921
8	Differentiate and explain the relationship between the probability of an event and the odds of an event, and compute one given the other.	**0-3**	P8-P9