

GLENCOE CORRELATION

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Contemporary Mathematics in Context,

Course 2 (Parts A & B) © 1998/2003

Ohio Academic Content Standards for Mathematics, Grade 10

OBJECTIVES	PAGE REFERENCES
Number, Number Sense and Operations Standard	
Students demonstrate number sense including an understanding of number systems and operations, and how they relate to one another. Students compute fluently and make reasonable estimates using paper and pencil, technology-supported and mental methods.	
Number and Number Systems	
1. Connect physical, verbal and symbolic representations of irrational numbers; e.g., construct $\sqrt{2}$ as a hypotenuse or on a number line.	SE: 290–293, 295–298
Meaning of Operations	
2. Explain the meaning of the n th root.	SE: 298–300, 300–302, 303–310
Computation and Estimation	
3. Use factorial notation and computations to represent and solve problem situations involving arrangements.	The opportunity to address this objective is available. See the following: SE: 494
4. 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.	The opportunity to address this objective is available. See the following: SE: 298–300, 302, 305, 308, 309
Measurement Standard	
Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies.	
Use Measurement Techniques and Tools	
1. Explain how a small error in measurement may lead to a large error in calculated results.	The opportunity to address this objective is available. See the following: SE: 400–402, 545–547
2. Calculate relative error.	This objective falls outside the scope of <i>Glencoe Contemporary Math in Context, Course 2</i> .
3. Explain the difference between absolute error and relative error in measurement.	This objective falls outside the scope of <i>Glencoe Contemporary Math in Context, Course 2</i> .
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.	The opportunity to address this objective is available. See the following: SE: 400–402, 417, 545–547
5. Determine the measures of central and inscribed angles and their associated major and minor arcs.	The opportunity to address this objective is available. See the following: SE: 421, 430

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Geometry and Spatial Sense Standard	
Students identify, classify, compare and analyze characteristics, properties and relationships of one-, two-, and three-dimensional geometric figures and objects. Students use spatial reasoning, properties of geometric objects and transformations to analyze mathematical situations and solve problems.	
Characteristics and Properties	
1. Formally define and explain key aspects of geometric figures, including:	
a. interior and exterior angles of polygons;	SE: 385
b. segments related to triangles (median, altitude, midsegment);	The opportunity to address this objective is available. See the following: SE: 384–388, 389–390
c. points of concurrency related to triangles (centroid, incenter, orthocenter, circumcenter);	The opportunity to address this objective is available. See the following: SE: 108
d. circles (radius, diameter, chord, circumference, major arc, minor arc, sector, segment, inscribed angle).	SE: 304–305, 412–418, 419–423, 424–430
2. Recognize and explain the necessity for certain terms to remain undefined, such as point, line and plane.	The opportunity to address this objective is available. See the following: SE: 81–86, 90–95, 97–101, 102–105
3. 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:	
a. prove the Pythagorean Theorem;	The opportunity to address this objective is available. See the following: SE: 83, 290 (See also Course 1, Unit 5.)
b. prove theorems involving triangle similarity and congruence;	The opportunity to address this objective is available. See the following: SE: 144, 395–396
c. prove theorems involving properties of lines, angles, triangles and quadrilaterals;	The opportunity to introduce this objective is available. See the following: SE: 87–88, 165, 373–376, 395–399
d. test a conjecture using basic constructions made with a compass and straightedge or technology.	This objective falls outside the scope of <i>Glencoe Contemporary Math in Context, Course 2</i> . (See Course 3, Unit 4.)
Spatial Relationships	
4. Construct right triangles, equilateral triangles, parallelograms, trapezoids, rectangles, rhombuses, squares and kites, using compass and straightedge or dynamic geometry software.	The opportunity to address this objective is available. See the following: SE: 80–81, 87–88, 91, 92, 94, 95–96, 165, 395–396
5. Construct congruent figures and similar figures using tools, such as compass, straightedge, and protractor or dynamic geometry software.	The opportunity to address this objective is available. See the following: SE: 111–119, 120–125, 373–376, 395–396

OBJECTIVES	PAGE REFERENCES
Transformation and Symmetry	
6. Identify the reflection and rotation symmetries of two- and three-dimensional figures.	SE: 109–110, 111–119, 120–125
7. Perform reflections and rotations using compass and straightedge constructions and dynamic geometry software.	SE: 111–119, 120–125, 126–132, 133–143, 144–148, 149–153, 154–156, 159–164
8. Derive coordinate rules for translations, reflections and rotations of geometric figures in the coordinate plane.	SE: 111–119, 120–125, 126–132, 133–143, 144–148, 149–153, 154–156, 159–164
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.	SE: 138–143, 144–148, 149–156, 157–164, 166–168
Visualization and Geometric Models	
10. Solve problems involving chords, radii and arcs within the same circle.	The opportunity to address this objective is available. See the following: SE: 419–423, 428–430
Patterns, Functions and Algebra Standard Students use patterns, relations and functions to model, represent and analyze problem situations that involve variable quantities. Students analyze, model and solve problems using various representations such as tables, graphs and equations.	
Use Patterns, Relations and Functions	
1. Define function formally and with $f(x)$ notation.	The opportunity to address this objective is available. See the following: SE: 238–241 (See also Course 3, Unit 3.)
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.	SE: 238–241, 242–246, 253–256, 257–258, 274, 278–279, 280–281, 286, 287, 310, 314, 317, 436–441, 442–449
Use Algebraic Representations	
3. Solve equations and formulas for a specified variable; e.g., express the base of a triangle in terms of the area and height.	SE: 260, 264, 278–279, 280–281, 290 (See also Course 3, Units 1 and 3.)
4. Use algebraic representations and functions to describe and generalize geometric properties and relationships.	SE: 80–86, 87–89, 90–96, 97–101, 102–108, 109–119, 120–126, 127–132, 133–137, 138–143, 144–148, 149–154, 155–156, 157–164, 165–168, 368–372, 373–376, 379–380, 390, 391, 393, 413–416
5. Solve simple linear and nonlinear equations and inequalities having square roots as coefficients and solutions.	SE: 241–246, 278–279, 280–281, 282–288

OBJECTIVES	PAGE REFERENCES
6. Solve equations and inequalities having rational expressions as coefficients and solutions.	SE: 73, 212-214, 266-271, 278–280, 282–288
7. Solve systems of linear inequalities.	SE: 60–65, 66–74, 77, 98–101, 168
8. Graph the quadratic relationship that defines circles.	SE: 304-305
9. Recognize and explain that the slopes of parallel lines are equal and the slopes of perpendicular lines are negative reciprocals.	SE: 88-90, 91-92, 96, 104–105
10. Solve real-world problems that can be modeled using linear, quadratic, exponential or square root functions.	SE: 59–62, 63–65, 66–74, 234-238, 241-249, 265-271, 271-273, 278–280, 282–288, 290-291, 307, 311-317
11. Solve real-world problems that can be modeled, using systems of linear equations and inequalities.	SE: 59–62, 63–65, 66–74
Analyze Change	
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.	SE: 445
Data Analysis and Probability Standard Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data.	
Data Collection	
1. Describe measures of center and the range verbally, graphically and algebraically.	SE: 462–465, 486-491, 521-523, 524-526
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.	SE: 170-178, 179-184, 190-195, 200-205, 209-210
3. Display bivariate data where at least one variable is categorical.	This objective falls outside the scope of <i>Glencoe Contemporary Math in Context, Course 2</i> . (See Course 1, Unit 1)
4. Identify outliers on a data display; e.g., use interquartile range to identify outliers on a box-and-whisker plot.	This objective falls outside the scope of <i>Glencoe Contemporary Math in Context, Course 2</i> . (See Course 1, Unit 1)
Statistical Methods	
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.	The opportunity to address this objective is available. See the following: SE: 495

OBJECTIVES	PAGE REFERENCES
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.	The opportunity to address this objective is available. See the following: SE: 190, 191, 193 (See also Course 1, Unit 1.)
Probability	
7. Model problems dealing with uncertainty with area models (geometric probability).	SE: 472-474, 479
8. Differentiate and explain the relationship between the probability of an event and the odds of an event, and compute one given the other.	The opportunity to address this objective is available. See the following: SE: 492, 508–509, 511–512