

GLENCOE CORRELATION

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Contemporary Mathematics in Context, Course 1 (Parts A & B) © 1998/2003

Ohio Academic Content Standards for Mathematics, Grade 9

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. Identify and justify whether properties (closure, identity, inverse, commutative and associative) hold for a given set and operations; e.g., even integers and multiplication.	SE: 224–225, 239, 459
2. Compare, order and determine equivalent forms for rational and irrational numbers.	The opportunity to address this objective is available. See the following: SE: 181-186
Meaning of Operations	
3. Explain the effects of operations such as multiplication or division, and of computing powers and roots on the magnitude of quantities.	The opportunity to address this objective is available. See the following: SE: 421–423, 424–426, 427–431, 440–442, 443–444, 445–447, 455–457
Computation and Estimation	
4. Demonstrate fluency in computations using real numbers.	The opportunity to address this objective is available. See the following: SE: 66–67, 68–73, 122–125, 127–131
5. Estimate the solutions for problem situations involving square and cube roots.	The opportunity to address this objective is available. See the following: SE: 72, 362-370, 372-374, 379, 417 (See also Course 2, Unit 4.)
Measurement Standard	
Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies.	
Measurement Units	
1. Convert rates within the same measurement system; e.g., miles per hour to feet per second; kilometers per hour to meters per second.	The opportunity to address this objective is available. See the following: SE: 66–67, 367, 425 (See also Course 2, Unit 6.)
Use Measurement Techniques and Tools	
2. Use unit analysis to check computations involving measurement.	The opportunity to address this objective is available. See the following: SE: 66–67
3. Use the ratio of lengths in similar two-dimensional figures or three-dimensional objects to calculate the ratio of their areas or volumes respectively.	The opportunity to address this objective is available. See the following: SE: 347–354, 373–376, 377–382 (See also Course 2, Units 4 and 6.)

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4. Use scale drawings and right triangle trigonometry to solve problems that include unknown distances and angle measures.	SE: 359, 362–366, 369–370 (See also Course 2, Unit 6.)
5. Solve problems involving unit conversion for situations involving distances, areas, volumes and rates within the same measurement system.	The opportunity to address this objective is available. See the following: SE: 66–67, 367, 425
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. Define the basic trigonometric ratios in right triangles: sine, cosine and tangent.	This objective falls outside the scope of <i>Glencoe Contemporary Math in Context, Course 1</i> .
2. Apply proportions and right triangle trigonometric ratios to solve problems involving missing lengths and angle measures in similar figures.	The opportunity to address this objective is available. See the following: SE: 362–366, 369–370
Visualization and Geometric Models	
3. Analyze two-dimensional figures in a coordinate plane; e.g., use slope and distance formulas to show that a quadrilateral is a parallelogram.	The opportunity to address this objective is available. See the following: SE: 357–358, 359 (See also Course 2, Unit 2.)
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 with ordered pairs in which each domain element is assigned exactly one range element.	The opportunity to address this objective is available. See the following: SE: 130–131, 137, 146 (See also Course 3, Unit 3.)
2. Generalize patterns using functions or relationships (linear, quadratic and exponential), and freely translate among tabular, graphical and symbolic representations.	SE: 141-143, 144-146, 147-156, 181–187, 188–193, 194–198, 199–201, 202–210, 421–423, 424–426, 427–431, 439-442, 443-445, 445-448, 449-454, 461–464, 465–467, 468–476, 477-481
3. Describe problem situations (linear, quadratic and exponential) by using tabular, graphical and symbolic representations.	SE: 130–131, 136–137, 141-143, 147-156, 181–187, 188–193, 194–198, 199–201, 202–210, 421–423, 424–426, 427–431, 439-442, 443-446, 446-448, 449-454, 461–464, 465–467, 468–476,
4. Demonstrate the relationship among zeros of a function, roots of equations, and solutions of equations graphically and in words.	The opportunity to address this objective is available. See the following: SE: 130–131, 136–137, 144-146, 150, 181–187, 188–193, 194–198, 199–201, 202–210

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5. Describe and compare characteristics of the following families of functions: linear, quadratic and exponential functions; e.g., general shape, number of roots, domain, range, rate of change, maximum or minimum.	SE: 48–49, 144–146, 180–187, 188–193, 194–198, 199–201, 202–210, 219, 432–436
Use Algebraic Representations	
6. Write and use equivalent forms of equations and inequalities in problem situations; e.g., changing a linear equation to the slope-intercept form.	SE: 194–199, 211–215, 216–222, 223–226, 233–237, 238–242, 243–248
7. Use formulas to solve problems involving exponential growth and decay.	SE: 420–423, 424–426, 427–431, 432–438, 439–442, 443–444, 445–447, 448–454, 455–456, 457–460
8. Find linear equations that represent lines that pass through a given set of ordered pairs, and find linear equations that represent lines parallel or perpendicular to a given line through a specific point.	SE: 170–180, 182–187, 188–193, 194–198, 199–201, 202–210
9. Solve and interpret the meaning of 2 by 2 systems of linear equations graphically, by substitution and by elimination, with and without technology.	SE: 211–214, 218, 219, 226–228, 231, 246, 248 (See also Course 2, Units 1 and 2.)
10. Solve quadratic equations with real roots by factoring, graphing, using the quadratic formula and with technology.	The opportunity to address this objective is available. See the following: SE: 143, 144–146, 147–151 (See also Course 2, Unit 4 and Course 3, Unit 3.)
11. Add, subtract, multiply and divide monomials and polynomials (division of polynomials by monomials only).	This objective falls outside the scope of Glencoe <i>Contemporary Math in Context, Course 1</i> . (See Course 2, Unit 4, Course 3, Unit 3, and Course 4, Unit 6.)
12. Simplify rational expressions by eliminating common factors and applying properties of integer exponents.	The opportunity to address this objective is available. See the following: SE: 176, 205, 425, 433, 480, 481, 494–495, 498–501, 502–505, 508, 510
Analyze Change	
13. Model and solve problems involving direct and inverse variation using proportional reasoning.	The opportunity to address this objective is available. See the following: SE: 176–177
14. Describe the relationship between slope and the graph of a direct variation and inverse variation.	The opportunity to address this objective is available. See the following: SE: 159–160, 170, 172, 182–185, 189, 369
15. Describe how a change in the value of a constant in a linear or quadratic equation affects the related graphs.	SE: 144–146, 181–187, 188–194, 199–201, 205–206

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<p>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.</p>	
<p>Data Collection</p>	
<p>1. Classify data as univariate (single variable) or bivariate (two variables) and as quantitative (measurement) or qualitative (categorical) data.</p>	<p>The opportunity to address this objective is available. See the following: SE: 7-12, 31, 74-78, 165-167, 195-198, 461-464, 465-467, 468-476</p>
<p>2. Create a scatterplot for a set of bivariate data, sketch the line of best fit, and interpret the slope of the line of best fit.</p>	<p>SE: 165-167, 169, 170-174, 195-197, 202-204, 461-464, 465-467, 468-476</p>
<p>Statistical Methods</p>	
<p>3. Analyze and interpret frequency distributions based on spread, symmetry, skewness, clusters and outliers.</p>	<p>SE: 16-18, 19-23, 24-31, 31-37, 38-47, 48-51, 52-54, 55-62, 63-65</p>
<p>4. Describe and compare various types of studies (survey, observation, experiment), and identify possible misuses of statistical data.</p>	<p>The opportunity to address this objective is available. See the following: SE: 2-6, 24-30, 203, 347-354, 448-454, 468-476, 505-512</p>
<p>5. Describe characteristics and limitations of sampling methods, and analyze the effects of random versus biased sampling; e.g., determine and justify whether the sample is likely to be representative of the population.</p>	<p>The opportunity to address this objective is available. See the following: SE: 499-502, 505-512 (See also Course 3, Unit 2.)</p>
<p>6. Make inferences about relationships in bivariate data, and recognize the difference between evidence of relationship (correlation) and causation.</p>	<p>SE: 75, 89, 165-167, 195-197, 461-464, 465-467, 468-476 (See also Course 2, Unit 3.)</p>
<p>Probability</p>	
<p>7. Use counting techniques and the Fundamental Counting principle to determine the total number of possible outcomes for mathematical situations.</p>	<p>The opportunity to address this objective is available. See the following: SE: 513-518, 519-525</p>
<p>8. Describe, create and analyze a sample space and use it to calculate probability.</p>	<p>SE: 491-497, 513-518, 519-525</p>
<p>9. Identify situations involving independent and dependent events, and explain differences between and common misconceptions about probabilities associated with those events.</p>	<p>The opportunity to address this objective is available. See the following: SE: 484-490, 491-497, 513-518</p>
<p>10. Use theoretical and experimental probability, including simulations or random numbers, to estimate probabilities and to solve problems dealing with uncertainty; e.g., compound events, independent events, simple dependent events.</p>	<p>SE: 484-490, 491-497, 499-504, 505-512</p>