

Ohio Academic Content Standards, Grade 11 Indicators, Correlated to *Glencoe Algebra 2*

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

| Academic Standards | | Student Edition Lesson(s) |
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| Number, Number Sense and Operations Standard | | |
| 1 | Determine what properties hold for matrix addition and matrix multiplication; e.g., use examples to show addition is commutative and when multiplication is not commutative. | 4-2, 4-3 |
| 2 | Determine what properties hold for vector addition and multiplication, and for scalar multiplication. | <i>AMC</i> 8-2 |
| 3 | Represent complex numbers on the complex plane. | 5-9 |
| 4 | Use matrices to represent given information in a problem situation. | 4-1, 4-2, 4-3, 4-4, 4-8 |
| 5 | Model, using the coordinate plane, vector addition and scalar multiplication. | <i>AMC</i> 8-2 |
| 6 | Compute sums, differences and products of matrices using paper and pencil calculations for simple cases, and technology for more complicated cases. | 4-1, 4-2, 4-3 , 4-7, 4-8 |
| 7 | Compute sums, differences, products and quotients of complex numbers. | 5-9 |
| 8 | Use fractional and negative exponents as optional ways of representing and finding solutions for problem situations; e.g., $27^{2/3} = (27^{1/3})^2 = 9$. | 5-1, 5-7, 7-3 |
| 9 | Use vector addition and scalar multiplication to solve problems. | <i>AMC</i> 8-1, 8-2 |
| Measurement Standard | | |
| 1 | Determine the number of significant digits in a measurement. | <i>Glencoe Geometry</i> 1-2 |
| 2 | Use radian and degree angle measures to solve problems and perform conversions as needed. | 13-1, 13-2 , 13-3 |
| 3 | Derive a formula for the surface area of a cone as a function of its slant height and the circumference of its base. | <i>Glencoe Geometry</i> 12-6 |
| 4 | Calculate distances, areas, surface areas and volumes of composite three-dimensional objects to a specified number of significant digits. | 8-1; <i>Glencoe Geometry</i> 1-3, 3-6, 11-2, 11-3, 11-4, 12-2 , 12-3, 12-4, 12-5, 12-6, 12-7, 13-1, 13-2 , 13-3, 13-4 |
| 5 | Solve real-world problems involving area, surface area, volume and density to a specified degree of precision. | 4-5, 9-3, 10-2F, 13-4 <i>Glencoe Algebra 1</i> 8-3, 9-5, 12-4, 12-5 <i>Glencoe Geometry</i> 1-3, 3-6, 11-2, 11-3, 11-4 , 12-2, 12-3, 12-4, 12-5, 12-6, 12-7, 13-1, 13-2 , 13-3, 13-4 |
| Geometry and Spatial Sense Standard | | |
| 1 | Use polar coordinates to specify locations on a plane. | <i>AMC</i> 9-1 |
| 2 | Represent translations using vectors. | <i>AMC</i> 8-8 |
| 3 | Describe multiplication of a vector and a scalar graphically and algebraically, and apply to problem situations. | <i>AMC</i> 8-1, 8-2 |

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| 4 | Use trigonometric relationships to determine lengths and angle measures; i.e., Law of Sines and Law of Cosines. | 13-1, 13-4, 13-5 |
| 5 | Identify, sketch and classify the cross sections of three-dimensional objects. | 8-2, 8-6 |
| Patterns, Functions and Algebra Standard | | |
| 1 | Identify and describe problem situations involving an iterative process that can be represented as a recursive function; e.g., compound interest. | 11-6P, 11-6 |
| 2 | Translate a recursive function into a closed form expression or formula for the n th term to solve a problem situation involving an iterative process; e.g., find the value of an annuity after 7 years. | 11-6P, 11-6 |
| 3 | Describe and compare the characteristics of the following families of functions: quadratics with complex roots, polynomials of any degree, logarithms, and rational functions; e.g., general shape, number of roots, domain and range, asymptotic behavior. | 6-2, 6-6P, 6-6, 7-1, 9-3, 9-3F, 9-5, 10-1, 10-2 |
| 4 | Identify the maximum and minimum points of polynomial, rational and trigonometric functions graphically and with technology. | 6-1, 7-2, 14-1, 14-2 |
| 5 | Identify families of functions with graphs that have rotation symmetry or reflection symmetry about the y -axis, x -axis or $y = x$. | 2-6, 6-1, 6-6P, 14-1 |
| 6 | Represent the inverse of a function symbolically and graphically as a reflection about $y = x$. | 7-8, 10-2, 13-7 |
| 7 | Model and solve problems with matrices and vectors. | 4-1, 4-2, 4-3, 4-4, 4-7, 4-8, 4-8F <i>AMC Chapter 8</i> |
| 8 | Solve equations involving radical expressions and complex roots. | 5-8, 5-8F, 5-9, 7-3 |
| 9 | Solve 3 by 3 systems of linear equations by elimination and using technology, and interpret graphically what the solution means (a point, line, plane, or no solution). | 3-5, 4-8F |
| 10 | Describe the characteristics of the graphs of conic sections. | 8-2, 8-3, 8-4, 8-5, 8-6, 8-6F |
| 11 | Describe how a change in the value of a constant in an exponential, logarithmic or radical equation affects the graph of the equation. | 10-1, 10-2; <i>Glencoe Algebra 1 11-3F</i> |
| Data Analysis and Probability Standard | | |
| 1 | Design a statistical experiment, survey or study for a problem; collect data for the problem; and interpret the data with appropriate graphical displays, descriptive statistics, concepts of variability, causation, correlation and standard deviation. | 10-1P, 12-8F, 12-9F |
| 2 | Describe the role of randomization in a well-designed study, especially as compared to a convenience sample, and the generalization of results from each. | 12-9 |
| 3 | Describe how a linear transformation of univariate data affects range, mean, mode and median. | 12-6 |
| 4 | Create a scatterplot of bivariate data, identify trends, and find a function to model the data. | 2-5, 2-5F, 6-2F, 7-2F, 10-2F |
| 5 | Use technology to find the Least Squares Regression Line, the regression coefficient, and the correlation coefficient for bivariate data with a linear trend, and interpret each of these statistics in the context of the problem situation. | 2-5F, 6-2F |

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| 6 | Use technology to compute the standard deviation for a set of data, and interpret standard deviation in relation to the context or problem situation. | 12-6 |
| 7 | Describe the standard normal curve and its general properties, and answer questions dealing with data assumed to be normal. | 12-7 |
| 8 | Analyze and interpret univariate and bivariate data to identify patterns, note trends, draw conclusions, and make predictions. | 2-5, 2-5F, 6-2F, 7-2F, 10-2F, 12-6, 12-7, 12-9, PS5, PS6, PS7, PS8 |
| 9 | Evaluate validity of results of a study based on characteristics of the study design, including sampling method, summary statistics and data analysis techniques. | 12-9, 12-9F |
| 10 | Understand and use the concept of random variable, and compute and interpret the expected value for a random variable in simple cases. | 12-3, 12-8F |
| 11 | Examine statements and decisions involving risk; e.g., insurance rates and medical decisions. | 12-3 |

P = Preview Lesson, F = Follow-Up Lesson, PS = Prerequisite Skill, AMC = *Glencoe Advanced Mathematical Concepts*