

**Elko County School District / High School Algebra II / 2008 Glencoe Text
(Sequence, Reference, and Resource Guide...REVISED FOR 2015 - 2016)**



Building on their work with linear, quadratic, and exponential functions, students extend their repertoire of functions to include polynomial, rational, and radical functions. Students work closely with the expressions that define the functions, and continue to expand and hone their abilities to model situations and to solve equations, including solving quadratic equations over the set of complex numbers and solving exponential equations using the properties of logarithms. The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

The nature and purpose of this document is to provide ECSD mathematics instructors with a guide to aid and assist in implementing the Common Core State Standards Algebra II course. Rather than being a day-to-day, section-by-section “scope and sequence”, this document will serve to **guide** the instructor on a reasonable **sequence** of instruction, provide **reference** to the Common Core State Standards as well as the current Elko County School District textbook, and provide a **guide** for **resources** for needed supplementation to the ECSD textbook.

Algebra II (2008 Glencoe Text) / Coverage by semester

1st Semester

REVIEW CONCEPTS

COMMON CORE CONCEPTS

5 WEEKS

- 1-1 Expressions and Formulas
- 1-2 Properties of Real Numbers
- 1-3 Solving Equations
- 1-4 Solving Absolute Value Equations
- 1-5 Solving Inequalities
- 1-6 Solving Compound and Absolute Value Inequalities

- 2-1 Relations and Functions
- 2-2 Linear Functions
- 2-3 Slope
- 2-4 Writing Linear Equations
- 2-5 Statistics: Using Scatter Plots
- 2-6 Special Functions
- 2-7 Graphing Inequalities

2 WEEKS

- 3-1 Solving Systems of Equations by Graphing
- 3-2 Solving Systems of Equations Algebraically
- 3-3 Solving Systems of Linear Inequalities by Graphing
- 3-4 Linear Programming

4 WEEKS

- 5-1 Graphing Quadratic Equations
- 5-2 Solving Quadratic Equations by Graphing
- 5-3 Solving Quadratic Equations by Factoring
- 5-4 Complex Numbers
- 5-5 Completing the Square
- 5-6 The Quadratic Formula and the Discriminant
- 5-7 Analyzing Graphs of Quadratic Functions
- 5-8 Graphing and Solving Quadratic Inequalities

3 WEEKS

- 6-1 Properties of Exponents
- 6-2 Operations with Polynomials
- 6-3 Dividing Polynomials
- 6-4 Polynomial Functions
- 6-5 Analyzing Graphs of Polynomial Functions
- 6-6 Solving Polynomial Equations
- 6-7 The Remainder and Factor Theorems
- 6-8 Roots and Zeros

2 WEEKS

- 7-1 Operations on Functions
- 7-2 Inverse Functions and Relations
- 7-3 Square Root Functions and Inequalities
- 7-4 n th Roots
- 7-5 Operations on Radical Expressions
- 7-6 Rational Exponents
- 7-7 Solving Radical Equations and Inequalities

End of 1st Semester

Algebra II (2008 Glencoe Text) / Coverage by semester

2nd Semester

REVIEW CONCEPTS

COMMON CORE CONCEPTS

4 WEEKS

- 8-1 Multiplying and Dividing Rational Expressions
- 8-2 Adding and Subtracting Rational Expressions
- 8-3 Graphing Rational Functions
- 8-4 Direct, Joint, and Inverse Variation
- 8-5 Classes of Functions
- 8-6 Solving Rational Equations and Inequalities

3 WEEKS

- 9-1 Exponential Functions
- 9-2 Logarithms and Logarithmic Functions
- 9-3 Properties of Logarithms
- 9-4 Common Logarithms
- 9-5 Base e and Natural Logarithms
- 9-6 Exponential Growth and Decay

3 WEEKS

- 11-1 Arithmetic Sequences
- 11-2 Arithmetic Series
- 11-3 Geometric Sequences
- 11-4 Geometric Series
- 11-6 Recursive and Special Sequences
- 11-7 The Binomial Theorem

2 WEEKS

12-1	The Counting Principle
12-2	Permutations and Combinations
12-3	Probability
12-4	Multiplying Probabilities
12-5	Adding Probabilities
12-6	Statistical Measures
12-7	The Normal Distribution
12-8	Exponential and Binomial Distribution
12-10	Sampling and Error

2 WEEKS

13-1	Right Triangle Trigonometry
13-2	Angles and Angle Measure
13-3	Trigonometric Functions of General Angles
13-6	Circular Functions
13-7	Inverse Trigonometric Functions

2 WEEKS

14-1	Graphing Trigonometric Functions
14-2	Translations of Trigonometric Graphs
14-3	Trigonometric Identities

End of 2nd Semester

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>1-1 Expressions and Formulas</p> <p>*Use the order of operations to evaluate expressions.</p> <p>*Use formulas.</p>			<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>1-2 Properties of Real Numbers</p> <p>*Classify real numbers.</p> <p>*Use the properties of real numbers to evaluate expressions.</p>			<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>1-3 Solving Equations</p> <p>*Translate verbal expressions into algebraic expressions and equations, and vice versa.</p> <p>*Solve equations using the properties of equality.</p>			<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>1-4 Solving Absolute Value Equations</p> <p>*Evaluate expressions involving absolute values.</p> <p>*Solve absolute value equations.</p>	<p>A.REI.11</p>		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>1-5 Solving Inequalities</p> <p>*Solve inequalities with one operation.</p> <p>*Solve multi-step inequalities.</p>			<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>1-6 Solving Compound and Absolute Value Inequalities</p> <p>*Solve compound inequalities.</p> <p>*Solve absolute value inequalities.</p>	<p>A.REI.11</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
			<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
			<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

<u>Section / Description / Objectives</u>	<u>Common Core State Standards</u>	<u>Supplemental Resources</u>	<u>Mathematical Practices</u>
<p>2-1 Relations and Functions</p> <p>*Analyze and graph relations.</p> <p>*Find functional values.</p>			<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>2-2 Linear Functions</p> <p>*Identify linear equations and functions.</p> <p>*Write linear equations in standard form and graph them.</p>			<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>2-3 Slope</p> <p>*Find and use the slope of a line.</p> <p>*Graph parallel and perpendicular lines.</p>			<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>2-4 Writing Linear Equations</p> <p>*Write an equation of a line given the slope and a point on the line.</p> <p>*Write an equation of a line parallel or perpendicular to a given line.</p>			<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>2-5 Statistics: Using Scatter Plots</p> <p>*Draw scatter plots.</p> <p>*Find and use prediction equations.</p>			<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>2-6 Special Functions</p> <p>*Identify and graph step, constant and identify functions.</p> <p>*Identify and graph absolute value and piecewise functions.</p>	<p>F.IF.7a, F.IF.7b</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>2-7 Graphing Inequalities</p> <p>*Graph inequalities.</p> <p>*Graph absolute value inequalities.</p>			<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
			<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

<u>Section / Description / Objectives</u>	<u>Common Core State Standards</u>	<u>Supplemental Resources</u>	<u>Mathematical Practices</u>
<p>3-1 Solving Systems of Equations by Graphing</p> <p>*Solve systems of linear equations by graphing.</p> <p>*Determine whether a system of linear equations is consistent and independent, consistent and dependent, or inconsistent.</p>			<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>3-2 Solving Systems of Equations Algebraically</p> <p>*Solve systems of linear equations using substitution.</p> <p>*Solve systems of linear equations using elimination.</p>			<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>3-3 Solving Systems of Linear Inequalities by Graphing</p> <p>*Solve systems of linear inequalities by graphing.</p> <p>*Determine the coordinates of the vertices of a region formed by the graph of a system of inequalities.</p>			<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>3-4 Linear Programming</p> <p>*Find the maximum and minimum values of a function over a region.</p> <p>*Solve real-world problems using linear programming.</p>	<p>A.CED.2, A.CED.3</p>		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>5-1 Graphing Quadratic Equations</p> <p>*Graph quadratic equations.</p> <p>*Find and interpret the maximum and minimum values of a quadratic function.</p>			<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>5-2 Solving Quadratic Equations by Graphing</p> <p>*Solve quadratic equations by graphing.</p> <p>*Estimate solutions of quadratic equations by graphing.</p>			<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>5-3 Solving Quadratic Equations by Factoring</p> <p>*Write quadratic equations in intercept form.</p> <p>*Solve quadratic equations by factoring.</p>	A.APR.3		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>5-4 Complex Numbers</p> <p>*Find square roots and perform operations with pure imaginary numbers.</p> <p>*Perform operations with complex numbers.</p>	N.CN.1, N.CN.2		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

<u>Section / Description / Objectives</u>	<u>Common Core State Standards</u>	<u>Supplemental Resources</u>	<u>Mathematical Practices</u>
<p>5-5 Completing the Square</p> <p>*Solve quadratic equations by using the square root property.</p> <p>*Solve quadratic equations by completing the square.</p>	<p>N.CN.7</p>		<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>5-6 The Quadratic Formula and the Discriminant</p> <p>*Solve quadratic equations by using the quadratic formula.</p> <p>*Use the discriminant to determine the number and type of roots of a quadratic equation.</p>	<p>N.CN.7</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>5-7 Analyzing Graphs of Quadratic Functions</p> <p>*Analyze quadratic functions of the form $y = a(x - h)^2 + k$.</p> <p>*Write a quadratic function in the form $y = a(x - h)^2 + k$.</p>	<p>A.CED.2, F.IF.4, F.IF.5</p> <p>*continued emphasis on the idea of function, domain, and range.</p>		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>5-8 Graphing and Solving Quadratic Inequalities</p> <p>*Graph quadratic inequalities in two variables.</p> <p>*Solve quadratic inequalities in one variable.</p>	<p>A.CED.1</p>		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>6-1 Properties of Exponents</p> <p>*Use properties of exponents to multiply and divide monomials.</p> <p>*Use expressions written in scientific notation.</p>	<p>A.SSE.1a, A.SSE.1b</p>		<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>6-2 Operations with Polynomials</p> <p>*Add and subtract polynomials.</p> <p>*Multiply polynomials.</p>	<p>A.APR.1</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>6-3 Dividing Polynomials</p> <p>*Divide polynomials using long division.</p> <p>*Divide polynomials using synthetic division.</p>	<p>A.APR.6</p>		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>6-4 Polynomial Functions</p> <p>*Evaluate polynomial functions.</p> <p>*Identify general shapes of graphs of polynomial functions.</p>	<p>A.APR.3, F.IF.4, F.IF.5, F.IF.7c</p>		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>6-5 Analyzing Graphs of Polynomial Functions</p> <p>*Graph polynomial functions and locate their zeros.</p> <p>*Find the relative maxima and minima of polynomial functions.</p>	<p>A.APR.3, F.IF.4, F.IF.5, F.IF.7c</p>		<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>6-6 Solving Polynomial Equations</p> <p>*Factor polynomials.</p> <p>*Solve polynomial equations by factoring.</p>	<p>A.APR.3</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>6-7 The Remainder and Factor Theorems</p> <p>*Evaluate functions using synthetic division.</p> <p>*Determine whether a binomial is a factor of a polynomial using synthetic substitution.</p>	<p>A.APR.2</p>		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>6-8 Roots and Zeros</p> <p>*Determine the number and type of roots for a polynomial equation.</p> <p>*Find the zeros of a polynomial function.</p>	<p>N.CN.9</p>		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>7-1 Operations on Functions</p> <p>*Find the sum, difference, product, and quotient of functions.</p> <p>*Find the composite of functions.</p>	<p>F.BF.1b</p>		<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>7-2 Inverse Functions and Relations</p> <p>*Find the inverse of a function or relation.</p> <p>*Determine whether two functions or relations are inverses.</p>	<p>F.BF.4a, F.BF.4b, F.BF.4c, F.BF.4d</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>7-3 Square Root Functions and Inequalities</p> <p>*Graph and analyze square root functions.</p> <p>*Graph square root inequalities.</p>	<p>F.IF.7b, F.BF.4d</p>		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>7-4 nth Roots</p> <p>*Simplify radicals.</p> <p>*Use a calculator to approximate radicals.</p>	<p>N.RN.1, N.RN.2</p>		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>7-5 Operations on Radical Expressions</p> <p>*Simplify radical expressions.</p> <p>*Add, subtract, multiply, and divide radical expressions.</p>			<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>7-6 Rational Exponents</p> <p>*Write expressions with rational exponents in radical form and vice versa.</p> <p>*Simplify expressions in exponential or radical form.</p>			<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>7-7 Solving Radical Equations and Inequalities</p> <p>*Solve equations containing radicals.</p> <p>*Solve inequalities containing radicals.</p>	A.REI.2		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
			<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>8.1 Multiplying and Dividing Rational Expressions</p> <p>*Simplify rational expressions.</p> <p>*Simplify complex fractions.</p>	<p>A.APR.6, A.APR.7</p>		<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>8.2 Adding and Subtracting Rational Expressions</p> <p>*Determine the LCM of polynomials.</p> <p>*Add and subtract rational expressions.</p>	<p>A.APR.7</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>8.3 Graphing Rational Functions</p> <p>*Determine the limitations on the domains and ranges of the graphs of rational functions.</p> <p>*Graph rational functions.</p>	<p>F.IF.4, F.IF.5, F.IF.7c, F.IF.7d</p>		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>8.4 Direct, Joint, and Inverse Variation</p> <p>*Recognize and solve direct and joint variation problems.</p> <p>*Recognize and solve inverse variation problems.</p>	<p>F.BF.1b, F.LE.1b</p>		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>8.5 Classes of Functions</p> <p>*Identify graphs as different types of functions.</p> <p>*Identify equations as different types of functions.</p>	<p>F.IF.7a, F.IF.7b</p>		<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>8.6 Solving Rational Equations and Inequalities</p> <p>*Solve rational equations.</p> <p>*Solve rational inequalities.</p>	<p>A.REI.2, A.APR.7</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
			<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
			<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>9.1 Exponential Functions</p> <p>*Graph exponential functions.</p> <p>*Solve exponential equations and inequalities.</p>	<p>F.IF.7e, A.REI.11, F.IF.8b, F.LE.1a F.LE.1c</p>		<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>9.2 Logarithms and Logarithmic Functions</p> <p>*Evaluate logarithmic expressions.</p> <p>*Solve logarithmic equations and inequalities.</p>	<p>F.LE.4</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>9.3 Properties of Logarithms</p> <p>*Simplify and evaluate expressions using the properties of logarithms.</p> <p>*Solve logarithmic equations using the properties of logarithms.</p>	<p>A.SSE.3, F.LE.4</p>		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>9.4 Common Logarithms</p> <p>*Solve exponential equations and inequalities using common logarithms.</p> <p>*Evaluate logarithmic expressions using the Change of Base formula.</p>	<p>F.LE.4</p>		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>9.5 Base e and Natural Logarithms</p> <p>*Evaluate expressions involving the natural base and natural logarithms.</p> <p>*Solve exponential equations and inequalities using natural logarithms.</p>	<p>F.LE.4</p>		<p>1. Make sense of problems and persevere in solving them.</p>
<p>9.6 Exponential Growth and Decay</p> <p>*Use logarithms to solve problems involving exponential decay.</p> <p>*Use logarithms to solve problems involving exponential growth.</p>	<p>F.LE.1c, F.LE.3, F.LE.5</p>		<p>2. Reason abstractly and quantitatively.</p>
			<p>3. Construct viable arguments and critique the reasoning of others.</p>
			<p>4. Model with mathematics.</p>
			<p>5. Use appropriate tools strategically.</p>
			<p>6. Attend to precision.</p>
			<p>7. Look for and make use of structure.</p>
			<p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>11-1 Arithmetic Sequences</p> <p>*Use arithmetic sequences.</p> <p>*Find arithmetic means.</p>	<p>A.SSE.4, F.LE.2</p>		<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>11-2 Arithmetic Series</p> <p>*Find sums of arithmetic series.</p> <p>*Use sigma notation.</p>	<p>A.SSE.4</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>11-3 Geometric Sequences</p> <p>*Use geometric sequences.</p> <p>*Find geometric means.</p>	<p>A.SSE.4, F.LE.2</p>		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>11-4 Geometric Series</p> <p>*Find sums of geometric series.</p> <p>*Find specific terms of a geometric series.</p>	<p>A.SSE.4</p>		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>11-6 Recursion and Special Sequences</p> <p>*Recognize and use special sequences.</p> <p>*Iterate functions.</p>	<p>F.IF.3</p>		<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>11-7 The Binomial Theorem</p> <p>*Use Pascal's triangle to expand powers of binomials.</p> <p>*Use the Binomial Theorem to expand powers of binomials.</p>	<p>A.APR.5</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
			<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
			<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

<u>Section / Description / Objectives</u>	<u>Common Core State Standards</u>	<u>Supplemental Resources</u>	<u>Mathematical Practices</u>
<p>12-1 The Counting Principle</p> <p>*Solve problems involving independent events.</p> <p>*Solve problems involving dependent events.</p>			<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>12-2 Permutations and Combinations</p> <p>*Solve problems involving permutations.</p> <p>*Solve problems involving combinations.</p>			<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>12-3 Probability</p> <p>*Use combinations and permutations to find probability.</p> <p>*Create and use graphs of probability distribution.</p>			<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>12-4 Multiplying Probabilities</p> <p>*Find the probability of two independent events.</p> <p>*Find the probability of two dependent events.</p>			<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>12-5 Adding Probabilities</p> <p>*Find the probability of mutually exclusive events.</p> <p>*Find the probability of inclusive events.</p>			<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>12-6 Statistical Measures</p> <p>*Use measures of central tendency to represent a set of data.</p> <p>*Find measures of variation for a set of data.</p>	S.ID.4, S.IC.1		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>12-7 The Normal Distribution</p> <p>*Determine whether a set of data appears to be normally distributed or skewed.</p> <p>*Solve problems involving normally distributed data.</p>	S.ID.4, S.IC.1		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>12-8 Exponential and Binomial Distribution</p> <p>*Use exponential distributions to find exponential probabilities.</p> <p>*Use binomial distributions to find binomial probabilities.</p>	S.ID.6a, S.IC.1, S.IC.2		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>12-10 Sampling and Error</p> <p>*Determine whether a sample is unbiased.</p> <p>*Find margins of sampling error.</p>	<p>S.IC.4, S.IC.5, S.IC.6</p>		<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p> <p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p> <p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p> <p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>13-1 Right Triangle Trigonometry</p> <p>*Find values of trigonometric functions for acute angles.</p> <p>*Solve problems involving right triangles.</p>			<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>13-2 Angles and Angle Measure</p> <p>*Change radian measure to degree measure and vice versa.</p> <p>*Identify terminal angles.</p>	<p>F.TF.1, F.TF.2</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>13-3 Trigonometric Functions of General Angles</p> <p>*Find values of trigonometric functions for general angles.</p> <p>*Use reference angles to find values of trigonometric functions.</p>	<p>F.TF.2</p>		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
<p>13-6 Circular Functions</p> <p>*Define and use the trigonometric functions based on the unit circle.</p> <p>*Find the exact values of trigonometric functions of angles.</p>	<p>F.TF.2</p>		<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>13-7 Inverse Trigonometric Functions</p> <p>*Solve equations by using inverse trigonometric functions.</p> <p>*Find values of expressions involving trigonometric functions.</p>	<p>F.TF.2, F.TF.6, F.TF.7</p>		<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Section / Description / Objectives	Common Core State Standards	Supplemental Resources	Mathematical Practices
<p>14-1 Graphing Trigonometric Functions</p> <p>*Graph trigonometric functions.</p> <p>*Find the amplitude and period of variation of the sine, cosine, and tangent functions.</p>	<p>F.TF.2, F.TF.4, F.TF.5</p>		<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p>
<p>14-2 Translations of Trigonometric Graphs</p> <p>*Graph horizontal translations of trigonometric graphs and find phase shifts.</p> <p>*Graph vertical translation of trigonometric graphs.</p>	<p>F.TF.2, F.TF.4, F.TF.5</p>		<p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p>
<p>14-3 Trigonometric Identities</p> <p>*Use identities to find trigonometric values.</p> <p>*Use trigonometric identities to simplify expressions.</p>	<p>F.TF.8</p>		<p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p>
			<p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p>