Algebra 2, 4th Edition • Lesson Plan Overview

Chapter 1: Basic Algebra

Pages	Objectives	Resources	Assessments
Let's Go Exploring!			
ix–xiii	• Explain the importance of Algebra 2. • Provide an overview of the essential mathematical practices. • Describe features of the Student Edition.		**Assessments** • Pretest Chapter 1
1.1 Real Number Operations			
4–9	1.1.1 Identify the subsets of the real number system, their relationship to each other, and examples of each. 1.1.2 Identify basic real number properties. 1.1.3 Determine whether a set of numbers is closed under a given operation. 1.1.4 Evaluate numerical expressions by using the order of operations. 1.1.5 Evaluate algebraic expressions by using the Substitution Property. 1.1.6 Explain the importance of the order of operations. **BWS** Foundations (explain)	**BJU Press Trove*** • Video: Scripture and Mathematics • PowerPoint presentation: Section 01.1 **AfterSchoolHelp.com** • Real Number Operations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 4)
1.2 Simplifying Algebraic Expressions			
10–16	1.2.1 Apply the definitions and properties of exponents to simplify algebraic expressions. 1.2.2 Classify polynomials by their number of terms and degree. 1.2.3 Add and subtract polynomials.	**Activities** • Simplifying Expressions • Using Technology—Evaluating Expressions **BJU Press Trove** • PowerPoint presentation: Section 01.2 **AfterSchoolHelp.com** • Simplifying Algebraic Expressions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 10) **Assessments** • Quiz 1A (Sections 1.1–1.2)

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Pages	Objectives	Resources	Assessments
1.3 Solving Equations			
17–22	1.3.1 Identify properties of equality. 1.3.2 Solve equations by applying the properties of equality. 1.3.3 Solve literal equations for a specified variable. 1.3.4 Explain what it means for a mathematical solution to be correct. **BWS** Foundations (explain)	**BJU Press Trove** • PowerPoint presentation: Section 01.3 **AfterSchoolHelp.com** • Solving Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 17)
1.4 Applying Equations **(2 days)**			
23–29	1.4.1 Solve problems involving number and angle relationships. 1.4.2 Solve problems involving the distance formula, $d = rt$. 1.4.3 Solve problems involving the simple interest formula, $I = Prt$. 1.4.4 Solve problems involving mixtures.	**Activities** • Solving Equations **BJU Press Trove** • Video: Applying Equations • PowerPoint presentation: Section 01.4 **AfterSchoolHelp.com** • Applying Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 23) **Assessments** • Quiz 1B (Sections 1.3–1.4)
1.5 Solving Inequalities			
30–34	1.5.1 Solve linear inequalities. 1.5.2 Solve real-world problems by writing and solving linear inequalities.	**BJU Press Trove** • PowerPoint presentation: Section 01.5 **AfterSchoolHelp.com** • Solving Inequalities	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 30)
1.6 Compound Inequalities			
35–40	1.6.1 Solve compound inequalities. 1.6.2 Solve real-world problems by writing and solving compound linear inequalities. 1.6.3 Explain why math can be used as a tool to describe the world. **BWS** Foundations (explain)	**Activities** • Solving Inequalities **BJU Press Trove** • PowerPoint presentation: Section 01.6 **AfterSchoolHelp.com** • Compound Inequalities	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 35) **Assessments** • Quiz 1C (Sections 1.5–1.6)

Pages	Objectives	Resources	Assessments
1.7 Absolute Value Equations			
41–48	1.7.1 Solve absolute value equations. 1.7.2 Write absolute value equations describing graphs and real-world situations. 1.7.3 Use the distance and midpoint formulas to solve problems.	**Activities** • Math History—Richard Dedekind • Using Technology—Absolute Value **BJU Press Trove** • PowerPoint presentation: Section 01.7 **AfterSchoolHelp.com** • Absolute Value Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 41)
1.8 Absolute Value Inequalities			
49–53	1.8.1 Write a conjunction or disjunction representing an absolute value inequality. 1.8.2 Solve absolute value inequalities. 1.8.3 Write absolute value inequalities describing graphs and real-world situations.	**Activities** • Absolute Value Equations & Inequalities **BJU Press Trove** • PowerPoint presentation: Section 01.8 **AfterSchoolHelp.com** • Absolute Value Inequalities	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 49) **Assessments** • Quiz 1D (Sections 1.7–1.8)
Application Problems—Climate & Disease			
54	1.AP.1 Make predictions about disease from weather-related graphs. 1.AP.2 Explain how modeling climate and disease data relates to the Creation Mandate. **BWS** Foundations (explain)		**Student Edition** • Exercises

Pages	Objectives	Resources	Assessments
Chapter 1 Review			
55–59	Review the skills and concepts taught in Chapter 1.	**Activities** • Chapter 1 Review • Cumulative Review 1 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 1 Review exercises
Chapter 1 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 1.		**Assessments** • Chapter 1 Test **BJU Press Trove** • Chapter 1 test bank

Chapter 2: Linear Relations

Pages	Objectives	Resources	Assessments
2.1 Relations & Functions			
62–68	2.1.1 Represent a relation using set notation, a graph, or a mapping diagram. 2.1.2 State the domain and range of relations. 2.1.3 Identify which relations are functions. 2.1.4 Use function notation to represent ordered pairs.	**BJU Press Trove*** • Video: Mathematical Models • PowerPoint presentation: Section 02.1 **AfterSchoolHelp.com** • Relations & Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 62)
2.2 Graphing Linear Equations			
69–75	2.2.1 Identify the slope and the ***x***- and ***y***-intercepts of a line. 2.2.2 Graph linear functions. 2.2.3 Solve real-world problems related to linear equations.	**Activities** • Graphing Linear Equations **BJU Press Trove** • PowerPoint presentation: Section 02.2 **AfterSchoolHelp.com** • Graphing Linear Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 69)
2.3 Writing Linear Equations **(2 days)**			
76–82	2.3.1 Write a linear equation when given the graph of a line, 2 points on the line, or the slope and a point. 2.3.2 Write a linear equation when given a point on a line and the equation of a parallel or perpendicular line. 2.3.3 Solve real-world problems by writing and solving linear equations. 2.3.4 Explain the usefulness of mathematical models. **BWS** Modeling (explain)	**Activities** • Writing Linear Equations **BJU Press Trove** • Video: Filling an Aquarium • PowerPoint presentation: Section 02.3 **AfterSchoolHelp.com** • Writing Linear Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 76) **Assessments** • Quiz 2A (Sections 2.1–2.3)

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Pages	Objectives	Resources	Assessments
2.4 Modeling Linear Data **(2 days)**			
83–90	2.4.1 Create scatter plots and linear models of real-world bivariate data using technology. 2.4.2 Evaluate the reliability of linear models and their predictions. 2.4.3 Explain what factors limit a model's effectiveness. **BWS** Modeling (explain)	**Activities** • Using Technology—Linear Regressions **BJU Press Trove** • PowerPoint presentation: Section 02.4 **AfterSchoolHelp.com** • Modeling Linear Data	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 83)
2.5 Piecewise Functions			
91–98	2.5.1 State the domain and range of piecewise functions, including greatest integer and absolute value functions. 2.5.2 Evaluate piecewise functions, including greatest integer and absolute value functions, for a given domain. 2.5.3 Graph piecewise functions, including greatest integer and absolute value functions. 2.5.4 Write function rules describing piecewise functions. 2.5.5 Solve real-world problems related to piecewise functions.	**BJU Press Trove** • PowerPoint presentation: Section 02.5 **AfterSchoolHelp.com** • Piecewise Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 91) **Assessments** • Quiz 2B (Sections 2.4–2.5)
2.6 Graphing Inequalities			
99–103	2.6.1 Graph linear and absolute value inequalities in 2 variables. 2.6.2 Solve real-world problems using bivariate inequalities and their graphs.	**Activities** • Special Functions & Inequalities **BJU Press Trove** • PowerPoint presentation: Section 02.6 **AfterSchoolHelp.com** • Graphing Inequalities	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 99)

Pages	Objectives	Resources	Assessments
2.7 Distances & Midpoints			
104–9	2.7.1 Find distances and midpoints by applying the appropriate formula. 2.7.2 Solve problems using the distance and midpoint formulas. 2.7.3 Graph an ordered triple as a point in space.	**BJU Press Trove** • PowerPoint presentation: Section 02.7 **AfterSchoolHelp.com** • Distances & Midpoints	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 104) **Assessments** • Quiz 2C (Sections 2.6–2.7)
Application Problems—Linear Analysis of Climate Change			
110	2.AP.1 Use technology to analyze real-world data. 2.AP.2 Explain the limitation and interpretation of a linear regression. 2.AP.3 Evaluate the usefulness and limitations of climate-related models. **BWS** Modeling (evaluate)		**Student Edition** • Exercises
Chapter 2 Review			
111–15	Review the skills and concepts taught in Chapter 2.	**Activities** • Chapter 2 Review • Cumulative Review 2 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 2 Review exercises
Chapter 2 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 2.		**Assessments** • Chapter 2 Test **BJU Press Trove** • Chapter 2 test bank

Chapter 3: Solving Systems

Pages	Objectives	Resources	Assessments
3.1 Solving Systems Graphically			
118–25	3.1.1 Solve systems of linear equations by graphing. 3.1.2 Classify linear systems as consistent independent, consistent dependent, or inconsistent.	**BJU Press Trove*** • Video: Solving Systems • PowerPoint presentation: Section 03.1 **AfterSchoolHelp.com** • Solving Systems Graphically	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 118)
3.2 Solving Systems Algebraically			
126–31	3.2.1 Solve systems of linear equations by substitution. 3.2.2 Solve systems of linear equations by elimination.	**Activities** • Solving Systems of Equations **BJU Press Trove** • PowerPoint presentation: Section 03.2 **AfterSchoolHelp.com** • Solving Systems Algebraically	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 126) **Assessments** • Quiz 3A (Sections 3.1–3.2)
3.3 Applying Systems of Equations (2 days)			
132–39	3.3.1 Solve real-world problems by using systems of equations. 3.3.2 Explain the role of reasoning in solving mathematical problems. **BWS** Reasoning (explain)	**Activities** • Applying Systems of Equations **BJU Press Trove** • PowerPoint presentation: Section 03.3 **AfterSchoolHelp.com** • Applying Systems of Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 132)

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Pages	Objectives	Resources	Assessments
3.4 Graphing Systems of Inequalities			
140–44	3.4.1 Solve systems of linear inequalities by graphing. 3.4.2 Identify the vertices of the region containing solutions to a system.	**Activities** • Graphing Systems of Inequalities **BJU Press Trove** • PowerPoint presentation: Section 03.4 **AfterSchoolHelp.com** • Graphing Systems of Inequalities	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 140) **Assessments** • Quiz 3B (Sections 3.3–3.4)
3.5 Linear Programming			
145–51	3.5.1 Graph a feasible region for a set of constraints to identify its vertices. 3.5.2 Determine the maximum or minimum value of an objective function for a given set of constraints. 3.5.3 Solve real-world problems using linear programming.	**BJU Press Trove** • Video: Linear Programming • PowerPoint presentation: Section 03.5 **AfterSchoolHelp.com** • Linear Programming	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 145)
3.6 Linear Systems in 3 Variables			
152–59	3.6.1 Draw graphs representing linear equations in 3 variables. 3.6.2 Interpret graphical representations of systems in 3 variables. 3.6.3 Solve systems of 3 linear equations in 3 variables algebraically. 3.6.4 Contrast a mathematical solution and scriptural truth. **BWS** Reasoning (explain)	**BJU Press Trove** • Video: Linear Systems in 3 Variables • PowerPoint presentation: Section 03.6 **AfterSchoolHelp.com** • Linear Systems in 3 Variables	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 152) **Assessments** • Quiz 3C (Sections 3.5–3.6)

Pages	Objectives	Resources	Assessments
Application Problems—Planning a Business			
160	3.AP.1 Apply mathematical reasoning in making a business plan. 3.AP.2 Evaluate the use of mathematical reasoning in making a business plan. **BWS** Reasoning (evaluate)		**Student Edition** • Exercises
Chapter 3 Review			
161–65	Review the skills and concepts taught in Chapter 3.	**Activities** • Chapter 3 Review • Cumulative Review 3 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 3 Review exercises
Chapter 3 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 3.		**Assessments** • Chapter 3 Test **BJU Press Trove** • Chapter 3 test bank
First Quarter Review & Exam **(2 days)**			
	Review and demonstrate mastery of the skills and concepts taught in Chapters 1–3.		**Assessments** • Exam 1 **BJU Press Trove** • Chapters 1–3 test banks

Chapter 4: Matrices

Pages	Objectives	Resources	Assessments
4.1 Organizing Data with Matrices			
168–72	4.1.1 Determine the dimensions of a matrix. 4.1.2 Identify the specific elements of a matrix. 4.1.3 Create matrices representing general data and geometric figures. 4.1.4 Recall the purpose of mathematical models. **BWS** Modeling (recall)	**BJU Press Trove*** • Video: Helpful Matrices • Video: Matrices • PowerPoint presentation: Section 04.1 **AfterSchoolHelp.com** • Organizing Data with Matrices	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 168)
4.2 Elementary Matrix Operations			
173–78	4.2.1 Add and subtract matrices. 4.2.2 Identify properties related to sums and scalar products of matrices. 4.2.3 Perform scalar matrix multiplication. 4.2.4 Solve equations and real-world problems involving matrices.	**Activities** • Using Technology—Matrix Addition & Subtraction **BJU Press Trove** • PowerPoint presentation: Section 04.2 **AfterSchoolHelp.com** • Elementary Matrix Operations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 173) **Assessments** • Quiz 4A (Sections 4.1–4.2)
4.3 Matrix Multiplication			
179–84	4.3.1 Determine the dimensions of the product of 2 matrices. 4.3.2 Multiply 2 matrices. 4.3.3 Represent systems of equations using matrix equations. 4.3.4 Use matrix multiplication to solve real-world problems.	**Activities** • Using Technology—Matrix Multiplication **BJU Press Trove** • PowerPoint presentation: Section 04.3 **AfterSchoolHelp.com** • Matrix Multiplication	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 179)

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Pages	Objectives	Resources	Assessments
4.4 Determinants & Cramer's Rule **(2 days)**			
185–90	4.4.1 Find the determinants of 2 × 2 and 3 × 3 matrices. 4.4.2 Solve a system of equations using Cramer's rule. 4.4.3 Use determinants to find the areas of geometric figures.	**Activities** • Using Technology—Evaluating the Determinant of a Matrix • Using Technology—Cramer's Rule **BJU Press Trove** • Video: Surveying Land • PowerPoint presentation: Section 04.4 **AfterSchoolHelp.com** • Determinants & Cramer's Rule	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 185) **Assessments** • Quiz 4B (Sections 4.3–4.4)
4.5 Inverse Matrices & Solving Systems			
191–97	4.5.1 Determine whether a matrix has a multiplicative inverse. 4.5.2 Find the inverse of a matrix. 4.5.3 Solve a system of equations using inverse matrices. 4.5.4 Evaluate the claim that mathematical models are perfect representations of reality. **BWS** Modeling (evaluate)	**Activities** • Using Technology—Inverse of a Matrix **BJU Press Trove** • PowerPoint presentation: Section 04.5 **AfterSchoolHelp.com** • Inverse Matrices & Solving Systems	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 191)
4.6 Matrices & Transformations			
198–204	4.6.1 Write a matrix equation for the transformation of a figure. 4.6.2 Graph both the preimage and the image of a transformation on the same coordinate plane.	**BJU Press Trove** • PowerPoint presentation: Section 04.6 **AfterSchoolHelp.com** • Matrices & Transformations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 198) **Assessments** • Quiz 4C (Sections 4.5–4.6)

Pages	Objectives	Resources	Assessments
Application Problems—Image Resolution			
205–7	4.AP.1 Calculate acceptable image resolutions. 4.AP.2 Calculate image resolutions using matrices. 4.AP.3 Defend a biblical view of models as representations of reality. **BWS** Modeling (formulate)		**Student Edition** • Exercises
Chapter 4 Review			
208–12	Review the skills and concepts taught in Chapter 4.	**Activities** • Chapter 4 Review • Cumulative Review 4 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 4 Review exercises
Chapter 4 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 4.		**Assessments** • Chapter 4 Test **BJU Press Trove** • Chapter 4 test bank
STEM Project—Wind Turbines **(2 days)**			
213	S.1.1 Design a wind turbine by using the engineering design process. S.1.2 Research wind turbines and designs for a wind turbine generator. S.1.3 Assemble a wind turbine generator capable of lighting an LED bulb. S.1.4 Use a multimeter to measure voltage and current. S.1.5 Optimize the efficiency of the generator by evaluating and modifying the design.	**Activities** • STEM—Wind Turbines	**Activities** • STEM—Wind Turbines project grading rubric

Chapter 5: Quadratic Equations

Pages	Objectives	Resources	Assessments
5.1 Multiplying Polynomials			
216–20	5.1.1 Multiply polynomials. 5.1.2 Use patterns to simplify special products of binomials.	**BJU Press Trove*** • Video: Quadratics • PowerPoint presentation: Section 05.1 **AfterSchoolHelp.com** • Multiplying Polynomials	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 216)
5.2 Factoring Quadratic Polynomials			
221–27	5.2.1 Factor a common monomial from a polynomial. 5.2.2 Factor trinomials. 5.2.3 Use patterns to factor special products. 5.2.4 Explain using biblical truth why we are able to recognize mathematical patterns. **BWS** Design (explain)	**Activities** • Factoring **BJU Press Trove** • PowerPoint presentation: Section 05.2 **AfterSchoolHelp.com** • Factoring Quadratic Polynomials	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 221)
5.3 Solving by Factoring			
228–32	5.3.1 Solve quadratic equations using the Zero Product Property. 5.3.2 Write a quadratic equation given its solutions. 5.3.3 Solve real-world applications involving quadratic equations.	**Activities** • Math History—Niels Abel **BJU Press Trove** • PowerPoint presentation: Section 05.3 **AfterSchoolHelp.com** • Solving by Factoring	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 228) **Assessments** • Quiz 5A (Sections 5.1–5.3)

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Pages	Objectives	Resources	Assessments
5.4 Solving by Taking Roots **(2 days)**			
233–38	5.4.1 Solve quadratic equations by taking roots. 5.4.2 Simplify radicals, including those with negative radicands. 5.4.3 Solve real-world applications involving quadratic equations. 5.4.4 Define the imaginary unit. 5.4.5 Explain how mathematics helps us recognize God's handiwork in His creation. **BWS** Design (explain)	**BJU Press Trove** • PowerPoint presentation: Section 05.4 **AfterSchoolHelp.com** • Solving by Taking Roots	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 233)
5.5 Complex Numbers			
239–43	5.5.1 Graph complex numbers on a complex plane. 5.5.2 Find the absolute value of complex numbers. 5.5.3 Perform addition, subtraction, and multiplication involving complex numbers. 5.5.4 Simplify powers of ***i***.	**Activities** • Complex Numbers **BJU Press Trove** • Video: Complex Numbers • PowerPoint presentation: Section 05.5 **AfterSchoolHelp.com** • Complex Numbers	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 239) **Assessments** • Quiz 5B (Sections 5.4–5.5)
5.6 Solving by Completing the Square			
244–48	5.6.1 Solve quadratic equations by completing the square.	**BJU Press Trove** • PowerPoint presentation: Section 05.6 **AfterSchoolHelp.com** • Solving by Completing the Square	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 244)

Pages	Objectives	Resources	Assessments
5.7 The Quadratic Formula			
249–53	5.7.1 Derive the quadratic formula. 5.7.2 Solve quadratic equations using the quadratic formula. 5.7.3 Solve real-world applications involving quadratic equations.	**BJU Press Trove** • PowerPoint presentation: Section 05.7 **AfterSchoolHelp.com** • The Quadratic Formula	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 249) **Assessments** • Quiz 5C (Sections 5.6–5.7)
5.8 Solutions to Quadratic Equations			
254–59	5.8.1 Identify the best method for solving a quadratic equation. 5.8.2 Evaluate the discriminant to classify the nature and number of solutions to a quadratic equation. 5.8.3 Write a quadratic equation with given rational, irrational, or complex roots.	**Activities** • Quadratic Equations **BJU Press Trove** • PowerPoint presentation: Section 05.8 **AfterSchoolHelp.com** • Solutions to Quadratic Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 254)
5.9 Solving Quadratic Inequalities			
260–65	5.9.1 Solve quadratic inequalities. 5.9.2 Graph the solution set of inequalities on a number line. 5.9.3 Solve real-world applications involving quadratic inequalities.	**Activities** • Solving Quadratic Inequalities **BJU Press Trove** • PowerPoint presentation: Section 05.9 **AfterSchoolHelp.com** • Solving Quadratic Inequalities	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 260) **Assessments** • Quiz 5D (Sections 5.8–5.9)

Pages	Objectives	Resources	Assessments
Application Problems—Analyzing Speed from Skid Marks			
266–67	5.AP.1 Use quadratic functions and technology to analyze crash scene data. 5.AP.2 Use linear and quadratic regression models to make predictions. 5.AP.3 Explain how our inventions continue to reveal evident design in our world. **BWS** Design (explain)		**Student Edition** • Exercises
Chapter 5 Review			
268–71	Review the skills and concepts taught in Chapter 5.	**Activities** • Chapter 5 Review • Cumulative Review 5 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 5 Review exercises
Chapter 5 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 5.		**Assessments** • Chapter 5 Test **BJU Press Trove** • Chapter 5 test bank

Chapter 6: Polynomial Functions

Pages	Objectives	Resources	Assessments
6.1 Quadratic Functions			
274–80	6.1.1 Graph quadratic functions of the form $f(x) = ax^2 + bx + c$ by plotting points. 6.1.2 Graph quadratic functions of the form $f(x) = ax^2 + c$ by transforming the parent function $f(x) = x^2$. 6.1.3 Determine the vertex, domain, range, and axis of symmetry of a parabola, given its graph or the function rule $f(x) = ax^2 + c$.	**Activities** • Math History—Jean d'Alembert **BJU Press Trove*** • Video: Using Math Ethically • PowerPoint presentation: Section 06.1 **AfterSchoolHelp.com** • Quadratic Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 274)
6.2 Quadratic Functions: $f(x) = a(x - h)^2 + k$			
281–87	6.2.1 Graph quadratic functions of the form $f(x) = a(x - h)^2 + k$ by transforming the parent function. 6.2.2 Write quadratic functions in vertex form by completing the square. 6.2.3 Determine the key characteristics of a quadratic function in the form $f(x) = ax^2 + bx + c$. 6.2.4 Solve real-world problems involving minimum or maximum values.	**BJU Press Trove** • PowerPoint presentation: Section 06.2 **AfterSchoolHelp.com** • Quadratic Functions: $f(x) = a(x - h)^2 + k$	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 281) **Assessments** • Quiz 6A (Sections 6.1–6.2)
6.3 Zeros & Inequalities			
288–93	6.3.1 Determine the real zeros and y-intercept of a quadratic function. 6.3.2 Use the graph of a quadratic function to solve quadratic equations and inequalities in 1 variable. 6.3.3 Graph quadratic inequalities in 2 variables.	**Activities** • Quadratic Functions & Inequalities • Using Technology—Solving Quadratic Equations Graphically • Systems of Inequalities **BJU Press Trove** • PowerPoint presentation: Section 06.3 **AfterSchoolHelp.com** • Zeros & Inequalities	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 288)

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Pages	Objectives	Resources	Assessments
6.4 Modeling with Quadratic Functions			
294–301	6.4.1 Solve real-world problems by writing quadratic function rules and finding their maximum value. 6.4.2 Create scatter plots and quadratic models of real-world bivariate data using technology. 6.4.3 Determine the equation of a parabola given points on the parabola. 6.4.4 Explain how mathematics can help me serve others. **BWS** Ethics (explain)	**BJU Press Trove** • PowerPoint presentation: Section 06.4 **AfterSchoolHelp.com** • Modeling with Quadratic Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 294) **Assessments** • Quiz 6B (Sections 6.3–6.4)
6.5 Dividing Polynomials **(2 days)**			
302–6	6.5.1 Divide a polynomial by a monomial. 6.5.2 Divide a polynomial by a binomial or trinomial using the long-division algorithm. 6.5.3 Divide a polynomial by a binomial of the form $x - a$ using synthetic division.	**Activities** • Dividing Polynomials **BJU Press Trove** • PowerPoint presentation: Section 06.5 **AfterSchoolHelp.com** • Dividing Polynomials	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 302)
6.6 Factoring Polynomials			
307–12	6.6.1 Use the Remainder Theorem to find remainders and evaluate functions. 6.6.2 Factor polynomials using the Factor Theorem, the Rational Root Theorem, and synthetic division. 6.6.3 Factor select polynomials using special patterns.	**Activities** • Using Technology—Polynomials **BJU Press Trove** • PowerPoint presentation: Section 06.6 **AfterSchoolHelp.com** • Factoring Polynomials	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 307) **Assessments** • Quiz 6C (Sections 6.5–6.6)

Pages	Objectives	Resources	Assessments
6.7 Polynomial Equations **(2 days)**			
313–17	6.7.1 Solve polynomial equations using the Zero Product Property. 6.7.2 Determine the number of complex roots of a polynomial equation. 6.7.3 Write a polynomial of least degree with given roots.	**Activities** • Polynomial Equations • Modeling Functions **BJU Press Trove** • PowerPoint presentation: Section 06.7 **AfterSchoolHelp.com** • Polynomial Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 313)
6.8 Graphing Polynomial Functions			
318–26	6.8.1 Graph a polynomial function using its end behavior, zeros, *y*-intercept, and other points. 6.8.2 Use technology to graph a polynomial function and approximate its zeros and extrema. 6.8.3 Analyze polynomial functions that model given sets of real-world data. 6.8.4 Explain how math can be used in an unethical way. **BWS** Ethics (explain)	**Activities** • Polynomial Functions **BJU Press Trove** • PowerPoint presentation: Section 06.8 **AfterSchoolHelp.com** • Graphing Polynomial Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 318) **Assessments** • Quiz 6D (Sections 6.7–6.8)
Application Problems—Modeling World Population			
327–28	6.AP.1 Model population growth and food supply. 6.AP.2 Evaluate concerns regarding population and food supply. **BWS** Ethics (evaluate) 6.AP.3 Explain how different interpretations of world population models can have ethical implications. **BWS** Ethics (explain)		**Student Edition** • Exercises

Pages	Objectives	Resources	Assessments
Chapter 6 Review			
329–33	Review the skills and concepts taught in Chapter 6.	**Activities** • Chapter 6 Review • Cumulative Review 6 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 6 Review exercises
Chapter 6 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 6.		**Assessments** • Chapter 6 Test **BJU Press Trove** • Chapter 6 test bank

Chapter 7: Radicals & Exponents

Pages	Objectives	Resources	Assessments
7.1 Simplifying Radicals			
336–40	7.1.1 Evaluate radical expressions. 7.1.2 Simplify radical expressions. 7.1.3 Use formulas to solve problems involving radicals.	**Activities** • Simplifying Radicals **BJU Press Trove*** • Video: God's Existence • PowerPoint presentation: Section 07.1 **AfterSchoolHelp.com** • Simplifying Radicals	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 336)
7.2 Rational Exponents			
341–45	7.2.1 Evaluate exponential expressions. 7.2.2 Convert between radical and exponential form. 7.2.3 Simplify exponential and radical expressions.	**Activities** • Rational Exponents **BJU Press Trove** • Video: Negative Exponents • PowerPoint presentation: Section 07.2 **AfterSchoolHelp.com** • Rational Exponents	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 341) **Assessments** • Quiz 7A (Sections 7.1–7.2)
7.3 Sums & Differences			
346–49	7.3.1 Add and subtract radical expressions. 7.3.2 Add and subtract exponential expressions.	**Activities** • Sums & Differences of Radicals **BJU Press Trove** • PowerPoint presentation: Section 07.3 **AfterSchoolHelp.com** • Sums & Differences	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 346)

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Pages	Objectives	Resources	Assessments
7.4 Products			
350–54	7.4.1 Multiply radical expressions. 7.4.2 Multiply exponential expressions.	**Activities** • Products • Math History—Gerolamo Cardano **BJU Press Trove** • PowerPoint presentation: Section 07.4 **AfterSchoolHelp.com** • Products	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 350) **Assessments** • Quiz 7B (Sections 7.3–7.4)
7.5 Quotients **(2 days)**			
355–60	7.5.1 Divide expressions containing radicals. 7.5.2 Divide expressions containing complex numbers.	**Activities** • Quotients **BJU Press Trove** • PowerPoint presentation: Section 07.5 **AfterSchoolHelp.com** • Quotients	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 355)
7.6 Radical & Exponential Equations			
361–65	7.6.1 Solve equations containing radical expressions. 7.6.2 Solve simple radical equations. 7.6.3 Solve simple exponential equations. 7.6.4 Evaluate the view that creation's consistency proves God's existence. **BWS** Design (evaluate)	**Activities** • Math History—William Rowan Hamilton **BJU Press Trove** • PowerPoint presentation: Section 07.6 **AfterSchoolHelp.com** • Radical & Exponential Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 361) **Assessments** • Quiz 7C (Sections 7.5–7.6)

Pages	Objectives	Resources	Assessments
7.7 More Radical Equations **(2 days)**			
366–70	7.7.1 Solve more complex radical equations. 7.7.2 Solve literal radical equations.	**Activities** • Radical & Exponential Equations **BJU Press Trove** • PowerPoint presentation: Section 07.7 **AfterSchoolHelp.com** • More Radical Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 366)
7.8 Radical Functions			
371–77	7.8.1 Graph transformations of $f(x) = \sqrt{x}$. 7.8.2 Solve mathematical and real-world radical equations using technology. 7.8.3 Analyze the influence of worldview on interpreting nature's consistency. **BWS** Design (evaluate)	**BJU Press Trove** • PowerPoint presentation: Section 07.8 **AfterSchoolHelp.com** • Radical Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 371) **Assessments** • Quiz 7D (Sections 7.7–7.8)
Application Problems—Modeling Pendulums			
378–79	7.AP.1 Describe the relationship between the length of a pendulum's arm and its period of motion. 7.AP.2 Describe how the pendulum helps us see God's consistent faithfulness in our world. **BWS** Design (explain) 7.AP.3 Evaluate the ability of mathematics to provide consistent descriptions of the world. **BWS** Design (evaluate)	**BJU Press Trove** • Video: Pendulums	**Student Edition** • Exercises

Pages	Objectives	Resources	Assessments
Chapter 7 Review			
380–83	Review the skills and concepts taught in Chapter 7.	**Activities** • Chapter 7 Review • Cumulative Review 7 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 7 Review exercises
Chapter 7 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 7.		**Assessments** • Chapter 7 Test **BJU Press Trove** • Chapter 7 test bank
Second Quarter Review & Exam **(2 days)**			
	Review and demonstrate mastery of the skills and concepts taught in Chapters 4–7.		**Assessments** • Exam 2 **BJU Press Trove** • Chapters 4–7 test banks

Chapter 8: Exponential & Logarithmic Functions

Pages	Objectives	Resources	Assessments
8.1 Function Operations			
386–92	8.1.1 Find the sum, difference, product, and quotient of functions. 8.1.2 Find the composition of functions. 8.1.3 Explain how God created the world in such a way that we can understand it with math. **BWS** Foundations (explain)	**Activities** • Function Operations **BJU Press Trove*** • Video: Exponential and Logarithmic Functions • PowerPoint presentation: Section 08.1 **AfterSchoolHelp.com** • Function Operations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 386)
8.2 Inverse Relations & Functions			
393–99	8.2.1 Find the inverse of a relation. 8.2.2 Determine whether a function is one-to-one. 8.2.3 Use function composition to determine whether 2 functions are inverse functions.	**Activities** • Inverse Relations & Functions **BJU Press Trove** • PowerPoint presentation: Section 08.2 **AfterSchoolHelp.com** • Inverse Relations & Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 393) **Assessments** • Quiz 8A (Sections 8.1–8.2)
8.3 Exponential Functions **(2 days)**			
400–405	8.3.1 Graph exponential functions by plotting points. 8.3.2 Describe exponential functions using domain, range, asymptotes, and ***y***-intercepts. 8.3.3 Use exponential functions to solve real-world problems. 8.3.4 Evaluate the claim that we can discover moral value through observation, measurement, and prediction. **BWS** Foundations (evaluate)	**Activities** • Exponential Functions • Special Functions & Relations **BJU Press Trove** • PowerPoint presentation: Section 08.3 **AfterSchoolHelp.com** • Exponential Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 400)

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Pages	Objectives	Resources	Assessments
8.4 Using Exponential Functions			
406–12	8.4.1 Write exponential functions to model real-world situations related to exponential growth and decay. 8.4.2 Use exponential functions to solve real-world problems.	**BJU Press Trove** • Video: Credit Card Danger • PowerPoint presentation: Section 08.4 **AfterSchoolHelp.com** • Using Exponential Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 406) **Assessments** • Quiz 8B (Sections 8.3–8.4)
8.5 Logarithmic Functions **(2 days)**			
413–18	8.5.1 Convert between exponential and logarithmic forms. 8.5.2 Evaluate logarithmic expressions. 8.5.3 Graph logarithmic functions. 8.5.4 Formulate a biblical view of the relationship between math and Scripture. **BWS** Foundations (formulate)	**Activities** • Using Technology—Graphing Exponential & Logarithmic Functions **BJU Press Trove** • Video: Logarithmic Functions • PowerPoint presentation: Section 08.5 **AfterSchoolHelp.com** • Logarithmic Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 413)
8.6 Properties of Logarithms			
419–24	8.6.1 Apply the properties of logarithms to write equivalent logarithmic expressions. 8.6.2 Solve logarithmic equations.	**Activities** • Properties of Logarithms **BJU Press Trove** • Video: Math and Music • PowerPoint presentation: Section 08.6 **AfterSchoolHelp.com** • Properties of Logarithms	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 419) **Assessments** • Quiz 8C (Sections 8.5–8.6)

Pages	Objectives	Resources	Assessments
8.7 Exponential & Logarithmic Equations			
425–31	8.7.1 Solve exponential and logarithmic equations.	**Activities** • Exponential & Logarithmic Equations **BJU Press Trove** • Video: Sound • PowerPoint presentation: Section 08.7 **AfterSchoolHelp.com** • Exponential & Logarithmic Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 425)
8.8 Natural Logarithms			
432–38	8.8.1 Calculate values of natural logarithms. 8.8.2 Use natural logarithms to solve exponential and logarithmic equations.	**Activities** • Natural Logarithms **BJU Press Trove** • PowerPoint presentation: Section 08.8 **AfterSchoolHelp.com** • Natural Logarithms	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 432) **Assessments** • Quiz 8D (Sections 8.7–8.8)
Application Problems—Modeling Sound			
439–40	8.AP.1 Use math to model sound. 8.AP.2 Formulate an explanation of the basis of functions. **BWS** Foundations (formulate)	**Activities** • Modeling Sound	**Student Edition** • Exercises
Chapter 8 Review			
441–45	Review the skills and concepts taught in Chapter 8.	**Activities** • Chapter 8 Review • Cumulative Review 8 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 8 Review exercises

Pages	Objectives	Resources	Assessments
Chapter 8 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 8.		**Assessments** • Chapter 8 Test **BJU Press Trove** • Chapter 8 test bank

Chapter 9: Rational Expressions & Equations

Pages	Objectives	Resources	Assessments
9.1 Simplifying Rational Expressions			
448–52	9.1.1 Simplify rational expressions. 9.1.2 Explain how valid reasoning is necessary for simplifying rational expressions. **BWS** Reasoning (explain)	**Activities** • Simplifying Rational Expressions **BJU Press Trove*** • Video: Reasoning & Rational Expressions • PowerPoint presentation: Section 09.1 **AfterSchoolHelp.com** • Simplifying Rational Expressions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 448)
9.2 Multiplying & Dividing Rational Expressions			
453–56	9.2.1 Multiply rational expressions. 9.2.2 Divide rational expressions. 9.2.3 Simplify complex rational expressions.	**Activities** • Multiplying & Dividing Rational Expressions **BJU Press Trove** • PowerPoint presentation: Section 09.2 **AfterSchoolHelp.com** • Multiplying & Dividing Rational Expressions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 453) **Assessments** • Quiz 9A (Sections 9.1–9.2)
9.3 Adding & Subtracting Rational Expressions			
457–62	9.3.1 Add and subtract rational expressions. 9.3.2 Simplify complex rational expressions containing sums or differences. 9.3.3 Define the harmonic mean. 9.3.4 Apply harmonic means to solve real-world problems.	**Activities** • Adding & Subtracting Rational Expressions **BJU Press Trove** • PowerPoint presentation: Section 09.3 **AfterSchoolHelp.com** • Adding & Subtracting Rational Expressions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 457)

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Pages	Objectives	Resources	Assessments
9.4 Solving Rational Equations			
463–71	9.4.1 Solve rational equations. 9.4.2 Solve distance and work problems using rational equations. 9.4.3 Evaluate the idea that valid reasoning in solving rational equations merely involves solving for ***x***. **BWS** Reasoning (evaluate)	**Activities** • Solving Rational Equations **BJU Press Trove** • Video: Draining a Pool • PowerPoint presentation: Section 09.4 **AfterSchoolHelp.com** • Solving Rational Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 463) **Assessments** • Quiz 9B (Sections 9.3–9.4)
9.5 Graphing Reciprocal Functions			
472–78	9.5.1 Graph transformations of $f(x) = \frac{1}{x}$. 9.5.2 Use reciprocal functions to solve real-world problems.	**BJU Press Trove** • PowerPoint presentation: Section 09.5 **AfterSchoolHelp.com** • Graphing Reciprocal Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 472)
9.6 Graphing Rational Functions **(2 days)**			
479–85	9.6.1 Determine asymptotes, point discontinuities, and intercepts of rational functions. 9.6.2 Graph rational functions.	**Activities** • Describing Rational Functions • Using Technology—Graphing Rational Functions **BJU Press Trove** • Video: Graphing Rational Functions • PowerPoint presentation: Section 09.6 **AfterSchoolHelp.com** • Graphing Rational Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 479)

Pages	Objectives	Resources	Assessments
9.7 Variations			
486–92	9.7.1 Classify variations as direct, inverse, or joint. 9.7.2 Solve real-world problems involving variations.	**BJU Press Trove** • PowerPoint presentation: Section 09.7 **AfterSchoolHelp.com** • Variations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 486) **Assessments** • Quiz 9C (Sections 9.5–9.7)
Application Problems—Modeling Music			
493–94	9.AP.1 Use variations to model the frequency of notes. 9.AP.2 Explain the importance of reasoning in pipe organ design. **BWS** Reasoning (explain) 9.AP.3 Identify biblical principles related to using our talents in music.		**Student Edition** • Exercises
Chapter 9 Review			
495–99	Review the skills and concepts taught in Chapter 9.	**Activities** • Chapter 9 Review • Cumulative Review 9 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 9 Review exercises
Chapter 9 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 9.		**Assessments** • Chapter 9 Test **BJU Press Trove** • Chapter 9 test bank

Chapter 10: Trigonometry

Pages	Objectives	Resources	Assessments
10.1 Right Triangle Trigonometry			
502–7	10.1.1 Determine the 6 trigonometric ratios of an acute angle from given side lengths of a right triangle. 10.1.2 Find the remaining trigonometric ratios given 1 ratio. 10.1.3 Use a calculator to find trigonometric ratios of an acute angle. 10.1.4 Convert between degree-minute-second notation and decimal form.	**BJU Press Trove*** • Video: Design in Nature • PowerPoint presentation: Section 10.1 **AfterSchoolHelp.com** • Right Triangle Trigonometry	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 502)
10.2 Solving Right Triangles			
508–16	10.2.1 Solve right triangles using trigonometric ratios. 10.2.2 Determine exact trigonometric values for special angles. 10.2.3 Solve real-world problems involving right triangles. 10.2.4 Recall why we are able to recognize mathematical patterns. **BWS** Design (recall)	**Activities** • Triangles & Trigonometry • Math History—Hipparchus of Rhodes **BJU Press Trove** • Video: Airplane Navigation • PowerPoint presentation: Section 10.2 **AfterSchoolHelp.com** • Solving Right Triangles	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 508) **Assessments** • Quiz 10A (Sections 10.1–10.2)
10.3 Trigonometry in the Coordinate Plane			
517–23	10.3.1 Find the reference angle for any given angle measure. 10.3.2 Find trigonometric ratios for any given angle using reference angles.	**BJU Press Trove** • PowerPoint presentation: Section 10.3 **AfterSchoolHelp.com** • Trigonometry in the Coordinate Plane	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 517)

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Pages	Objectives	Resources	Assessments
10.4 Radians & the Unit Circle **(2 days)**			
524–30	10.4.1 Define a radian. 10.4.2 Convert between degree and radian measures of an angle. 10.4.3 Find the length of an arc. 10.4.4 Describe the unit circle. 10.4.5 Identify exact trigonometric values for common angles using the unit circle.	**Activities** • Radians & the Unit Circle **BJU Press Trove** • PowerPoint presentation: Section 10.4 **AfterSchoolHelp.com** • Radians & the Unit Circle	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 524) **Assessments** • Quiz 10B (Sections 10.3–10.4)
10.5 Graphs of Sine & Cosine Functions			
531–37	10.5.1 Graph sine and cosine functions. 10.5.2 Determine the amplitude and period of sinusoidal functions. 10.5.3 Defend the claim that patterns in nature give evidence of God's handiwork. **BWS** Design (formulate)	**Activities** • Sine & Cosine Functions • Using Technology—Graphing the Sine Function **BJU Press Trove** • PowerPoint presentation: Section 10.5 **AfterSchoolHelp.com** • Graphs of Sine & Cosine Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 531)
10.6 Graphs of Other Trigonometric Functions **(2 days)**			
538–43	10.6.1 Graph tangent functions. 10.6.2 Graph the reciprocal trigonometric functions. 10.6.3 Determine the domain, range, period, and any asymptotes of trigonometric functions.	**BJU Press Trove** • Video: Other Trigonometric Graphs • PowerPoint presentation: Section 10.6 **AfterSchoolHelp.com** • Graphs of Other Trigonometric Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 538) **Assessments** • Quiz 10C (Sections 10.5–10.6)

Pages	Objectives	Resources	Assessments
10.7 Translating Trigonometric Functions			
544–49	10.7.1 Translate the graphs of basic trigonometric functions. 10.7.2 Apply translated trigonometric functions to real-world problems. 10.7.3 Apply a biblical view of design to give praise to God for His power and wisdom. **BWS** Design (apply)	**Activities** • Graphs of Trigonometric Functions **BJU Press Trove** • PowerPoint presentation: Section 10.7 **AfterSchoolHelp.com** • Translating Trigonometric Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 544)
10.8 Inverse Trigonometric Functions			
550–56	10.8.1 Determine the domain and range of inverse trigonometric functions. 10.8.2 Graph inverse trigonometric functions. 10.8.3 Find values of inverse trigonometric functions.	**Activities** • Inverse Trigonometric Functions **BJU Press Trove** • Video: Inverse Trigonometric Functions • PowerPoint presentation: Section 10.8 **AfterSchoolHelp.com** • Inverse Trigonometric Functions	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 550) **Assessments** • Quiz 10D (Sections 10.7–10.8)
Application Problems—Modeling Tides			
557	10.AP.1 Create a sinusoidal model of a scatter plot of data. 10.AP.2 Evaluate the limitations of our models of tides and their use in capturing tidal energy. **BWS** Design (evaluate)		**Student Edition** • Exercises
Chapter 10 Review			
558–62	Review the skills and concepts taught in Chapter 10.	**Activities** • Chapter 10 Review • Cumulative Review 10 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 10 Review exercises

Pages	Objectives	Resources	Assessments
Chapter 10 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 10.		**Assessments** • Chapter 10 Test **BJU Press Trove** • Chapter 10 test bank
Third Quarter Review & Exam **(2 days)**			
	Review and demonstrate mastery of the skills and concepts taught in Chapters 8–10.		**Assessments** • Exam 3 **BJU Press Trove** • Chapters 8–10 test banks
STEM Project—Tornadoes **(2 days)**			
563	S.2.1 Create a tornado simulation in a bottle using the engineering design process. S.2.2 Research terms and conditions related to tornadoes. S.2.3 Describe conditions favorable for a tornado using the terms learned through research. S.2.4 Optimize the simulation by evaluating and modifying the design.	**Activities** • STEM—Tornadoes	**Activities** • STEM—Tornadoes project grading rubric

Chapter 11: Trigonometric Identities

Pages	Objectives	Resources	Assessments
11.1 Law of Sines			
566–71	11.1.1 Find the area of a triangle, given the lengths of 2 sides and the measure of the included angle. 11.1.2 State the Law of Sines. 11.1.3 Apply the Law of Sines to solve triangles. 11.1.4 Describe the ambiguous case (SSA).	**Activities** • Law of Sines **BJU Press Trove*** • Video: Trigonometric Identities • PowerPoint presentation: Section 11.1 **AfterSchoolHelp.com** • Law of Sines	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 566)
11.2 Law of Cosines **(2 days)**			
572–77	11.2.1 Apply the Law of Cosines to solve triangles. 11.2.2 Solve problems involving oblique triangles using the Law of Sines and the Law of Cosines. 11.2.3 Explain why the love of God should guide our use of mathematical knowledge. **BWS** Ethics (explain)	**Activities** • Law of Cosines • Law of Sines & Law of Cosines **BJU Press Trove** • Video: Emergency • PowerPoint presentation: Section 11.2 **AfterSchoolHelp.com** • Law of Cosines	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 572) **Assessments** • Quiz 11A (Sections 11.1–11.2)
11.3 Basic Identities			
578–84	11.3.1 Verify the reciprocal, quotient, and Pythagorean identities. 11.3.2 Use basic identities to simplify trigonometric expressions.	**BJU Press Trove** • PowerPoint presentation: Section 11.3 **AfterSchoolHelp.com** • Basic Identities	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 578)

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Pages	Objectives	Resources	Assessments
11.4 Verifying Identities			
585–89	11.4.1 Verify trigonometric identities.	**BJU Press Trove** • Video: Verifying Trigonometric Identities • PowerPoint presentation: Section 11.4 **AfterSchoolHelp.com** • Verifying Identities	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 585) **Assessments** • Quiz 11B (Sections 11.3–11.4)
11.5 Sum & Difference Identities **(2 days)**			
590–94	11.5.1 Apply the sum, difference, and double angle identities to find exact values of trigonometric functions. 11.5.2 Prove identities by using the sum, difference, and double angle identities.	**Activities** • Trigonometric Identities **BJU Press Trove** • Video: Moving Buildings • PowerPoint presentation: Section 11.5 **AfterSchoolHelp.com** • Sum & Difference Identities	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 590)
11.6 Trigonometric Equations **(2 days)**			
595–600	11.6.1 Solve trigonometric equations. 11.6.2 Solve real-world problems by writing and solving trigonometric equations. 11.6.3 Evaluate the claim that the use of mathematics is unaffected by the Fall. **BWS** Ethics (evaluate)	**Activities** • Using Technology—Solving Trigonometric Equations **BJU Press Trove** • PowerPoint presentation: Section 11.6 **AfterSchoolHelp.com** • Trigonometric Equations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 595) **Assessments** • Quiz 11C (Sections 11.5–11.6)

Pages	Objectives	Resources	Assessments
Application Problems—Surveying Triangulation			
601–2	11.AP.1 Determine an unknown distance using triangulation. 11.AP.2 Explain how surveying land can fulfill the command to exercise dominion and serve other people. **BWS** Ethics (explain)		**Student Edition** • Exercises
Chapter 11 Review			
603–7	Review the skills and concepts taught in Chapter 11.	**Activities** • Chapter 11 Review • Cumulative Review 11 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 11 Review exercises
Chapter 11 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 11.		**Assessments** • Chapter 11 Test **BJU Press Trove** • Chapter 11 test bank

Chapter 12: Sequences & Series

Pages	Objectives	Resources	Assessments
12.1 Introduction to Sequences			
610–16	12.1.1 Find any term of a sequence, given its explicit or recursive formula. 12.1.2 Use patterns to write an explicit or recursive formula for a given sequence. 12.1.3 Recall the role of reasoning in solving mathematical problems. **BWS** Reasoning (recall)	**BJU Press Trove*** • Video: Worldview Changes Reasoning • PowerPoint presentation: Section 12.1 **AfterSchoolHelp.com** • Introduction to Sequences	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 610)
12.2 Arithmetic Sequences			
617–22	12.2.1 Determine whether a sequence is arithmetic. 12.2.2 Write explicit and recursive formulas for arithmetic sequences. 12.2.3 Determine a given number of arithmetic means. 12.2.4 Apply formulas describing arithmetic sequences to solve real-world problems.	**Activities** • Arithmetic Sequences **BJU Press Trove** • PowerPoint presentation: Section 12.2 **AfterSchoolHelp.com** • Arithmetic Sequences	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 617) **Assessments** • Quiz 12A (Sections 12.1–12.2)
12.3 Geometric Sequences			
623–28	12.3.1 Determine whether a sequence is geometric. 12.3.2 Write explicit and recursive formulas for geometric sequences. 12.3.3 Determine a given number of geometric means. 12.3.4 Apply formulas describing geometric sequences to solve real-world problems.	**Activities** • Geometric Sequences **BJU Press Trove** • PowerPoint presentation: Section 12.3 **AfterSchoolHelp.com** • Geometric Sequences	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 623)

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Pages	Objectives	Resources	Assessments
12.4 Arithmetic Series & Sigma Notation			
629–34	12.4.1 Evaluate an arithmetic series. 12.4.2 Apply the formulas for an arithmetic series to solve real-world problems. 12.4.3 Evaluate a series written in sigma notation. 12.4.4 Write a series in sigma notation. 12.4.5 Evaluate the claim that mathematical reasoning can provide absolute certainty. **BWS** Reasoning (evaluate)	**BJU Press Trove** • PowerPoint presentation: Section 12.4 **AfterSchoolHelp.com** • Arithmetic Series & Sigma Notation	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 629) **Assessments** • Quiz 12B (Sections 12.3–12.4)
12.5 Geometric Series			
635–40	12.5.1 Evaluate a geometric series. 12.5.2 Apply the formulas for a geometric series to solve real-world problems. 12.5.3 Determine whether an infinite geometric series converges and find its sum if it does.	**Activities** • Arithmetic & Geometric Series • Repeating Decimals **BJU Press Trove** • PowerPoint presentation: Section 12.5 **AfterSchoolHelp.com** • Geometric Series	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 635)
12.6 Mathematical Induction			
641–45	12.6.1 Test whether a proposition is true. 12.6.2 Prove a proposition using the principle of mathematical induction. 12.6.3 Use a counterexample to show that a statement is false. 12.6.4 Formulate a position on the significance of our ability to reason using formal processes such as mathematical induction. **BWS** Reasoning (formulate)	**BJU Press Trove** • Video: Mathematical Induction • PowerPoint presentation: Section 12.6 **AfterSchoolHelp.com** • Mathematical Induction	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 641) **Assessments** • Quiz 12C (Sections 12.5–12.6)

Pages	Objectives	Resources	Assessments
Application Problems—Debt Management			
646–47	12.AP.1 Investigate the advantages of increasing monthly payments and obtaining a good interest rate. 12.AP.2 Apply biblical principles to make wise financial decisions. **BWS** Reasoning (apply)		**Student Edition** • Exercises
Chapter 12 Review			
648–51	Review the skills and concepts taught in Chapter 12.	**Activities** • Chapter 12 Review • Cumulative Review 12 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 12 Review exercises
Chapter 12 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 12.		**Assessments** • Chapter 12 Test **BJU Press Trove** • Chapter 12 test bank

Chapter 13: Probability & Statistics

Pages	Objectives	Resources	Assessments
13.1 Counting Principles			
654–59	13.1.1 Apply the Fundamental Counting Principle to solve problems. 13.1.2 Define factorials, permutations, and combinations. 13.1.3 Calculate factorials, permutations, and combinations. 13.1.4 Solve real-world problems using permutations and combinations. 13.1.5 Explain how counting principles can help us better protect people's personal information. **BWS** Ethics (recall)	**Activities** • Counting Principles **BJU Press Trove*** • Video: Math Knowledge • PowerPoint presentation: Section 13.1 **AfterSchoolHelp.com** • Counting Principles	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 654)
13.2 Basic Probability			
660–65	13.2.1 Distinguish between theoretical and experimental probability. 13.2.2 Calculate theoretical probabilities. 13.2.3 Calculate experimental probabilities.	**Activities** • Theoretical Probabilities **BJU Press Trove** • PowerPoint presentation: Section 13.2 **AfterSchoolHelp.com** • Basic Probability	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 660) **Assessments** • Quiz 13A (Sections 13.1–13.2)
13.3 Compound Events **(2 days)**			
666–71	13.3.1 Determine whether 2 events are independent or dependent. 13.3.2 Determine whether 2 events are inclusive or mutually exclusive. 13.3.3 Calculate the probability of compound events. 13.3.4 Calculate probabilities by using two-way tables.	**Activities** • Compound Events **BJU Press Trove** • Video: Seatbelt Safety • PowerPoint presentation: Section 13.3 **AfterSchoolHelp.com** • Compound Events	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 666)

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Pages	Objectives	Resources	Assessments
13.4 The Binomial Probability Distribution **(2 days)**			
672–79	13.4.1 Expand powers of binomials. 13.4.2 Find specific terms of a binomial expansion using the Binomial Theorem. 13.4.3 Identify binomial experiments. 13.4.4 Use a binomial probability distribution to describe a binomial experiment and find related probabilities.	**Activities** • The Binomial Probability Distribution **BJU Press Trove** • Video: Binomial Probability Distribution • PowerPoint presentation: Section 13.4 **AfterSchoolHelp.com** • The Binomial Probability Distribution	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 672) **Assessments** • Quiz 13B (Sections 13.3–13.4)
13.5 Describing Data **(2 days)**			
680–87	13.5.1 Calculate measures of central tendency and variability to compare sets of data. 13.5.2 Create box plots illustrating sets of data. 13.5.3 Evaluate the idea that data can be represented in misleading ways. **BWS** Ethics (evaluate)	**BJU Press Trove** • PowerPoint presentation: Section 13.5 **AfterSchoolHelp.com** • Describing Data	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 680)
13.6 Organizing Data **(2 days)**			
688–95	13.6.1 Use frequency distribution tables to calculate measures of central tendency and variability for sets of data. 13.6.2 Create interval frequency tables using Sturges' rule. 13.6.3 Use interval frequency tables to estimate the measures of central tendency and variability for sets of data. 13.6.4 Create histograms illustrating frequency tables. 13.6.5 Identify symmetric, positively skewed, and negatively skewed data.	**BJU Press Trove** • PowerPoint presentation: Section 13.6	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 688) **Assessments** • Quiz 13C (Sections 13.5–13.6)

Pages	Objectives	Resources	Assessments
13.7 The Normal Distribution **(2 days)**			
696–701	13.7.1 Determine the percent of data within a range of normally distributed values. 13.7.2 Calculate z-scores to compare normally distributed data. 13.7.3 Define percentile rank. 13.7.4 Solve real-world problems using the normal distribution and ***z***-scores.	**BJU Press Trove** • PowerPoint presentation: Section 13.7 **AfterSchoolHelp.com** • The Normal Distribution	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 696)
13.8 Making Inferences			
702–9	13.8.1 Describe the process of making a statistical inference. 13.8.2 Identify research designs and sample types. 13.8.3 Determine whether a sample is biased or unbiased. 13.8.4 Calculate the mean and standard deviation of data from a sample. 13.8.5 Determine a statistic's margin of error. 13.8.6 Propose guidelines for collecting and using data in a biblically faithful way. **BWS** Ethics (formulate)	**BJU Press Trove** • PowerPoint presentation: Section 13.8 **AfterSchoolHelp.com** • Making Inferences	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 702) **Assessments** • Quiz 13D (Sections 13.7–13.8)
Application Problems—Managing Risk			
710–11	13.AP.1 Apply statistics to real-world data relating to teenage motor vehicle crashes. 13.AP.2 Analyze risks contributing to teenage motor vehicle fatalities through statistical analysis. 13.AP.3 Plan a marketing piece that encourages safe driving. **BWS** Ethics (apply)		**Student Edition** • Exercises

Pages	Objectives	Resources	Assessments
Chapter 13 Review			
712–17	Review the skills and concepts taught in Chapter 13.	**Activities** • Chapter 13 Review • Cumulative Review 13 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 13 Review exercises
Chapter 13 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 13.		**Assessments** • Chapter 13 Test **BJU Press Trove** • Chapter 13 test bank

Chapter 14: Conic Sections & Quadratic Systems

Pages	Objectives	Resources	Assessments
14.1 Circles			
720–25	14.1.1 Describe conics as intersections of a conical surface and a plane. 14.1.2 Identify the center and radius of a circle from its standard-form equation. 14.1.3 Write the standard-form equation of a circle, given its center and radius. 14.1.4 Graph a circle from its standard-form equation. 14.1.5 Convert the equation of a circle to standard form. 14.1.6 Describe the factors that limit the effectiveness of a mathematical model. **BWS** Modeling (recall)	**Activities** • Math History—Carl Jacobi **BJU Press Trove*** • Video: Modeling Creation • PowerPoint presentation: Section 14.1 **AfterSchoolHelp.com** • Circles	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 720)
14.2 Parabolas			
726–30	14.2.1 Describe key characteristics of a parabola. 14.2.2 Write the standard-form equation of a parabola, given its key characteristics. 14.2.3 Graph a parabola, its directrix, and its focal point using the standard-form equation.	**Activities** • Circles & Parabolas • Area under a Curve **BJU Press Trove** • PowerPoint presentation: Section 14.2 **AfterSchoolHelp.com** • Parabolas	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 726) **Assessments** • Quiz 14A (Sections 14.1–14.2)
14.3 Ellipses			
731–37	14.3.1 Describe key characteristics of an ellipse. 14.3.2 Graph an ellipse with its foci. 14.3.3 Write the standard-form equation of an ellipse, given its key characteristics. 14.3.4 Construct an explanation of the usefulness of modeling in relation to Kepler's development of modeling planetary orbits. **BWS** Modeling (formulate)	**Activities** • Ellipses **BJU Press Trove** • PowerPoint presentation: Section 14.3 **AfterSchoolHelp.com** • Ellipses	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 731)

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Pages	Objectives	Resources	Assessments
14.4 Hyperbolas			
738–43	14.4.1 Describe key characteristics of a hyperbola. 14.4.2 Graph a hyperbola with its foci and asymptotes. 14.4.3 Write the standard-form equation of a hyperbola, given its key characteristics.	**Activities** • Hyperbolas **BJU Press Trove** • PowerPoint presentation: Section 14.4 **AfterSchoolHelp.com** • Hyperbolas	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 738) **Assessments** • Quiz 14B (Sections 14.3–14.4)
14.5 Identifying Conics			
744–48	14.5.1 Describe conics as intersections of a conical surface and a plane. 14.5.2 Identify a conic section from its general equation. 14.5.3 Identify the center or vertex of a translated conic section by completing the square. 14.5.4 Graph inequalities involving conic sections.	**BJU Press Trove** • PowerPoint presentation: Section 14.5 **AfterSchoolHelp.com** • Identifying Conics	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 744)
14.6 Systems with Quadratic Relations			
749–54	14.6.1 Solve systems containing quadratic equations graphically. 14.6.2 Solve systems containing quadratic equations algebraically. 14.6.3 Formulate a statement on how mathematical modeling can fuel the pursuit of learning. **BWS** Modeling (formulate)	**Activities** • Using Technology—Solving Quadratic Systems **BJU Press Trove** • PowerPoint presentation: Section 14.6 **AfterSchoolHelp.com** • Systems with Quadratic Relations	**Student Edition** • Skill Checks • Exercises **Teacher Edition** • Bell ringer (p. 749) **Assessments** • Quiz 14C (Sections 14.5–14.6)

Pages	Objectives	Resources	Assessments
Application Problems—Modeling the Solar System			
755–56	14.AP.1 Define eccentricity. 14.AP.2 Classify conic sections according to their eccentricity. 14.AP.3 Model the orbits of celestial bodies, given their eccentricity and perihelion. 14.AP.4 Write a reflection on God's glory and the mathematical precision of the solar system. **BWS** Modeling (apply)		**Student Edition** • Exercises
Chapter 14 Review			
757–61	Review the skills and concepts taught in Chapter 14.	**Activities** • Chapter 14 Review • Cumulative Review 14 **BJU Press Trove** • Game: Mathardy	**Student Edition** • Chapter 14 Review exercises
Chapter 14 Test			
	Demonstrate mastery of the skills and concepts taught in Chapter 14.		**Assessments** • Chapter 14 Test **BJU Press Trove** • Chapter 14 test bank
Fourth Quarter Review & Exam **(3 days)**			
	Review and demonstrate mastery of the skills and concepts taught in Chapters 11–14.		**Assessments** • Exam 4 **BJU Press Trove** • Chapters 11–14 test banks