Pre-Algebra 3rd Edition – Lesson Plan Overview

Chapter 1: Operations with Integers

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | | Assessments |
| 1.1 Opposites and Absolute Value | | | | | |
| 1–6 | 1.1.1 Order integers by using number lines.  1.1.2 Explain that the usefulness of number lines depends on the assumption of an orderly world.  BWS  Design: Creation (explain)  1.1.3 State the opposite of an integer.  1.1.4 Find the absolute value of an integer. | Materials   * number line paper * number line for display (Use internet keyword search printable number line.) | AfterSchoolHelp.com   * Opposites and  Absolute Value | | * Bell ringer (p. 1) * Skill Checks (pp. 1–4) * Exercises |
| 1.2 Adding and Subtracting Integers | | | | | |
| 7–13 | 1.2.1 Evaluate a sum of integers by using a number line and by applying rules.  1.2.2 Evaluate a difference of integers as the sum of the opposite.  1.2.3 Explain what it means to number.  BWS  Design: Creation (explain) | Activities   * Sum Circles * Adding and  Subtracting Integers | AfterSchoolHelp.com   * Adding and  Subtracting Integers | | * Bell ringer (p. 7) * Skill Checks  (pp. 8–9, 11) * Exercises |
| 1.3 Properties of Addition | | | | | |
| 14–19 | 1.3.1 Identify the properties of addition.  1.3.2 Use the properties of addition to write equivalent expressions.  1.3.3 Determine whether a given set of numbers is closed under addition. | Activity   * Properties of Addition   Assessment   * Quiz 1A | AfterSchoolHelp.com   * Properties of Addition | | * Bell ringer (p. 14) * Skill Checks  (pp. 15–17) * Exercises * Quiz 1A (Sections 1.1–1.3) |
| Activity: Clock Arithmetic | | | | | |
|  |  | Activity   * Clock Arithmetic | |  | * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 1.4 Multiplying and Dividing Integers | | | | |
| 20–27 | 1.4.1 Evaluate a product of integers.  1.4.2 Evaluate a quotient of integers.  1.4.3 Explain how multiplication and division help people organize and predict.  BWS  Design: Creation (explain) | Activity   * Multiplying and  Dividing Integers | AfterSchoolHelp.com   * Multiplying and  Dividing Integers | * Bell ringer (p. 20) * Skill Checks  (pp. 21–22, 24) * Exercises |
| 1.5 Properties of Multiplication | | | | |
| 28–33 | 1.5.1 Identify the properties of multiplication.  1.5.2 Apply the properties of multiplication to write equivalent expressions.  1.5.3 Determine whether a set of numbers is closed under multiplication. | Activity   * Properties of Multiplication   Assessment   * Quiz 1B | AfterSchoolHelp.com   * Properties of Multiplication | * Bell ringer (p. 28) * Skill Checks  (pp. 29, 31) * Exercises * Quiz 1B (Sections 1.4–1.5) |
| Problem Solving—Introduction | | | | |
| 34–35 | 1.PS.1 Apply the four-point checklist to solve problems involving the operations of arithmetic. | Activity   * Problem Solving |  | * Exercises |
| 1.6 Exponents | | | | |
| 36–40 | 1.6.1 Write products with repeated factors in exponential form.  1.6.2 Expand exponential expressions.  1.6.3 Evaluate exponential expressions. |  | AfterSchoolHelp.com   * Exponents | * Bell ringer (p. 36) * Skill Checks  (pp. 37–38) * Exercises |
| 1.7 Properties of Powers | | | | |
| 41–46 | 1.7.1 Apply product, power, and quotient properties of powers.  1.7.2 Interpret an exponent of 0 and negative integral exponents.  1.7.3 Simplify exponential expressions with integral powers. | Activity   * Creation Wonders—Invisible Things   Assessment   * Quiz 1C | Teacher Tools Online   * Video: Computing—then & now   AfterSchoolHelp.com   * Properties of Powers | * Bell ringer (p. 41) * Skill Checks  (pp. 42–44) * Exercises * Quiz 1C (Sections 1.6–1.7) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 1.8 Roots | | | | |
| 47–52 | 1.8.1 Evaluate square roots of perfect squares.  1.8.2 Evaluate cube roots of perfect cubes.  1.8.3 Estimate other square and cube roots by determining the integers a root lies between. |  | AfterSchoolHelp.com   * Roots | * Bell ringer (p. 47) * Skill Checks  (pp. 48, 50–51) * Exercises |
| 1.9 Order of Operations | | | | |
| 53–57 | 1.9.1 State the order of operations.  1.9.2 Apply the order of operations to evaluate numerical expressions. | Activities   * Calculator Skills 1 * Math & Scripture—Daniel’s Influence   Assessment   * Quiz 1D | AfterSchoolHelp.com   * Order of Operations | * Bell ringer (p. 53) * Skill Checks  (pp. 53, 55–56) * Exercises * Quiz 1D  (Sections 1.8–1.9) |
| Application Problems—Temperature Conversion | | | | |
| 58–59 | 1.AP.1 Use integer operations to solve real-world problems. |  | Teacher Tools Online   * Video: Temperature | * Exercises |
| Chapter 1 Review | | | | |
| 60–63 | Review the skills and concepts taught in Chapter 1. | Activities   * Chapter 1 Review * Cumulative Review 1 | Teacher Tools Online   * Game: Mathardy | * Chapter 1 Review |
| Chapter 1 Test | | | | |
|  | Demonstrate knowledge of concepts from Chapter 1. | Assessment   * Chapter 1 Test | Teacher Tools Online   * ExamView: Chapter 1 test bank | * Chapter 1 Test |

Chapter 2: Expressions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 2.1 Evaluating Expressions | | | | |
| 65–70 | 2.1.1 Evaluate algebraic expressions, given the value of each variable.  2.1.2 Identify the terms, coefficients, and the constant term in an algebraic expression. | Activity   * Calculator Skills 2 | AfterSchoolHelp.com   * Evaluating Expressions | * Bell ringer (p. 65) * Skill Checks  (pp. 66, 68) * Exercises |
| 2.2 The Distributive Property | | | | |
| 71–76 | 2.2.1 Apply the Distributive Property to write equivalent expressions.  2.2.2 Model a real-world situation with the Distributive Property.  BWS  Design: Fall and Redemption (formulate) | Activity   * The Distributive Property   Assessment   * Quiz 2A | Teacher Tools Online   * Video: Gyroscopes—then & now   AfterSchoolHelp.com   * Distributive Property | * Bell ringer (p. 71) * Skill Checks  (pp. 72–73) * Exercises * Quiz 2A  (Sections 2.1–2.2) |
| Activity: Algebraic Proofs | | | | |
|  |  | Activity   * Algebraic Proofs |  | * Exercises |
| 2.3 Simplifying Expressions | | | | |
| 77–80 | 2.3.1 Simplify algebraic expressions by using the Commutative and Associative Properties.  2.3.2 Simplify algebraic expressions by using the Distributive Property to combine like terms. |  | AfterSchoolHelp.com   * Simplifying Expressions | * Bell ringer (p. 77) * Skill Checks  (pp. 77, 79) * Exercises |
| 2.4 Translating Word Phrases | | | | |
| 81–85 | 2.4.1 Translate a word phrase into a numerical expression.  2.4.2 Translate a word phrase into an algebraic expression. | Assessment   * Quiz 2B | AfterSchoolHelp.com   * Translating Word Phrases | * Bell ringer (p. 81) * Skill Checks  (pp. 82–83) * Exercises * Quiz 2B (Sections 2.3–2.4) |
| Problem Solving—Select the Right Operations | | | | |
| 86–87 | 2.PS.1 Apply the strategy of selecting the operations to solve problems. | Activity   * Problem Solving—Select the Right Operations |  | * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 2.5 Scientific Notation | | | | |
| 88–94 | 2.5.1 Convert numbers from standard form to scientific notation.  2.5.2 Convert numbers from scientific notation to standard form.  2.5.3 Determine the number of significant digits in a measurement.  2.5.4 Explain the purpose of scientific notation.  BWS  Design: Fall and Redemption (explain) | Activities   * Scientific Notation * Creation Wonders—Revelation of the Stars | AfterSchoolHelp.com   * Scientific Notation | * Bell ringer (p. 89) * Skill Checks (pp. 89–90, 92) * Exercises |
| 2.6 Estimating | | | | |
| 95–101 | 2.6.1 Round a number to an indicated place value.  2.6.2 Estimate a sum or a difference.  2.6.3 Estimate a product or a quotient. | Activities   * Left-to-Right Mental Arithmetic * Math & Scripture—Joseph’s On-the-Job Training   Assessment   * Quiz 2C | AfterSchoolHelp.com   * Estimating | * Bell ringer (p. 95) * Skill Checks  (pp. 96–98) * Exercises * Quiz 2C (Sections 2.5–2.6) |
| Application Problems—Calculating Fitness | | | | |
| 102–3 | 2.AP.1 Calculate values related to physical fitness.  2.AP.2 Relate physical fitness to the command of exercising dominion.  BWS  Design: Fall and Redemption (explain) |  | Teacher Tools Online   * Video: Fitness | * Exercises |
| Chapter 2 Review | | | | |
| 104–6 | Review the skills and concepts taught in Chapter 2. | Activities   * Chapter 2 Review * Cumulative Review 2 | Teacher Tools Online   * Game: Mathardy | * Chapter 2 Review |
| Chapter 2 Test | | | | |
|  | Demonstrate knowledge of concepts from Chapter 2. | Assessment   * Chapter 2 Test | Teacher Tools Online   * ExamView: Chapter 2 test bank | * Chapter 2 Test |
| STEM Project—Potato Power | | | | |
| 107 | Build an electrical circuit by using science, technology, engineering, and math. | Activity   * STEM—Potato Power | Teacher Tools Online   * Video: Potato Power | * Potato Power Project Rubric |

Chapter 3: Equations and Inequalities

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 3.1 Solving Equations by Adding or Subtracting | | | | |
| 109–15 | 3.1.1 Solve equations by adding or subtracting.  3.1.2 Solve real-world problems by using addition or subtraction equations. | Activity   * Creation Wonders—Earth | AfterSchoolHelp.com   * Solving Equations with Addition and Subtraction | * Bell ringer (p. 109) * Skill Checks (pp. 110, 112–13) * Exercises |
| 3.2 Solving Equations by Multiplying or Dividing | | | | |
| 116–21 | 3.2.1 Solve equations by multiplying or dividing.  3.2.2 Solve real-world problems by using multiplication or division equations. |  | AfterSchoolHelp.com   * Solving Equations with Multiplication and Division | * Bell ringer (p. 116) * Skill Checks (pp. 117, 119) * Exercises |
| Activity: Magic Squares | | | | |
|  |  | Activity   * Magic Squares |  | * Exercises |
| 3.3 Solving Two-Step Equations | | | | |
| 122–27 | 3.3.1 Solve two-step equations.  3.3.2 Solve real-world problems by using two-step equations. | Activity   * Equations:  Working Backward   Assessment   * Quiz 3A | AfterSchoolHelp.com   * Solving Two-Step Equations | * Bell ringer (p. 122) * Skill Checks (pp. 123–24) * Exercises * Quiz 3A (Sections 3.1–3.3) |
| Problem Solving—Guess and Check | | | | |
| 128–29 | 3.PS.1 Apply the strategy of guess and check to solve problems. | Activity   * Problem  Solving—Guess and Check |  | * Exercises |
| 3.4 Simplifying before Solving | | | | |
| 130–36 | 3.4.1 Solve equations that have like terms.  3.4.2 Solve equations that have parentheses. | Activity   * Simplify before Solving | AfterSchoolHelp.com   * Simplifying before Solving | * Bell ringer (p. 130) * Skill Checks (pp. 131, 134) * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 3.5 Using Equations | | | | |
| 137–44 | 3.5.1 Translate real-world problems into equations.  3.5.2 Solve equations related to real-world problems.  3.5.3 Interpret the solution to an equation related to a real-world problem.  3.5.4 Explain why we are able to use equations to effectively model real-world relationships.   BWS  Knowledge: Creation (explain) | Activity   * Calculator Skills 3   Assessment   * Quiz 3B | Teacher Tools Online   * Video: Radar Imaging—then & now   AfterSchoolHelp.com   * Using Equations | * Bell ringer (p. 137) * Skill Checks (pp. 139–40) * Exercises * Quiz 3B (Sections 3.4–3.5) |
| 3.6 Solving Inequalities | | | | |
| 145–51 | 3.6.1 Determine whether a given number is a solution to an inequality.  3.6.2 Graph an inequality on a number line.  3.6.3 Solve simple inequalities algebraically. | Activity   * Solving One- and Two-Step Inequalities | AfterSchoolHelp.com   * Solving Linear Inequalities | * Bell ringer (p. 145) * Skill Checks (pp. 146, 148–49) * Exercises |
| 3.7 Using Inequalities | | | | |
| 152–57 | 3.7.1 Explain how modeling real-world relationships with inequalities imitates God’s work.   BWS  Knowledge: Creation (explain)  3.7.2 Translate real-world problems related to unequal quantities into inequalities.  3.7.3 Solve simple inequalities related to real-world problems.  3.7.4 Interpret the solution to an inequality related to a real-world problem. | Activity   * Math &  Scripture—King David’s Unwise Census   Assessment   * Quiz 3C | AfterSchoolHelp.com   * Using Inequalities | * Bell ringer (p. 152) * Skill Checks (pp. 153, 155) * Exercises * Quiz 3C (Sections 3.6–3.7) |
| Application Problems—Managing Pollutants | | | | |
| 158–59 | 3.AP.1 Calculate values related to pollution management.  3.AP.2 Relate pollution management to the biblical principle of exercising dominion.   BWS  Knowledge: Creation (explain) |  | Teacher Tools Online   * Video: Environmental Engineering | * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| Chapter 3 Review | | | | |
| 160–63 | Review the skills and concepts taught in Chapter 3. | Activities   * Chapter 3 Review * Cumulative  Review 3 | Teacher Tools Online   * Game: Mathardy | * Chapter 3 Review |
| Chapter 3 Test | | | | |
|  | Demonstrate knowledge of concepts from Chapter 3. | Assessment   * Chapter 3 Test | Teacher Tools Online   * ExamView: Chapter 3 test bank | * Chapter 3 Test |
| First Quarter Review and Exam (3 days) | | | | |
|  | Review and demonstrate knowledge of concepts from Chapters 1–3. | Assessment   * Exam 1 | Teacher Tools Online   * ExamView: Chapters 1–3 test banks | * Exam 1 |

Chapter 4: Rational Expressions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 4.1 Prime Factorization | | | | |
| 165−71 | 4.1.1 State the factors of a natural number.  4.1.2 Classify a natural number as prime, composite, or neither.  4.1.3 Determine the prime factorization of a natural number.  4.1.4 Explain why someone might think mathematics is objective truth.   BWS  Knowledge: Fall and Redemption (evaluate) | Activities   * Creation Wonders—The Flood * Prime and Composite Numbers * Perfect, Deficient, and Abundant Numbers | AfterSchoolHelp.com   * Prime Factorization | * Bell ringer (p. 165) * Skill Checks  (pp. 166–67, 169) * Exercises |
| 4.2 Greatest Common Factor | | | | |
| 172−76 | 4.2.1 Determine the greatest common factor of several natural numbers.  4.2.2 State whether 2 numbers or expressions are relatively prime.  4.2.3 Determine the greatest common factor of several simple algebraic expressions. |  | AfterSchoolHelp.com   * Greatest Common Factor | * Bell ringer (p. 172) * Skill Checks  (pp. 172–73, 175) * Exercises |
| 4.3 Least Common Multiple | | | | |
| 177−81 | 4.3.1 Determine the least common multiple of several natural numbers.  4.3.2 Determine the least common multiple of several algebraic expressions. | Activity   * GCF and LCM   Assessment   * Quiz 4A | Teacher Tools Online   * Video: GCF and LCM   AfterSchoolHelp.com   * Least Common Multiple | * Bell ringer (p. 177) * Skill Checks  (pp. 178–79) * Exercises * Quiz 4A  (Sections 4.1–4.3) |
| Problem Solving—Look for a Pattern | | | | |
| 182−83 | 4.PS.1 Use patterns to find a solution. | Activity   * Problem Solving—Patterns |  | * Exercises |
| Activity: Pascal’s Triangle | | | | |
|  |  | Activity   * Pascal’s Triangle |  | * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 4.4 Rational Numbers | | | | |
| 184−90 | 4.4.1 Identify equivalent fractions.  4.4.2 Reduce fractions to lowest terms.  4.4.3 Convert between improper fractions and mixed numbers.  4.4.4 Compare fractions with different denominators. | Activities   * Rational Number Forms * Math & Scripture—Daniel’s Seventy Weeks | AfterSchoolHelp.com   * Rational Numbers | * Bell ringer (p. 184) * Skill Checks  (pp. 185–87, 189) * Exercises |
| 4.5 Decimal Equivalents | | | | |
| 191−97 | 4.5.1 Convert between equivalent fractional and decimal forms of a rational number.  4.5.2 Order a set of rational numbers containing terminating and repeating decimals. | Activity   * Patterns with Fractions   Assessment   * Quiz 4B | Teacher Tools Online   * Video: Sorting Mail—then & now   AfterSchoolHelp.com   * Converting Decimals to Fractions | * Bell ringer (p. 191) * Skill Checks  (pp. 192, 194–95) * Exercises * Quiz 4B  (Sections 4.4–4.5) |
| 4.6 Ratios and Proportions | | | | |
| 198− 203 | 4.6.1 Compare quantities by using ratios and rates.  4.6.2 Solve proportions.  4.6.3 Apply proportions to solve real-world problems. | Activity   * Solving Problems with Proportions | AfterSchoolHelp.com   * Ratios and Proportions | * Bell ringer (p. 198) * Skill Checks  (pp. 199–200) * Exercises |
| 4.7 The Real Number System | | | | |
| 204−9 | 4.7.1 Model the relationships between major subsets of the real numbers with a Venn diagram.  4.7.2 Classify real numbers as natural, whole, integer, rational, or irrational.  4.7.3 Identify the properties of addition and multiplication when applied to various real numbers.  4.7.4 Explain how our classifications of the real number system demonstrate elements of both God’s creation and people’s creative work.   BWS  Knowledge: Fall and Redemption (explain) | Activity   * Calculator Skills 4   Assessment   * Quiz 4C | Teacher Tools Online   * Art: Venn diagram of the sets of numbers   AfterSchoolHelp.com   * Real Numbers | * Bell ringer (p. 204) * Skill Checks (pp. 206–7) * Exercises * Quiz 4C  (Sections 4.6–4.7) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| Application Problems—Coding Information | | | | |
| 210−12 | 4.AP.1 Calculate modulo values.  4.AP.2 Use modular arithmetic to encrypt and decrypt. |  | Teacher Tools Online   * Video: Cryptography | * Exercises |
| Chapter 4 Review | | | | |
| 213−15 | Review the skills and concepts taught in Chapter 4. | Activities   * Chapter 4 Review * Cumulative Review 4 | Teacher Tools Online   * Game: Mathardy | * Chapter 4 Review |
| Chapter 4 Test | | | | |
|  | Demonstrate knowledge of concepts from Chapter 4. | Assessment   * Chapter 4 Test | Teacher Tools Online   * ExamView: Chapter 4 test bank | * Chapter 4 Test |

Chapter 5: Operations with Rational Numbers

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 5.1 Sums and Differences | | | | |
| 217–22 | 5.1.1 Evaluate sums and differences of like and unlike fractions.  5.1.2 Evaluate sums and differences of mixed numbers.  5.1.3 Evaluate sums and differences of decimals. | Activities   * Creation Wonders—Trees * Addition and Subtraction of Rational Numbers * Pascal’s Triangle and Fractions | AfterSchoolHelp.com   * Adding and Subtracting Rational Numbers | * Bell ringer (p. 217) * Skill Checks (pp. 218–19, 221) * Exercises |
| 5.2 Products and Powers | | | | |
| 223–27 | 5.2.1 Multiply fractions, mixed numbers, and integers.  5.2.2 Multiply decimals.  5.2.3 Evaluate powers of rational numbers. | Activity   * Multiplication of Fractions | AfterSchoolHelp.com   * Multiplying Rational Numbers | * Bell ringer (p. 223) * Skill Checks (pp. 224–26) * Exercises |
| 5.3 Quotients and Roots | | | | |
| 228–33 | 5.3.1 Divide fractions, mixed numbers, and integers.  5.3.2 Divide decimals by an integer or a decimal.  5.3.3 Evaluate rational roots.  5.3.4 Estimate irrational square and cube roots to the nearest tenth. | Assessment   * Quiz 5A | AfterSchoolHelp.com   * Dividing Rational Numbers | * Bell ringer (p. 228) * Skill Checks (pp. 229–31) * Exercises * Quiz 5A (Sections 5.1–5.3) |
| Activity: Multiplication and Division of Rational Numbers | | | | |
|  |  | Activity   * Multiplication and Division of Rational Numbers |  | * Exercises |
| Problem Solving—Draw a Picture | | | | |
| 234–35 | 5.PS.1 Use a diagram as an aid to solving a problem. | Activity   * Problem Solving—Draw a Picture |  | * Exercises |
| 5.4 Evaluating Algebraic Expressions | | | | |
| 236–41 | 5.4.1 Evaluate algebraic expressions with rational values for the variables.  5.4.2 Explain how algebraic expressions help us model the real world.   BWS  Reasoning: Creation (explain) |  | AfterSchoolHelp.com   * Evaluating Algebraic Expressions | * Bell ringer (p. 236) * Skill Checks (pp. 237, 239) * Exercises |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 5.5 Simplifying Algebraic Expressions (2 days) | | | | |
| 242–47 | 5.5.1 Simplify algebraic expressions with rational coefficients. | Assessment   * Quiz 5B | Teacher Tools Online   * Video: Simplifying Expressions * Video: Bicycles—then & now   AfterSchoolHelp.com   * Simplifying Algebraic Expressions | * Bell ringer (p. 242) * Skill Checks (pp. 243, 245) * Exercises * Quiz 5B (Sections 5.4–5.5) |
| 5.6 Solving Equations with Rational Numbers | | | | |
| 248–53 | 5.6.1 Solve equations containing rational numbers.  5.6.2 Explain why we want to model the real world.   BWS  Reasoning: Creation (explain) |  | AfterSchoolHelp.com   * Solving Equations with Rational Numbers | * Bell ringer (p. 248) * Skill Checks (pp. 249–50) * Exercises |
| 5.7 Using Equations to Solve Problems (2 days) | | | | |
| 254–59 | 5.7.1 Translate the statement of a real-world problem into an equation.  5.7.2 Solve equations related to real-world problems involving rational numbers.  5.7.3 Interpret the solution to an equation related to a real-world problem.  5.7.4 Explain why mathematical models are so effective.   BWS  Reasoning: Creation (explain) |  | AfterSchoolHelp.com   * Using Equations | * Bell ringer (p. 254) * Skill Checks (pp. 255, 257) * Exercises |
| 5.8 Operations with Scientific Notation | | | | |
| 260–65 | 5.8.1 Evaluate products and quotients of numbers in scientific notation.  5.8.2 Evaluate sums and differences of numbers in scientific notation.  5.8.3 Apply operations in scientific notation to solve real-world problems. | Activities   * Calculator Skills 5 * Math & Scripture—The Wilderness Tabernacle   Assessment   * Quiz 5C | AfterSchoolHelp.com   * Operations with Scientific Notation | * Bell ringer (p. 260) * Skill Checks (pp. 261–63) * Exercises * Quiz 5C (Sections 5.6–5.8) |
| Application Problems—Tour de Ratio | | | | |
| 266–67 | 5.AP.1 Calculate gear ratios and apply the ratios to real-life applications. |  | Teacher Tools Online   * Video: Racing Bikes | * Exercises |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| Chapter 5 Review | | | | |
| 268–70 | Review the skills and concepts taught in Chapter 5. | Activities   * Chapter 5 Review * Cumulative Review 5 | Teacher Tools Online   * Game: Mathardy | * Chapter 5 Review |
| Chapter 5 Test | | | | |
|  | Demonstrate knowledge of concepts from Chapter 5. | Assessment   * Chapter 5 Test | Teacher Tools Online   * ExamView: Chapter 5 test bank | * Chapter 5 Test |
| STEM Project—Building a Radio Receiver | | | | |
| 271 | Build an AM radio receiver by using science, technology, engineering, and math. | Activity   * STEM—Building a Radio Receiver | Teacher Tools Online   * Video: Building a Radio Receiver | * Building a Radio Receiver Project Rubric |

Chapter 6: Percents

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 6.1 Forms of Percents | | | | |
| 273–78 | 6.1.1 Convert between equivalent percents, decimals, and fractions. | Activities   * Creation Wonders—The Human Cell * Visualizing Percent | AfterSchoolHelp.com   * Forms of Percents | * Bell ringer (p. 273) * Skill Checks (pp. 274–75, 277) * Exercises |
| 6.2 Solving Percent Equations | | | | |
| 279–85 | 6.2.1 Solve percent problems using the percent formula.  6.2.2 Solve percent problems using a proportion. |  | AfterSchoolHelp.com   * Solving Percent Equations | * Bell ringer (p. 279) * Skill Checks (pp. 280–83) * Exercises |
| Activity: Solving Percent Equations | | | | |
|  |  | Activity   * Solving Percent Equations |  | * Exercises |
| 6.3 Using Percents | | | | |
| 286–93 | 6.3.1 Solve real-world problems involving percents.  6.3.2 Explain how an accurate claim involving percents can be misleading.   BWS  Reasoning: Fall and Redemption (explain) | Assessment   * Quiz 6A | AfterSchoolHelp.com   * Using Percents | * Bell ringer (p. 286) * Skill Checks (pp. 287, 289) * Exercises * Quiz 6A (Sections 6.1–6.3) |
| Problem Solving—Divide and Conquer | | | | |
| 294–95 | 6.PS.1 Use the “divide and conquer” strategy to solve real-world problems. | Activity   * Problem Solving— Divide and Conquer |  | * Exercises |
| 6.4 Discount and Markup | | | | |
| 296–302 | 6.4.1 Find the original retail price, discount, discount rate, or sale price of items on sale.  6.4.2 Find the cost, markup, markup rate, or retail price for items marked up for resale.  6.4.3 Explain how a sales advertisement can use accurate percent statements in a misleading way.   BWS  Reasoning: Fall and Redemption (explain) |  | AfterSchoolHelp.com   * Discount and Markup | * Bell ringer (p. 296) * Skill Checks (pp. 297, 299) * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 6.5 Tips and Commission | | | | |
| 303–8 | 6.5.1 Determine an appropriate tip or percent of the bill.  6.5.2 Find the commission rate, earnings, or sales amount.  6.5.3 Explain the importance of calculating tips and commission-based earnings.   BWS  Reasoning: Fall and Redemption (explain) | Activity   * Graduated Commission   Assessment   * Quiz 6B | AfterSchoolHelp.com   * Tips and Commission | * Bell ringer (p. 303) * Skill Checks (pp. 304–5) * Exercises * Quiz 6B (Sections 6.4–6.5) |
| 6.6 Interest | | | | |
| 309–16 | 6.6.1 Calculate the interest earned and final balance for simple interest problems.  6.6.2 Calculate the final balance and interest earned for compound interest problems. |  | Teacher Tools Online   * Video: Copy  Machines—then & now   AfterSchoolHelp.com   * Interest | * Bell ringer (p. 309) * Skill Checks (pp. 310, 312) * Exercises |
| Activity: Calculator Skills 6 | | | | |
|  |  | Activity   * Calculator Skills 6 |  | * Exercises |
| 6.7 Percent Change | | | | |
| 317–21 | 6.7.1 Find the new amount when given an original amount and the percent change.  6.7.2 Find the percent change when given the original amount and the amount of change. | Activity   * Using Percents | AfterSchoolHelp.com   * Percent Change | * Bell ringer (p. 317) * Skill Checks (pp. 318–19) * Exercises |
| 6.8 Scales | | | | |
| 322–27 | 6.8.1 Find actual and modeled lengths.  6.8.2 Find the scale of models, given actual and modeled lengths.  6.8.3 Perform calculations related to enlargements and reductions. | Activities   * Scale Drawings * Math & Scripture—Solomon’s Temple   Assessment   * Quiz 6C | AfterSchoolHelp.com   * Scales | * Bell ringer (p. 322) * Skill Checks (pp. 323, 325) * Exercises * Quiz 6C (Sections 6.6–6.8) |
| Application Problems—Profit or Loss? | | | | |
| 328–29 | 6.AP.1 Apply the skills and concepts taught in Chapter 6 in business-related scenarios. |  | Teacher Tools Online   * Video: Entrepreneurship | * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| Chapter 6 Review | | | | |
| 330–33 | Review the skills and concepts taught in Chapter 6. | Activities   * Chapter 6 Review * Cumulative Review 6 | Teacher Tools Online   * Game: Mathardy | * Chapter 6 Review |
| Chapter 6 Test | | | | |
|  | Demonstrate knowledge of concepts from Chapter 6. | Assessment   * Chapter 6 Test | Teacher Tools Online   * ExamView: Chapter 6 test bank | * Chapter 6 Test |
| Second Quarter Review and Exam (3 days) | | | | |
|  | Review and demonstrate knowledge of concepts from Chapters 4–6. | Assessment   * Exam 2 | Teacher Tools Online   * ExamView: Chapters 4–6 test banks | * Exam 2 |

Chapter 7: Applying Equations and Inequalities

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 7.1 Variables on Both Sides | | | | |
| 335–39 | 7.1.1 Solve equations with the variable on both sides of the equation. | Activities   * Creation Wonders—The Human Heart * Solving Equations with Variables on Both Sides | AfterSchoolHelp.com   * Variables on Both Sides | * Bell ringer (p. 335) * Skill Checks (pp. 336, 338) * Exercises |
| 7.2 Identities and Contradictions | | | | |
| 340–43 | 7.2.1 Identify linear equations that have one solution as conditional equations.  7.2.2 Identify linear equations that have an infinite  number of solutions as identities.  7.2.3 Identify linear equations that have no solution as contradictions. | Activities   * Equations, Identities, and Contradictions * Calculator Skills 7 | AfterSchoolHelp.com   * Identities and Contradictions | * Bell ringer (p. 340) * Skill Checks (pp. 340–42) * Exercises |
| Problem Solving—Write and Solve an Equation | | | | |
| 344–46 | 7.PS.1 Use the problem-solving strategy of writing an equation to solve a word problem. | Activity   * Problem Solving— Equations and Inequalities |  | * Exercises |
| 7.3 Applying Equations | | | | |
| 347–54 | 7.3.1 Solve more advanced word problems by writing and solving an equation.  7.3.2 Solve problems involving consecutive integers.  7.3.3 Solve more advanced problems related to distance, rate, and time. | Assessment   * Quiz 7A | Teacher Tools Online   * Video: Recording Sound—then & now   AfterSchoolHelp.com   * Applying Equations | * Bell ringer (p. 347) * Skill Checks (pp. 348–50) * Exercises * Quiz 7A (Sections 7.1–7.3) |
| 7.4 Solving Inequalities | | | | |
| 355–59 | 7.4.1 Solve inequalities with parentheses and variables on both sides.  7.4.2 Graph solutions to inequalities on a number line. | Materials   * number line paper * number line for display (Use internet keyword search printable number line.) | Teacher Tools Online   * Video: Solving Inequalities   AfterSchoolHelp.com   * Solving Inequalities | * Bell ringer (p. 355) * Skill Checks (pp. 356, 358) * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 7.5 Applying Inequalities | | | | |
| 360–65 | 7.5.1 Solve real-world problems by writing and solving inequalities.  7.5.2 Apply the Trichotomy Property to real-world problems. | Assessment   * Quiz 7B | AfterSchoolHelp.com   * Applying Inequalities | * Bell ringer (p. 360) * Skill Checks (pp. 361, 363) * Exercises * Quiz 7B (Sections 7.4–7.5) |
| Application Problems—Mathematical Models in Meteorology | | | | |
| 366–67 | 7.AP.1 Solve problems using  formulas related to  relative humidity and apparent temperatures. |  | Teacher Tools Online   * Video: Meteorology | * Exercises |
| 7.6 Equations with Powers | | | | |
| 368–72 | 7.6.1 Solve equations containing a variable that is squared.  7.6.2 Solve equations containing a variable that is cubed. | Activity   * Solving Equations with Powers | AfterSchoolHelp.com   * Equations with Powers | * Bell ringer (p. 368) * Skill Checks (pp. 368–70) * Exercises |
| 7.7 Radical Equations (Extended) | | | | |
| 373–77 | 7.7.1 Solve radical equations with square roots.  7.7.2 Solve radical equations with cube roots. | Activity   * Math & Scripture—Ezekiel’s Temple Vision   Assessment   * Quiz 7C | AfterSchoolHelp.com   * Radical Equations | * Bell ringer (p. 373) * Skill Checks (pp. 374, 376) * Exercises * Quiz 7C (Sections 7.6–7.7) |
| Activity: Solving Equations with Radicals (Extended) | | | | |
|  |  | Activity   * Solving Equations with Radicals |  | * Exercises |
| Application Activity—Recognizing God’s Design (2 days) | | | | |
| 378 | 7.AA.1 Create a work of art that demonstrates thankfulness, praise, and reverence toward God by applying an understanding of mathematics. | * Application Activity Rubric |  | * Project |
| Chapter 7 Review | | | | |
| 379–81 | Review the skills and concepts taught in Chapter 7. | Activities   * Chapter 7 Review * Cumulative Review 7 | Teacher Tools Online   * Game: Mathardy | * Chapter 7 Review |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| Chapter 7 Test | | | | |
|  | Demonstrate knowledge of  concepts from Chapter 7. | Assessment   * Chapter 7 Test | Teacher Tools Online   * ExamView: Chapter 7 test bank | * Chapter 7 Test |

Chapter 8: Relations and Functions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 8.1 Illustrating Relations | | | | |
| 383–88 | 8.1.1 Identify a relation and its domain and range.  8.1.2 Represent relations as a set of ordered pairs, a mapping diagram, a table of values, a graph, or an equation. | Activity   * Creation Wonders—The Human Eye   Materials   * coordinate plane for instruction * coordinate plane graphing paper | AfterSchoolHelp.com   * Illustrating Relations | * Bell ringer (p. 383) * Skill Checks (pp. 385–86) * Exercises |
| 8.2 Functions | | | | |
| 389–95 | 8.2.1 Determine whether a relation is a function.  8.2.2 Graph linear and simple nonlinear functions. | Assessment   * Quiz 8A   Materials   * coordinate plane for instruction * coordinate plane graphing paper | AfterSchoolHelp.com   * Functions | * Bell ringer (p. 389) * Skill Checks (pp. 391, 393) * Exercises * Quiz 8A (Sections 8.1–8.2) |
| Problem Solving—Make a Table | | | | |
| 396–97 | 8.PS.1 Solve a real-world problem by using the strategy of making a table. | Activity   * Problem Solving—Make a Table |  | * Exercises |
| 8.3 Slope | | | | |
| 398–404 | 8.3.1 Determine the slope of a line.  8.3.2 Interpret the slope of a linear function as the rate of change.  8.3.3 Explain how the rate of change in real-world models helps us manage God’s creation.   BWS  Modeling: Creation (explain)  8.3.4 Use slope to classify functions as linear or nonlinear. | Materials   * coordinate plane for instruction * coordinate plane graphing paper | AfterSchoolHelp.com   * Slope | * Bell ringer (p. 398) * Skill Checks (pp. 399–400, 402) * Exercises |
| 8.4 Graphing Linear Equations (2 days) | | | | |
| 405–10 | 8.4.1 Graph standard-form linear equations by using the  x- and y-intercepts.  8.4.2 Graph linear equations by using the slope-intercept form. | Activity   * Graphing Functions   Assessment   * Quiz 8B   Materials   * coordinate plane for instruction * coordinate plane graphing paper | AfterSchoolHelp.com   * Graphing Linear Equations | * Bell ringer (p. 405) * Skill Checks (pp. 407–9) * Exercises * Quiz 8B (Sections 8.3–8.4) |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 8.5 Writing Linear Equations (2 days) | | | | |
| 411–20 | 8.5.1 Determine the slope- intercept form of a linear function from its graph or a table of values.  8.5.2 Interpret the initial values and rates of change of different representations of linear functions that model real-world applications.  8.5.3 Compare the benefits of using graphs, tables, and equations to model the real world.   BWS  Modeling: Creation (explain) | Assessment   * Quiz 8C | Teacher Tools Online   * Video: Writing Linear Equations * Video: Textiles—then & now   AfterSchoolHelp.com   * Writing Linear Equations | * Bell ringer (p. 411) * Skill Checks (pp. 412–13, 415) * Exercises * Quiz 8C (Section 8.5) |
| 8.6 Proportional Relationships | | | | |
| 421–27 | 8.6.1 Identify tables, graphs, and equations representing a proportional relationship and the constant of proportionality.  8.6.2 Solve problems related to proportional quantities.  8.6.3 Compare real-world proportional relationships that are represented differently. | Activity   * Proportional Relationships | AfterSchoolHelp.com   * Proportional Relationships | * Bell ringer (p. 421) * Skill Checks (pp. 423–24) * Exercises |
| 8.7 Graphing Linear Inequalities | | | | |
| 428–31 | 8.7.1 Graph linear inequalities. | Activity   * Math & Scripture—Stewardship of Wealth   Assessment   * Quiz 8D   Materials   * coordinate plane for instruction * coordinate plane graphing paper | Teacher Tools Online   * Video: Graphing Linear Inequalities   AfterSchoolHelp.com   * Graphing Linear Inequalities | * Bell ringer (p. 428) * Skill Checks (pp. 429–30) * Exercises * Quiz 8D (Sections 8.6–8.7) |
| Activity: Calculator Skills 8 | | | | |
|  |  | Activity   * Calculator Skills 8 |  | * Exercises |
| Application Problems—Linear Models | | | | |
| 432–33 | 8.AP.1 Use linear models to solve real-world problems. |  | Teacher Tools Online   * Video: Utilities | * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| Chapter 8 Review | | | | |
| 434–38 | Review the skills and concepts taught in Chapter 8. | Activities   * Chapter 8 Review * Cumulative Review 8 | Teacher Tools Online   * Game: Mathardy | * Chapter 8 Review |
| Chapter 8 Test | | | | |
|  | Demonstrate knowledge of concepts from Chapter 8. | Assessment   * Chapter 8 Test | Teacher Tools Online   * ExamView: Chapter 8 test bank | * Chapter 8 Test |
| STEM Project—Logic and AI | | | | |
| 439 | Create logic diagrams. | Activity   * STEM—Logic and AI | Teacher Tools Online   * Video: Logic and AI | * Logic and AI Project Rubric |

Chapter 9: Systems of Linear Equations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources & Materials | Digital Resources | Assessments |
| 9.1 Solving Systems by Graphing | | | | |
| 441–45 | 9.1.1 Solve systems of linear equations by graphing.  9.1.2 Solve real-world problems by solving a system of linear equations graphically.  9.1.3 Describe benefits of solving a system by graphing.   BWS  Modeling: Fall  (evaluate) | Activity   * Solving Systems by Graphing   Materials   * coordinate plane for instruction * coordinate plane graphing paper | AfterSchoolHelp.com   * Solving Systems by Graphing | * Bell ringer (p. 441) * Skill Checks (pp. 442–43) * Exercises |
| Activity: Creation Wonders—The Human Ear | | | | |
|  |  | Activity   * Creation Wonders—The Human Ear |  | * Exercises |
| Problem Solving—Make a Graph | | | | |
| 446–47 | 9.PS.1 Solve real-world problems by using the strategy of making a graph. | Activity   * Problem Solving—Make a Graph |  | * Exercises |
| 9.2 Solving Systems by Substitution | | | | |
| 448–53 | 9.2.1 Solve systems of ­linear equations by using ­substitution.  9.2.2 Solve real-world problems by using substitution to solve systems of linear equations. | Assessment   * Quiz 9A | AfterSchoolHelp.com   * Solving Systems by Substitution | * Bell ringer (p. 448) * Skill Checks (pp. 450–51) * Exercises * Quiz 9A (Sections 9.1–9.2) |
| 9.3 Solving Systems by Elimination | | | | |
| 454–61 | 9.3.1 Solve systems of ­linear equations by using ­elimination.  9.3.2 Explain why a system of equations can be solved by elimination.   BWS  Modeling: Fall (explain)  9.3.3 Solve real-world problems by using elimination to solve a system of linear equations.  9.3.4 Identify the more efficient algebraic method of solving a system of linear equations. | Activity   * Solving Systems Algebraically | Teacher Tools Online   * Video: Solving Systems by Elimination * Video: Correcting Vision—then & now   AfterSchoolHelp.com   * Solving Systems by Elimination | * Bell ringer (p. 454) * Skill Checks (pp. 455, 457–58) * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 9.4 Special Cases of Linear Systems | | | | |
| 462–67 | 9.4.1 Identify systems of linear equations with no solution or infinitely many solutions.  9.4.2 Interpret the result of no solution or infinitely many solutions when solving linear systems modeling real-world applications. | Activities   * Special Cases of Linear Systems * Math & Scripture—The New Jerusalem * Calculator Skills 9   Assessment   * Quiz 9B | AfterSchoolHelp.com   * Special Cases of Linear Systems | * Bell ringer (p. 462) * Skill Checks (pp. 464–65) * Exercises * Quiz 9B (Sections 9.3–9.4) |
| Application Problems—Digital Storage and Images | | | | |
| 468–70 | 9.AP.1 Use scientific prefixes, linear equations, and linear systems to solve application problems. |  | Teacher Tools Online   * Video: Digital Storage and Images | * Exercises |
| Chapter 9 Review | | | | |
| 471–73 | Review the skills and concepts taught in Chapter 9. | Activities   * Chapter 9 Review * Cumulative Review 9 | Teacher Tools Online   * Game: Mathardy | * Chapter 9 Review |
| Chapter 9 Test | | | | |
|  | Demonstrate knowledge of concepts from Chapter 9. | Assessment   * Chapter 9 Test | Teacher Tools Online   * ExamView: Chapter 9 test bank | * Chapter 9 Test |
| Third Quarter Review and Exam (3 days) | | | | |
|  | Review and demonstrate ­knowledge of concepts from Chapters 7–9. | Assessment   * Exam 3 | Teacher Tools Online   * ExamView: Chapters 7–9 test banks | * Exam 3 |

Chapter 10: Geometry

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 10.1 Angles | | | | |
| 475–84 | 10.1.1 Classify angles as acute, right, obtuse, or straight.  10.1.2 Solve problems related to adjacent, vertical, complementary, and supplementary angles.  10.1.3 Apply the relationships of alternate interior, alternate exterior, and corresponding angles when parallel lines are cut by a transversal. | Activities   * Angles * Geometric Proofs * Figurate Numbers | Teacher Tools Online   * Video: Angle Names   AfterSchoolHelp.com   * Angles | * Bell ringer (p. 475) * Skill Checks (pp. 477–79, 481) * Exercises |
| Activity: Creation Wonders—The Human Brain | | | | |
|  |  | Activity   * Creation Wonders—The Human Brain |  | * Exercises |
| 10.2 Polygons | | | | |
| 485–93 | 10.2.1 Identify polygons.  10.2.2 Classify triangles and quadrilaterals by their sides and angles.  10.2.3 Find the sum of the angles in a polygon.  10.2.4 Find an unknown angle measure in a polygon. | Activity   * Calculator Skills 10   Materials   * student calculators | Teacher Tools Online   * Video: Robots—then & now   AfterSchoolHelp.com   * Polygons | * Bell ringer (p. 485) * Skill Checks (pp. 487, 489) * Exercises |
| 10.3 The Pythagorean Theorem | | | | |
| 494–500 | 10.3.1 Explain the Pythagorean misunderstanding of mathematical modeling.   BWS  Modeling: Redemption (explain)  10.3.2 Explain a proof of the Pythagorean Theorem.  10.3.3 Use the Pythagorean Theorem to find an unknown side of a right triangle.  10.3.4 Use the converse of the Pythagorean Theorem to determine whether a triangle with known side lengths is a right triangle. | Assessment   * Quiz 10A   Materials   * student calculators * graph paper | AfterSchoolHelp.com   * The Pythagorean Theorem | * Bell ringer (p. 494) * Skill Checks (pp. 495–97) * Exercises * Quiz 10A (Sections 10.1–10.3) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 10.4 Coordinate Geometry | | | | |
| 501–5 | 10.4.1 Derive the distance  formula.  10.4.2 Determine the distance between 2 points.  10.4.3 Find the midpoint of a segment. | Activity   * Distance and Midpoint | AfterSchoolHelp.com   * Coordinate Geometry | * Bell ringer (p. 501) * Skill Checks (pp. 502–3) * Exercises |
| 10.5 Congruence and Similarity | | | | |
| 506–11 | 10.5.1 List corresponding parts of congruent and similar figures.  10.5.2 Find unknown side lengths in similar figures. | Activity   * Special Right Triangles * Congruence and Similarity   Assessment   * Quiz 10B | AfterSchoolHelp.com   * Congruence and Similarity | * Bell ringer (p. 506) * Skill Checks (pp. 507–8) * Exercises * Quiz 10B (Sections 10.4–10.5) |
| Problem Solving—Work Backward | | | | |
| 512–13 | 10.PS.1 Use the problem-solving strategy of working  backward. | Activity   * Problem Solving—Work Backward |  | * Exercises |
| 10.6 Translations | | | | |
| 514–20 | 10.6.1 Translate a figure in the coordinate plane.  10.6.2 Find the coordinates of points after a translation.  10.6.3 Describe the effect of translation on congruence. | Materials   * coordinate plane for instruction * coordinate plane graphing paper | Teacher Tools Online   * Video: Translations   AfterSchoolHelp.com   * Translations | * Bell ringer (p. 514) * Skill Checks (pp. 515, 517) * Exercises |
| 10.7 Reflections | | | | |
| 521–29 | 10.7.1 Reflect a figure across the axes of the coordinate plane.  10.7.2 Find the coordinates of points after a reflection.  10.7.3 Describe the effect of reflection on congruence.  10.7.4 Complete a sequence of rigid transformations. | Activity   * Translations and Reflections   Assessment   * Quiz 10C   Materials   * coordinate plane for instruction * coordinate plane graphing paper | AfterSchoolHelp.com   * Reflections | * Bell ringer (p. 521) * Skill Checks (pp. 522, 525) * Exercises * Quiz 10C (Sections 10.6–10.7) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 10.8 Rotations (2 days) | | | | |
| 530–37 | 10.8.1 Rotate a figure around the origin of the coordinate plane.  10.8.2 Find the coordinates of points after a rotation.  10.8.3 Describe the effect of rotation on congruence.  10.8.4 Describe a sequence of rigid transformations that maps a figure to a congruent figure. | Materials   * coordinate plane for instruction * coordinate plane graphing paper | AfterSchoolHelp.com   * Rotations | * Bell ringer (p. 530) * Skill Checks (pp. 532–33) * Exercises |
| 10.9 Dilations (2 days) | | | | |
| 538–46 | 10.9.1 Find the scale factor of a dilation.  10.9.2 Describe the effect of a dilation on similarity.  10.9.3 Dilate a figure in the coordinate plane with respect to the origin.  10.9.4 Describe a series of similarity transformations between 2 figures.  10.9.5 Defend the proposition that even very good mathematical models are limited.   BWS  Modeling: Redemption (formulate) | Activities   * Rotations and Dilations * Math & Scripture—Building the Walls and Gates   Assessment   * Quiz 10D   Materials   * coordinate plane for instruction * coordinate plane graphing paper | Teacher Tools Online   * Video: Dilations   AfterSchoolHelp.com   * Dilations | * Bell ringer (p. 538) * Skill Checks (pp. 540–42) * Exercises * Quiz 10D (Sections 10.8–10.9) |
| Application Problems—Loading Master | | | | |
| 547–49 | 10.AP.1 Calculate weights and volumes for shipping cargo. |  | Teacher Tools Online   * Video: Shipping | * Exercises |
| Chapter 10 Review | | | | |
| 550–55 | Review the skills and concepts taught in Chapter 10. | Activities   * Chapter 10 Review * Cumulative Review 10 | Teacher Tools Online   * Game: Mathardy | * Chapter 10 Review |
| Chapter 10 Test | | | | |
|  | Demonstrate knowledge of concepts from Chapter 10. | Assessment   * Chapter 10 Test | Teacher Tools Online   * ExamView: Chapter 10  test bank | * Chapter 10 Test |

Chapter 11: Perimeter, Area, and Volume

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | **Objectives** | **Printed Resources  & Materials** | **Digital Resources** | **Assessments** |
| 11.1 Perimeter and Circumference | | | | |
| 557–62 | 11.1.1 Find the perimeter of a polygon.  11.1.2 Find the circumference of a circle when the radius or diameter is known.  11.1.3 Find an unknown length in a polygon or circle given the perimeter or circumference and its other dimensions. | Materials   * student calculators | AfterSchoolHelp.com   * Perimeter and Circumference | * Bell ringer (p. 557) Skill Checks (pp. 558–59) * Exercises |
| 11.2 Area | | | | |
| 563–71 | 11.2.1 Calculate the area of squares, rectangles, parallelograms, triangles, trapezoids, and circles.  11.2.2 Find an unknown dimension when given the area of a figure and its other dimensions.  11.2.3 Find the area of composite figures by using sums or differences of areas.  11.2.4 Explain how we should apply the biblical teaching of unjust measures.   BWS  Ethics: Creation (explain) | Activity   * Perimeter and Area   Materials   * student calculators | AfterSchoolHelp.com   * Area | * Bell ringer (p. 564) * Skill Checks (pp. 566, 568) * Exercises |
| 11.3 Lengths and Areas of Similar Regions | | | | |
| 572–78 | 11.3.1 Find the perimeter of a polygon given the perimeter of a similar polygon and the measures of a pair of corresponding sides.  11.3.2 Find the area of a polygon given the area of a similar polygon and the measures of a pair of corresponding sides.  11.3.3 Find unknown lengths in similar polygons by using the ratio of perimeters or areas. | Assessment   * Quiz 11A   Materials   * student calculators | Teacher Tools Online   * Video: Lengths and Areas of Similar Polygons * Video: Printers—then & now   AfterSchoolHelp.com   * Lengths and Areas of Similar Regions | * Bell ringer (p. 572) * Skill Checks (pp. 573–74) * Exercises * Quiz 11A (Sections 11.1–11.3) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | **Objectives** | **Printed Resources  & Materials** | **Digital Resources** | **Assessments** |
| 11.4 Surface Areas of Prisms and Cylinders (2 days) | | | | |
| 579–85 | 11.4.1 Identify attributes of prisms and cylinders.  11.4.2 Calculate the lateral and total surface areas of prisms and cylinders by using the appropriate formulas.  11.4.3 Determine an unknown dimension of a prism or cylinder given the lateral or total surface area and other dimensions. | Materials   * student calculators * geometric models of a prism and a circular cylinder | AfterSchoolHelp.com   * Surface Areas of Prisms and Cylinders | * Bell ringer (p. 579) * Skill Checks (pp. 581–82) * Exercises |
| 11.5 Surface Areas of Pyramids, Cones, and Spheres | | | | |
| 586–93 | 11.5.1 Identify attributes of pyramids, cones, and spheres.  11.5.2 Calculate the lateral and total surface areas of pyramids, cones, and spheres by using the appropriate formulas.  11.5.3 Determine an unknown dimension of a pyramid, cone, or sphere given the lateral or total surface area and other dimensions. | Activities   * Surface Area * Deltahedra   Assessment   * Quiz 11B   Materials   * student calculators * geometric models of a prism, pyramid, cone, and sphere | AfterSchoolHelp.com   * Surface Areas of Pyramids, Cones, and Spheres | * Bell ringer (p. 586) * Skill Checks (pp. 588–90) * Exercises * Quiz 11B (Sections 11.4–11.5) |
| Activity: Creation Wonders—Human Blood | | | | |
|  |  | Activity   * Creation Wonders—Human Blood |  | * Exercises |
| Problem Solving—Organize the Data | | | | |
| 594–96 | 11.PS.1 Organize data with a table or diagram to solve a real-world problem. | Activity   * Problem Solving—Organize the Data |  | * Exercises |
| 11.6 Volumes of Prisms and Cylinders | | | | |
| 597–603 | 11.6.1 Calculate the volume of prisms and circular cylinders.  11.6.2 Determine an unknown dimension of a prism or circular cylinder given its volume and other dimensions.  11.6.3 Find the volume of composite solids.  11.6.4 Explain why ethics should be considered in retail packaging design.   BWS  Ethics: Creation (explain) | Activity   * Math & Scripture—God’s Wisdom and Noah’s Faithful Work   Materials   * student calculators | AfterSchoolHelp.com   * Volumes of Prisms and Cylinders | * Bell ringer (p. 597) * Skill Checks (pp. 599–601) * Exercises |
| Pages | **Objectives** | **Printed Resources  & Materials** | **Digital Resources** | **Assessments** |
| 11.7 Volumes of Pyramids, Cones, and Spheres | | | | |
| 604–10 | 11.7.1 Calculate the volume of pyramids, cones, and spheres.  11.7.2 Determine an unknown dimension of a pyramid, cone, or sphere when given the volume and other dimensions.  11.7.3 Find the volume of composite solids. | Activities   * Calculator Skills 11 * Volumes of 3-Dimensional Figures   Assessment   * Quiz 11C   Materials   * student calculators * various models of cones, cylinders, prisms, pyramids, and spheres | AfterSchoolHelp.com   * Volumes of Pyramids, Cones, and Spheres | * Bell ringer (p. 604) * Skill Checks (pp. 605, 607) * Exercises * Quiz 11C (Sections 11.6–11.7) |
| Application Problems—Geometric Packaging | | | | |
| 611–13 | 11.AP.1 Use surface area and volume formulas to solve packaging problems. | Activity   * Area and Volume   Materials   * student calculators * empty cereal or similar boxes | Teacher Tools Online   * Video: Packaging | * Exercises |
| Chapter 11 Review | | | | |
| 614–18 | Review the skills and concepts taught in Chapter 11. | Activities   * Chapter 11 Review * Cumulative Review 11 | Teacher Tools Online   * Game: Mathardy | * Chapter 11 Review |
| Chapter 11 Test | | | | |
|  | Demonstrate knowledge of concepts from Chapter 11. | Assessment   * Chapter 11 Test | Teacher Tools Online   * ExamView: Chapter 11 test bank | * Chapter 11 Test |
| STEM Project—Binary Adder | | | | |
| 619 | Design and build a binary adder circuit by using science, technology, engineering, and math. | Activity   * STEM—Binary Adder | Teacher Tools Online   * Video: Binary Adder | * Binary Adder Rubric |

Chapter 12: Statistics and Probability

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 12.1 Statistical Measures | | | | |
| 621–26 | 12.1.1 Find the mean, median, and mode of a set of data.  12.1.2 Find the range, interquartile range, and mean absolute deviation of a set of data. | Materials   * student calculators | AfterSchoolHelp.com   * Statistical Measures | * Bell ringer (p. 621) * Skill Checks (pp. 622, 625) * Exercises |
| 12.2 Illustrating Data (2 days) | | | | |
| 627–35 | 12.2.1 Represent univariate data with an appropriate graph.  12.2.2 Analyze information illustrated by various graphs representing data sets.  12.2.3 Identify misleading representations of data.   BWS  Ethics: Fall and Redemption (evaluate) | Activity   * Illustrating Data   Assessment   * Quiz 12A   Materials   * student calculators | AfterSchoolHelp.com   * Illustrating Data | * Bell ringer (p. 627) * Skill Checks (pp. 630, 632) * Exercises * Quiz 12A (Sections 12.1–12.2) |
| Activity: Creation Wonders—The Senses of Taste and Smell | | | | |
|  |  | Activity   * Creation Wonders—The Senses of Taste and Smell |  | * Exercises |
| 12.3 Frequency Tables and Histograms | | | | |
| 636–43 | 12.3.1 Summarize a large set of data by using a frequency distribution table or an interval frequency table.  12.3.2 Construct a histogram representing the data in an interval frequency table. | Activity   * Statistical Sampling   Materials   * student calculators | Teacher Tools Online   * Video: Intro to Frequency Tables, Histograms, and Scatterplots   AfterSchoolHelp.com   * Histograms | * Bell ringer (p. 636) * Skill Checks (pp. 637, 639) * Exercises |
| Problem Solving—Use Multiple Strategies | | | | |
| 644–46 | 12.PS.1 Use multiple strategies in problem solving. | Activity   * Problem Solving—Use Multiple Strategies |  | * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 12.4 Scatterplots | | | | |
| 647–52 | 12.4.1 Construct a scatterplot illustrating bivariate data.  12.4.2 Classify the association of quantities illustrated by a scatterplot as linear or nonlinear and as positive, negative, or neither.  12.4.3 Interpret clusters and outliers in a scatterplot. | Assessment   * Quiz 12B   Materials   * student calculators | AfterSchoolHelp.com   * Scatterplots | * Bell ringer (p. 647) * Skill Check (p. 649) * Exercises * Quiz 12B (Sections 12.3–12.4) |
| 12.5 Trend Lines | | | | |
| 653–58 | 12.5.1 Draw a trend line modeling the data in a scatterplot.  12.5.2 Write the equation of a trend line.  12.5.3 Interpret the slope and y-intercept of a trend line.  12.5.4 Use a trend line to make estimations or predictions. | Activity   * Scatterplots and Trend Lines   Materials   * student calculators | AfterSchoolHelp.com   * Trend Lines | * Bell ringer (p. 653) * Skill Check (p. 655) |
| 12.6 Two-Way Frequency Tables (2 days) | | | | |
| 659–66 | 12.6.1 Make a two-way frequency table.  12.6.2 Interpret a two-way frequency table.  12.6.3 Use relative frequencies to describe the association between the categories in a two-way frequency table. | Assessment   * Quiz 12C   Materials   * student calculators | Teacher Tools Online   * Video: Mobile Phones—then & now * Video: Two-Way Frequency Tables * Video: Using Relative Frequencies to Determine Association   AfterSchoolHelp.com   * Two-Way Tables | * Bell ringer (p. 659) * Skill Checks (pp. 661–62) * Exercises * Quiz 12C (Sections 12.5–12.6) |
| 12.7 Probability | | | | |
| 667–73 | 12.7.1 Calculate theoretical and experimental probabilities of simple events.  12.7.2 Calculate the probability of mutually exclusive events.  12.7.3 Identify beneficial uses of probability theory.   BWS  Ethics: Fall and Redemption (formulate) | Activity   * Numbers That Surprise   Materials   * student calculators | AfterSchoolHelp.com   * Probability | * Bell ringer (p. 667) * Skill Checks (pp. 668, 670–71) * Exercises |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pages | Objectives | Printed Resources  & Materials | Digital Resources | Assessments |
| 12.8 Probabilities of Compound Events | | | | |
| 674–80 | 12.8.1 Use a tree diagram to list the possible outcomes of an experiment.  12.8.2 Apply the Fundamental Counting Principle to find the total number of possible outcomes.  12.8.3 Determine the probability of a compound event. | Activities   * Math & Scripture—Gideon’s Big Task * Calculator Skills 12 * Probability   Assessment   * Quiz 12D   Materials   * student calculators | AfterSchoolHelp.com   * Probabilities of Compound Events | * Bell ringer (p. 674) * Skill Checks (pp. 675, 677–78) * Exercises * Quiz 12D (Sections 12.7–12.8) |
| Application Problems—Using Statistics | | | | |
| 681–82 | 12.AP.1 Use statistics to help organize data and manage information. |  | Teacher Tools Online   * Video: Election Polls | * Exercises |
| Chapter 12 Review (2 days) | | | | |
| 683–88 | Review the skills and concepts taught in Chapter 12. | Activities   * Chapter 12 Review * Cumulative Review 12 | Teacher Tools Online   * Game: Mathardy | * Chapter 12 Review |
| Chapter 12 Test | | | | |
|  | Demonstrate knowledge of concepts from Chapter 12. | Assessment   * Chapter 12 Test | Teacher Tools Online   * ExamView: Chapter 12 test bank | * Chapter 12 Test |
| Fourth Quarter Review and Exam (3 days) | | | | |
|  | Review and demonstrate knowledge of concepts from Chapters 10–12. | Assessment   * Exam 4 | Teacher Tools Online   * ExamView: Chapters 10–12 test banks | * Exam 4 |