Lesson Plan Overview
Fundamentals of Math 3rd Edition

Chapter 1: Whole Numbers & Decimals

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 1–2 | 1.1 | 1–7 | Activities* Decimal Place Value

Additional Materials* athlete name tags (optional)

AfterSchoolHelp.com * Fundamentals of Math, Whole Numbers & Decimals
 | **Topic:** Ordering and Rounding**Skills:** expressing numbers in standard, word, or expanded form; comparing and ordering decimal numbers; rounding numbers to a designated place value**BWS:** Knowledge: identifying the basic assumption underlying all of mathematics |
| 3 | 1.2 | 8–13 | Activities* Comparing, Estimating, and Adding Whole Numbers
* Estimating Sums

Additional Materials* student whiteboards
* task cards (optional)
 | **Topic:** Addition and Subtraction**Skills:** adding and subtracting whole numbers and decimals, estimating sums and differences, solving real-world problems involving whole numbers and decimals |
| 4 | 1.3 | 14–19 | Additional Materials* student whiteboards
 | **Topic:** Multiplication**Skills:** multiplying whole numbers and decimals, estimating products using rounding, solving real-world problems involving whole numbers and decimals |
| 5–6 | 1.4 | 20–25 | Activities* Rounding Decimal Quotients
* Calculating Camp Costs
* Operations with Decimals

Additional Materials* calculators (optional)
* student whiteboards

Assessment* Quiz 1A (1.1−1.2)
 | **Topic:** Division**Skills:** dividing whole numbers and decimals, converting a fraction to a decimal, estimating quotients using compatible numbers, solving real-world problems involving the quotients of whole numbers and decimals**BWS:** Knowledge: explaining how division by zero illustrates that math is a human activity |

Chapter 1: Whole Numbers & Decimals

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 7 | 1.5 | 26–30 | Activities* Exponents

Additional Materials* various sizes of Rubik’s Cubes
* timer
 | **Topic:** Exponents**Skills:** expressing repeated multiplication using exponents, expanding a power to its factored form and simplifying, expressing a whole number in expanded exponential form**BWS:** Knowledge: demonstrating the usefulness of exponents in describing creation |
| 8–9 | 1.6 | 31–36 | Instructional Aids* 1.6: Exponent Warm-up Activity

Activities* Approximating the Root Cause

Additional Materials* student whiteboards
* number-line printout (optional)
* calculators
* timer

Assessment* Quiz 1B (1.3–1.4)
 | **Topic:** Square Roots**Skills:** finding the square root of a perfect square, estimating an irrational square root by determining the two consecutive numbers it lies between, plotting irrational numbers on a number line |
| 10 | 1.7 | 37–41 | Activities* Order of Operations

Additional Materials* student whiteboards
 | **Topic:** Order of Operations**Skills:** stating and using the order of operations to simplify numerical expressions |
| 11 | Chapter 1 Review | 42–43 | Teacher Tools Online* Chapter 01 Mathardy

Assessment* Quiz 1C (1.5–1.7)
 |  |
| 12 | Test |  | Assessment* Chapter 1 Test
 |

Chapter 2: Integers

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 13–14 | 2.1 | 45–51 | Activities* Practice with Sets
* Subsets

Additional Materials* number cards (optional)
* student whiteboards

AfterSchoolHelp.com* Fundamentals of Math, Integers
 | **Topic:** Numbers and Sets**Skills:** classifying numbers by number sets; identifying sets as empty, finite, or infinite; determining subsets of number sets**BWS:** Reasoning: identifying sets as a human convention |
| 15 | 2.2 | 52–56 | Activities* Comparing Integers and Absolute Value

Additional Materials* rulers
 | **Topic:** Opposites and Absolute Value**Skills:** determining opposite numbers; comparing rational numbers using <, >, or =; finding the absolute value of numbers; simplifying expressions containing absolute values**BWS:** Reasoning: interpreting math facts as consistent or inconsistent with assumptions |
| 16 | 2.3 | 57–61 | Additional Materials* integer counters or dot paper (optional)
* red and yellow colored pencils (optional)
* rulers

Assessment* Quiz 2A (2.1−2.2)
 | **Topic:** Addition of Integers**Skills:** adding integers with like signs, adding integers with different signs, solving real-world problems involving the addition of integers |
| 17–18 | 2.4 | 62–68 | Activities* Adding and Subtracting Integers
* Integer Applications

Keyword Search* I Have Who Has Addition Subtraction Integers

Additional Materials* rulers
* integer counters or dot paper (optional)
* red and yellow colored pencils (optional)
 | **Topic:** Subtraction of Integers**Skills:** subtracting integers, finding the distance between two integers on a number line, solving real-world problems involving the subtraction of integers |

Chapter 2: Integers

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 19 | 2.5 | 69–73 |  | **Topic:** Multiplication of Integers**Skills:** multiplying integers, simplifying powers of integers, solving real-world problems involving the multiplication of integers**BWS:** Reasoning: explaining why a negative times a negative is positive |
| 20 | Problem Solving | 74–75 | Assessment* Quiz 2B (2.3−2.4)
 |  |
| 21 | 2.6 | 76–81 | Activities* Operations with Integers
* Amazing Integer Review

Additional Materials* rulers
* calculators (optional)
 | **Topic:** Division of Integers**Skills:** dividing integers, solving real-world problems involving division of integers**BWS:** Reasoning: recalling different historical interpretations of division by zero |
| 22 | 2.7 | 82–85 |  | **Topic:** Integer Operations**Skills:** simplifying numerical expressions involving integers, distinguishing between testing for consistency in mathematics and determining truth |
| 23 | Chapter 2 Review | 86–87 | Activities* Chapter 2 Cumulative Review

Teacher Tools Online* Chapter 02 Mathardy

Assessment* Quiz 2C (2.5–2.7)
 |  |
| 24 | Test |  | Assessment* Chapter 2 Test
 |

Chapter 3: Numerical and Algebraic Expressions

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| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 25–26 | 3.1 | 89–95 | Instructional Aids* 3.1: Variables and Expressions

Activities* Algebraic Expressions
* Using Algebraic Expressions
* Cooperative Learning: Soccer Field Borders

AfterSchoolHelp.com * Fundamentals of Math, Numerical and Algebraic Expressions
 | **Topic:** Variables and Expressions**Skills:** translating algebraic expressions, evaluating algebraic expressions, modeling real-world situations**BWS:** Modeling: recognizing models as simplified representations that help us make sense of the world |
| 27–28 | 3.2 | 96–102 | Activities* Properties of Addition
* Properties of Multiplication
 | **Topic:** Properties of Addition and Multiplication**Skills:** applying the properties of addition and multiplication to write equivalent expressions and compute mentally**BWS:** Modeling: explaining the use of mathematical models |
| 29–30 | 3.3 | 103–8 | Activities* Applying the Distributive Property

Additional Materials* algebra tiles (optional)
* student whiteboards

Assessment* Quiz 3A (3.1–3.2)
 | **Topic:** The Distributive Property**Skills:** applying the Distributive Property to write equivalent expressions and compute mentally**BWS:** Modeling: explaining why mathematical models appear to be objective |
| 31–32 | 3.4 | 109–13 | Additional Materials* student whiteboards
 | **Topic:** Factoring**Skills:** applying the Distributive Property to factor linear expressions and analyze a real-world situation |
| 33 | 3.5 | 114–21 | Additional Materials* algebra tiles (optional)
 | **Topic:** Combining Like Terms**Skills:** identifying and combining like terms, writing equivalent expressions using factoring to represent real-world situations |

Chapter 3: Numerical and Algebraic Expressions

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 34 | 3.6 | 122–27 | Activities* Applying Linear Expressions
* STEM Project: Weather Observation Station

Assessment* Quiz 3B (3.3–3.4)
 | **Topic:** Adding and Subtracting Linear Expressions**Skills:** adding and subtracting linear expressions, solving real-word problems by adding or subtracting linear expressions**BWS:** Modeling: comparing the algorithms in simple and complex mathematical models |
| 35–36 | 3.7 | 128–32 | Instructional Aids* 3.7A: Matching the Powers
* 3.7B: 6-Tab Graphic Organizer

Assessment* Quiz 3C (3.5–3.6)
 | **Topic:** Properties of Exponents**Skills:** simplifying expressions by applying the properties of exponents  |
| 37–38 | 3.8 | 133–39 | Activities* Multiplying and Dividing by Powers of Ten
* Scientific Notation
* Applying Scientific Notation
* Scientific Notation with Negative Exponents
 | **Topic:** Scientific Notation**Skills:** multiplying and dividing by powers of 10, expressing large numbers in scientific notation, multiplying numbers in scientific notation, solving real-world problems using scientific notation |
| 39 | Chapter 3 Review | 140–41 | Teacher Tools Online* Chapter 03 Mathardy

Assessment* Quiz 3D (3.7–3.8)
 |  |
| 40 | Test |   | Assessment* Chapter 3 Test
 |
| 41–42 | Review and Test |  | Activities* Chapter 3 Cumulative Review

Assessment* 1st Quarter Exam
 |

Chapter 4: Fraction Theory

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 43 | 4.1 | 143–47 | Instructional Aids* 4.1: Divisibility Test Rules Foldable

Activities* Divisibility

AfterSchoolHelp.com* Fundamentals of Math, Fraction Theory
 | **Topic:** Prime Factorization**Skills:** identifying prime or composite numbers, finding the prime factorization of composite numbers**BWS:** Design: recalling that every integer greater than one has a unique prime factorization |
| 44 | 4.2 | 148–54 | Instructional Aids* 4.2A: Tiling Activity PowerPoint
* 4.2B: Tiling Worksheet

Activities* The Euclidean Algorithm
 | **Topic:** Greatest Common Factor**Skills:** finding the greatest common factor of given numbers and applying to real-world problems, determining whether given numbers are relatively prime**BWS:** Design: recognizing there are an infinite number of prime numbers |
| 45 | 4.3 | 155–60 | Activities* Practicing with the GCF and LCM
* Problem Solving Using the GCF and LCM
 | **Topic:** Least Common Multiple**Skills:** listing multiples of a number, finding the least common multiple of two or three numbers, solving real-world problems using the least common multiple |
| 46 | 4.4 | 161–65 | Activities* Terms Across and Down
* Amazing Equivalent Fractions

Additional Materials* student whiteboards
* timer
 | **Topic:** Renaming Fractions**Skills:** reducing fractions to lowest terms, expressing a mixed number as an improper fraction, expressing an improper fraction as a mixed number**BWS:** Design: describing how prime numbers are used to convert between equivalent fractions |

Chapter 4: Fraction Theory

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| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 47–48 | 4.5 | 168–72 | Assessment* Quiz 4A (4.1−4.3)
 | **Topic:** Rational Numbers**Skills:** expressing a number in rational number form, converting between rational number forms, classifying numbers as rational or irrational |
| 49 | 4.6 | 173–77 | Additional Materials* rulers (optional)
 | **Topic:** Comparing Rational Numbers**Skills:** solving for a missing denominator, comparing and ordering rational numbers, graphing rational numbers on a number line |
| 50 | Problem Solving | 166–67 | Assessment* Quiz 4B (4.4−4.6)
 |  |
| 51 | Chapter 4 Review | 178–79 | Activities* Chapter 4 Cumulative Review

Teacher Tools Online* Chapter 04 Mathardy
 |  |
| 52 | Test |  | Assessment* Chapter 4 Test
 |

Chapter 5: Fraction Operations

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| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 53 | 5.1 | 181–86 | Activities* Adding Fractions

Additional Materials* student whiteboards

AfterSchoolHelp.com* Fundamentals of Math, Fraction Operations
 | **Topic:** Adding Fractions**Skills:** adding fractions with like and unlike denominators, solving real-world problems involving the addition of fractions |
| 54 | 5.2 | 187–90 | Activities* Adding and Subtracting Fractions
 | **Topic:** Subtracting Fractions**Skills:** subtracting fractions with like and unlike denominators, simplifying expressions containing rational numbers using the properties of addition, solving real-world problems involving the subtraction of fractions**BWS:** Reasoning: identifying the mathematical property that allows a fraction to be replaced by an equivalent fraction |
| 55–56 | 5.3 | 191–95 | Activities* Mixed Numbers Applications
 | **Topic:** Adding and Subtracting Mixed Numbers**Skills:** adding and subtracting mixed numbers, estimating sums and differences of mixed numbers, simplifying expressions containing rational numbers using the properties of addition, solving real-world problems involving the addition and subtraction of mixed numbers |
| 57 | 5.1–5.3 review |  | Assessment* Quiz 5A (5.1–5.3)
 |  |

Chapter 5: Fraction Operations

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| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 58 | 5.4 | 196–200 | Activities* Visualizing the Multiplication of Fractions

Additional Materials* a cake illustration
* circle cutouts
* scissors
 | **Topic:** Multiplying Fractions**Skills:** multiplying proper fractions and mixed numbers, simplifying expressions containing rational numbers using the properties of multiplication, solving real-world problems involving the multiplication of fractions |
| 59 | 5.5 | 201–5 | Activities* Visualizing the Division of Fractions
* Mixed Numbers Applications
 | **Topic:** Dividing Fractions**Skills:** dividing fractions and mixed numbers, solving real-world problems involving the division of fractions**BWS:** Reasoning: defending the process of changing division by a fraction to multiplication by the reciprocal |
| 60 | 5.6 | 206–10 | Additional Materials* student whiteboards
 | **Topic:** Rational Expressions**Skills:** simplifying rational number expressions and the square root of selected rational numbers |
| 61 | 5.7 | 211–15 | Additional Materials* student whiteboards

Assessment* Quiz 5B (5.4−5.5)
 | **Topic:** Equivalent Algebraic Expressions**Skills:** writing an equivalent fractional expression by applying the Distributive Property, combining like terms with fractional coefficients, factoring a common fractional factor from an algebraic expression |
| 62–63 | Chapter 5 Review | 216–17 | Activities* Chapter 5 Cumulative Review

Teacher Tools Online* Chapter 05 Mathardy

Assessment* Quiz 5C (5.6−5.7)
 |  |
| 64 | Test |  | Assessment* Chapter 5 Test
 |

Chapter 6: Equations and Inequalities

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 65 | 6.1 | 219–25 | Instructional Aids* 6.1: Writing Equations

Additional Materials* colored pencils
* highlighters

AfterSchoolHelp.com* Fundamentals of Math, Equations and Inequalities
 | **Topic:** Writing Equations**Skills:** identifying the parts of an algebraic equation, translating sentences into equations**BWS:** Modeling: writing one-step equations to model real-world situations |
| 66–67 | 6.2 | 226–31 | Activities* Solving Addition and Subtraction Equations

Additional Materials* student whiteboards
* colored pencils
 | **Topic:** Addition and Subtraction Equations**Skills:** determining whether a given number is a solution, solving addition or subtraction equations, solving real-world problems using addition and subtraction equations |
| 68 | 6.3 | 232–36 | Activities* Solving Multiplication and Division Equations

Additional Materials* student whiteboards
 | **Topic:** Multiplication and Division Equations**Skills:** solving multiplication or division equations, solving real-world problems using algebraic equations |
| 69–70 | 6.4 | 237–42 | Activities* Solving Two-Step Equations
* Writing and Solving Equations
* STEM Project: Ohm’s Law (V = IR)

Additional Materials* student whiteboards

Assessment* Quiz 6A (6.1–6.3)
 | **Topic:** Two-Step Equations**Skills:** solving an equation in the form ax + b = c, where a, b, and c are rational numbers; writing two-step equations that model real-world situations**BWS:** Modeling: describing the orderliness found in solving equations |
| 71 | 6.5 | 243–47 | Activities* Equations and Grouping Symbols

Additional Materials* student whiteboards
 | **Topic:** Equations with Grouping Symbols**Skills:** solving two-step equations with grouping symbols, writing and solving multistep equations that model real-world situations**BWS:** Modeling: evaluating the importance of order when solving equations |

Chapter 6: Equations and Inequalities

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 72–73 | 6.6 | 250–55 | Instructional Aids* 6.6: Inequality Card Sort Activity

Additional Materials* student whiteboards

Assessment* Quiz 6B (6.4–6.5)
 | **Topic:** Addition and Subtraction Inequalities**Skills:** translating inequality statements involving addition and subtraction, determining whether a value is a solution to an inequality, solving inequalities using the properties of addition and subtraction, graphing solutions for an inequality on a number line |
| 74 | 6.7 | 256–60 | Additional Materials* student whiteboards
 | **Topic:** Multiplication and Division Inequalities**Skills:** translating inequality statements involving multiplication and division, solving inequalities and graphing their solutions on a number line, explaining how solving an inequality is different from solving an equation |
| 75 | 6.8 | 261–65 | Instructional Aids* 6.8: Two-Step Inequalities

Activities* Solving Two-Step Inequalities
* Writing and Solving Inequalities

Additional Materials* student whiteboards
 | **Topic:** Two-Step Inequalities**Skills:** translating sentences into inequalities, analyzing mathematical and real-world situations to write and solve inequalities |
| 76 | Problem Solving | 248–49 | Assessment* Quiz 6C (6.6–6.8)
 |  |
| 77 | Chapter 6 Review | 266–67 | Activities* Chapter 6 Cumulative Review

Teacher Tools Online* Chapter 06 Mathardy
 |  |
| 78 | Test |  | Assessment* Chapter 6 Test
 |

Chapter 7: Ratios and Proportions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 79 | 7.1 | 269–76 | Activities* Writing and Simplifying Ratios
* Unit Pricing

AfterSchoolHelp.com* Fundamentals of Math, Ratios and Proportions
 | **Topic:** Ratios and Rates**Skills:** expressing a comparison of numbers as a ratio or a rate, solving for equivalent ratios, expressing a comparison of numbers as a unit rate**BWS:** Design: explaining the evidence of design found in ratios and rates |
| 80 | 7.2 | 277–81 | Activities* Cooking for a Crowd
 | **Topic:** Complex Rates**Skills:** simplifying complex ratios, expressing comparisons of rational numbers as a unit rate, finding missing rational terms within a proportional relationship |
| 81 | 7.3 | 282–87 | Activities* Rates and Ratios
* Proportion

Additional Materials* stopwatch or timer (optional)
* calculators (optional)
 | **Topic:** Proportions**Skills:** determining whether two ratios form a proportion, solving for a missing term of a proportion**BWS:** Design: converting real-world patterns into mathematical statements |
| 82 | 7.1–7.3 Review |  | Assessment* Quiz 7A (7.1–7.3)
 |  |

Chapter 7: Ratios and Proportions

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 83 | 7.4 | 288–93 | Activities* Setting Up to Scale

Additional Materials* rulers
* calculators (optional)
 | **Topic:** Scale Models**Skills:** finding the real-world length represented by the scale model, finding the scale length to represent real distances, finding the scale used for a model |
| 84–86 | 7.5 | 294–99 | Instructional Aids* 7.5 Reading Graphs

Activities* Graphing Potential Earnings

Additional Materials* graph paper
* rulers
 | **Topic:** Proportional Relationships**Skills:** graphing ratios on a coordinate plane, analyzing proportional relationships graphically, finding the constant of proportionality from a graph or equation, solving for missing terms in a ratio using the constant of proportionality, writing an equation in the form of y = kx using the constant of proportionality |
| 87 | Chapter 7 Review | 300–301 | Teacher Tools Online* Chapter 07 Mathardy

Assessment* Quiz 7B (7.4–7.5)
 |  |
| 88 | Test |  | Assessment* Chapter 7 Test
 |
| 89–90 | Review and Test |  | Activities* Chapter 7 Cumulative Review

Assessment* 2nd Quarter Exam
 |

Chapter 8: Percents

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 91 | 8.1 | 303–8 | Activities* Renaming Percents

Additional Materials* student whiteboards

AfterSchoolHelp.com* Fundamentals of Math, Percents
 | **Topic:** Percents**Skills:** converting between rational numbers and percents, comparing and ordering percents and rational numbers**BWS:** Ethics: explaining why percentages are convincing |
| 92 | 8.2 | 309–13 | Activities* Sales Tax

Additional Materials* student whiteboards
* calculators (optional)
 | **Topic:** Percent of a Number**Skills:** finding the percent of a number using multiplication, solving problems involving percents less than 1% and greater than 100%, solving real-world problems involving percents and sales tax |
| 93 | Problem Solving | 314 |  |  |
| 94 | 8.3 | 315–20 | Activities* Finding Percents
* Percents in Action—The Cost of Pet Ownership

Additional Materials* calculators (optional)
 | **Topic:** Proportions and Percent**Skills:** solving problems involving percents using a proportion, solving percent problems using data from graphical representations, solving real-world problems involving percentages and the complements of a percentage**BWS:** Ethics: analyzing a visual representation that misrepresents data |
| 95–96 | 8.4 | 321–25 | Activities* Percent Equations
* Simple Interest

Additional Materials* task cards (optional)
* calculators (optional)

Assessment* Quiz 8A (8.1–8.3)
 | **Topic:** Percent Equations**Skills:** solving percent problems using the percent equation, solving real-world percent problems including problems involving interest and sales tax |

Chapter 8: Percents

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 97 | 8.5 | 326–29 | Activities* Photo Sizing

Additional Materials* rulers
* student whiteboards (optional)
* calculators (optional)
 | **Topic:** Enlargements and Reductions**Skills:** identifying percents as an enlargement or a reduction, finding the percent setting needed to obtain an image of a given size |
| 98 | 8.4–8.5 Review |  | Assessment* Quiz 8B (8.4–8.5)
 |  |
| 99 | 8.6 | 330–34 | Activities* Percent Change
* Weather Changes

Additional Materials* calculators (optional)
 | **Topic:** Percent Change**Skills:** finding the amount of change between two values, finding the percent change between two values |
| 100 | 8.7 | 335–39 | Activities* Retail Sales

Additional Materials* word splash matching cards or an online matching activity
 | **Topic:** Percent Applications**Skills:** solving real-world problems involving discounts, solving real-world problems involving markups |
| 101–2 | Chapter 8 Review | 340–41 | Activities* Chapter 8 Cumulative Review

Teacher Tools Online* Chapter 08 Mathardy

Assessment* Quiz 8C (8.6–8.7)
 |  |
| 103 | Test |  | Assessment* Chapter 8 Test
 |

Chapter 9: Measurement

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 104 | 9.1 | 343–48 | Additional Materials* foldable ruler and other measuring devices
* yardstick (optional)
* standard ruler (optional)

AfterSchoolHelp.com* Fundamentals of Math, Measurement
 | **Topic:** Customary Units of Length**Skills:** converting between units of length using proportions and unit analysis, solving multistep real-world problems involving measures of length**BWS:** Knowledge: explaining why it is possible to measure |
| 105 | 9.2 | 349–53 | Activities* Customary Unit Conversions
* Measurements of Bible Times

Additional Materials* calculators (optional)
* 2 objects of identical size and shape, but different weights (e.g., WIFFLE ball and baseball)
 | **Topic:** Customary Units of Capacity and Weight**Skills:** converting between units of capacity and weight using proportions and unit analysis, solving multistep real-world problems involving measures of capacity and weight |
| 106 | 9.3 | 354–58 | Activities* Metric Units of Length
* Renaming Metric Units
* Mass

Additional Materials* baseball bat
* 10.75 oz can of soup
* paper clip
* dime
* liter bottle of water
* container holding 4 c of water
* grains of sand
* images of a small car, a small church baptistry, and an aerial view of 5 city blocks
* metric unit cards
* timer (optional)
 | **Topic:** Metric Units**Skills:** converting between metric units using unit analysis, solving multistep real-world problems involving metric units |

Chapter 9: Measurement

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 107 | 9.1–9.3 Review |  | Assessment* Quiz 9A (9.1–9.2)
 |  |
| 108 | 9.4 | 359–62 | Activities* Metric/Customary Unit Conversions
* Converting Temperature
* Vacation to Canada
* Metric Recipe Conversion

Additional Materials* calculators
* 12 in. ruler graduated in millimeters and parts of inches
* meter stick
* yardstick
* Pyrex® Mini Measuring Cup or a child’s metric medicine syringe
* kitchen measuring tools in customary and metric units
 | **Topic:** Relating Metric and Customary Units**Skills:** converting between related customary and metric measures, solving multistep real-world problems involving conversions between measurement systems**BWS:** Knowledge: evaluating the limitations of measurement in describing the world |
| 109 | 9.5 | 363–66 | Activities* Conversion Maze
* Pool Preparation

Additional Materials* calculators
 | **Topic:** Converting Rates**Skills:** converting between rates involving distance, capacity, and weight |
| 110–11 | Chapter 9 Review | 367 | Activities* Chapter 9 Cumulative Review

Teacher Tools Online* Chapter 09 Mathardy

Assessment* Quiz 9B (9.3−9.5)
 |  |
| 112 | Test |  | Assessment* Chapter 9 Test
 |

Chapter 10: Introduction to Geometry

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 113 | 10.1 | 369–75 | Activities* Measuring Angles

Additional Materials* protractors
* rulers

AfterSchoolHelp.com* Fundamentals of Math, Introduction to Geometry
 | **Topic:** Basic Geometry Terms**Skills:** describing basic geometric figures; classifying angles according to their measures; identifying intersecting, parallel, and perpendicular lines **BWS:** Reasoning: explaining why lines are straight in plane geometry |
| 114 | 10.2 | 376–81 | Activities* Lines and Angles
 | **Topic:** Pairs of Angles**Skills:** identifying pairs of angles; finding angle measures formed by complementary, supplementary, and vertical angles; writing and solving equations that model angle relationships |
| 115 | 10.3 | 382–88 | Additional Materials* square and rectangular cardboard boxes
* ruler or compass
* posterboard
* magnets or tape
 | **Topic:** Quadrilaterals**Skills:** classifying quadrilaterals by their angle measures and side lengths, using the perimeter to find missing side lengths of a quadrilateral, using the characteristics of quadrilaterals to find missing angle and side measures |
| 116 | 10.4 | 389–94 | Activities* Triangles
* Finding Composite Area
* Construction of Triangles

Additional Materials* globe
* home improvement store magazine

Assessment* Quiz 10A (10.1–10.3)
 | **Topic:** Parallelograms**Skills:** calculating the area and finding missing dimensions of a parallelogram, solving real-world problems involving parallelograms**BWS:** Reasoning: explaining why there are no parallel lines in spherical geometry |

Chapter 10: Introduction to Geometry

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| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 117–18 | 10.5 | 395–400 | Additional Materials* triangle vocabulary flashcards
* parallelograms and trapezoids cut from posterboard
* a string with a weight attached to one end
 | **Topic:** Triangles and Trapezoids**Skills:** classifying triangles by their side lengths, solving mathematical and real-world problems involving triangles and trapezoids |
| 119 | 10.6 | 401–5 | Activities* Geometry Terms

Additional Materials* rulers
* globe or sphere (optional)
* 2 different colors of paper (3 sheets of each)
* 5 straws
 | **Topic:** Exploring Triangle Theorems**Skills:** solving for a missing angle within a triangle, solving for a missing length using the Pythagorean Theorem, determining whether three segments can form a triangle |
| 120 | Problem Solving | 406–7 | Assessment* Quiz 10B (10.4–10.6)
 |  |
| 121–22 | Chapter 10 Review | 408–11 | Activities* Chapter 10 Cumulative Review

Teacher Tools Online* Chapter 10 Mathardy
 |  |
| 123 | Test |  | Assessment* Chapter 10 Test
 |

Chapter 11: Exploring Area and Volume

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 124–25 | 11.1 | 413–19 | Activities* Areas of Circles

Additional Materials* rulers
* vegetable or soup cans
* ribbon or flexible tape measure
* cardstock circle cut into 8 sectors

AfterSchoolHelp.com* Fundamentals of Math, Exploring Area and Volume
 | **Topic:** Circles**Skills:** calculating and solving real-world problems involving the circumference and area of a circle, calculating the area of composite figures involving circles, explaining why area is measured in square units |
| 126 | 11.2 | 420–26 |  | **Topic:** Similar Polygons**Skills:** finding missing side lengths within similar polygons, solving problems involving the area of similar polygons |
| 127–28 | 11.3 | 427–33 | Additional Materials* 3D models of prisms (optional)
* cardboard box disassembled to demonstrate a net (optional)
* graph paper

Assessment* Quiz 11A (11.1–11.2)
 | **Topic:** Surface Area of Prisms**Skills:** calculating and solving real-world problems involving the surface area of a prism**BWS:** Modeling: explaining how assumptions are used in modeling |
| 129 | 11.4 | 434–39 | Activities* Three-Dimensional Figures
* Surface Area

Additional Materials* 3D models of regular pyramids (optional)
* tracing paper (optional)
* graph paper (optional)
* rulers
 | **Topic:** Surface Area of Pyramids**Skills:** calculating and solving real-world problems involving the surface area of pyramids |

Chapter 11: Exploring Area and Volume

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 130–31 | 11.5 | 440–46 | Activities* Volume
* Cross Sections of 3D Shapes

Additional Materials* 24 small cubes (optional)
* plastic (fillable) models of a cube and a square pyramid with the same-size base and height

Assessment* Quiz 11B (11.3–11.4)
 | **Topic:** Volume of Prisms and Pyramids**Skills:** calculating and solving real-world problems involving the volume of prisms and pyramids, identifying cross sections of a prism and a pyramid**BWS:** Modeling: explaining how intentions and context affect modeling |
| 132 | 11.6 | 447–53 | Activities* Derived Areas and Volumes
* Surface Area and Volume of Cans
* STEM Project: Water Timer

Additional Materials* 3D models of prisms
* can wrapped in paper (optional)
* vegetable or soup cans with labels
* flexible tape measure or ruler and ribbon
 | **Topic:** Surface Area and Volume of Cylinders**Skills:** calculating and solving real-world problems involving the surface area and volume of a cylinder, identifying the cross sections of a cylinder |
| 133–34 | Chapter 11 Review | 454–55 | Teacher Tools Online* Chapter 11 Mathardy

Assessment* Quiz 11C (11.5–11.6)
 |  |
| 135 | Test |  | Assessment* Chapter 11 Test
 |
| 136–38 | Review and Test |  | Activities* Chapter 11 Cumulative Review

Assessment* 3rd Quarter Exam
 |

Chapter 12: Probability

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 139–40 | 12.1 | 457–62 | Activities* Simple Events

Additional Materials* calculators

AfterSchoolHelp.com* Fundamentals of Math, Probability
 | **Topic:** Simple Events**Skills:** listing the sample space for an event, finding the probability of simple events, describing the likelihood of simple events**BWS:** Design: explaining why it is not surprising that we can predict outcomes of simple events |
| 141–42 | 12.2 | 463–67 |  | **Topic:** Theoretical Probability**Skills:** calculating theoretical probabilities, determining the probability of the complement of an event, predicting the outcome of an experiment using a theoretical probability model |
| 143 | 12.3 | 468–73 | Activities* Experiment Day!

Additional Materials* number cubes (1 for each pair of students)
* coins (1 for each student)
* small, irregularly shaped objects
 | **Topic:** Experimental Probability**Skills:** completing a simple experiment, using the results to calculate probabilities, calculating experimental probability using a relative frequency table, comparing experimental and theoretical probabilities and explaining the differences**BWS:** Design: explaining why experimental outcomes don’t always match theoretical probabilities |
| 144–45 | 12.4 | 474–80 | Activities* Compound Events
* Counting at the Park
* Independent vs. Dependent Events
 | **Topic:** Compound Events**Skills:** determining sample spaces using tree diagrams, lists, or tables; calculating the number of possible outcomes using the Fundamental Counting Principle; finding the probability of compound events |

Chapter 12: Probability

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 146 | Problem Solving | 490–91 | Instructional Aids* Instructional Aid 12.PS: Counting Diagonals

Additional Materials* colored pencils
* highlighters

Assessment* Quiz 12A (12.1–12.3)
 |  |
| 147–48 | 12.5 | 481–89 | Additional Materials* calculators
* 3 coins (per group)
* 4 number cubes (per group)
* a 10-sector and 4-sector spinner (per group)
* number cards
 | **Topic:** Simulations**Skills:** finding experimental probabilities using a simulation, designing a simulation to model a compound event**BWS:** Design: analyzing the uncertainty of compound events |
| 149–50 | Chapter 12 Review | 492–93 | Activities* Chapter 12 Cumulative Review

Teacher Tools Online* Chapter 12 Mathardy

Assessment* Quiz 12B (12.4–12.5)
 |  |
| 151 | Test |  | Assessment* Chapter 12 Test
 |

Chapter 13: Statistics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 152–53 | 13.1 | 495–503 | Instructional Aids* Instructional Aid 13.1: Random Survey Methods

Activities* Survey Project

AfterSchoolHelp.com* Fundamentals of Math, Statistics
 | **Topic:** Populations and Samples**Skills:** identifying biased and unbiased samples, generating multiple samples from one population, predicting the needs of a population using data from a sample**BWS:** Ethics: creating a project that uses statistics to demonstrate love to others |
| 154–55 | 13.2 | 504–11 | Activities* Range, Mode, Median, Mean
* STEM Project: Service Project

Additional Materials* calculators
* rulers
 | **Topic:** Descriptive Measures**Skills:** organizing numerical data using a dot plot or a stem-and-leaf plot; finding the mean, median, mode, and range of a data set; making inferences about two samples by comparing the measures of central tendency |
| 156 | 13.3 | 512–17 |  | **Topic:** Mean Absolute Deviation**Skills:** finding the mean absolute deviation of a data set, making inferences about the measures of central tendency and measures of variability |
| 157–58 | 13.4 | 518–26 | Additional Materials* rulers (optional)

Assessment* Quiz 13A (13.1–13.3)
 | **Topic:** Comparing Populations**Skills:** determining the quartiles and the interquartile range for a data set, representing a data set using a box plot, making inferences about two samples from a population |

Chapter 13: Statistics

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 159–60 | 13.5 | 527–33 | Activities* Circle Graphs
* Using Statistics to Persuade
* Bar and Line Graphs
* Statistics with Graphs and Diagrams

Additional Materials* calculators
* rulers
 | **Topic:** Visualizing Data**Skills:** determining the best type of graph for the given data, identifying characteristics that can change the appearance of a graph, evaluating misleading visual representations of data**BWS:** Ethics: creating an ethical visual representation to convince others to support your service project |
| 161–62 | Chapter 13 Review | 534–35 | Activities* Chapter 13 Cumulative Review

Teacher Tools Online* Chapter 13 Mathardy

Assessment* Quiz 13B (13.4–13.5)
 |  |
| 163 | Test |  | Assessment* Chapter 13 Test
 |

Chapter 14: Relations and Functions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 164 | 14.1 | 537–42 | Activities* Graphy Duck
* Coordinate Plane

Additional Materials* graph paper (optional)

AfterSchoolHelp.com* Fundamentals of Math, Relations and Functions
 | **Topic:** Relations**Skills:** graphing a set of ordered pairs, representing a relation using a set of ordered pairs |
| 165 | 14.2 | 543–47 | Activities* Identifying Functions
 | **Topic:** Functions**Skills:** determining whether a relation is a function, determining the domain of a function, solving real-world problems using functions**BWS:** Knowledge: explaining how the concept of functions is a form of naming |
| 166 | 14.3 | 548–53 | Activities* Function Rules
 | **Topic:** Function Rules**Skills:** representing a function given a set of ordered pairs, determining whether an ordered pair satisfies a given function rule, solving real-world problems using function rules |
| 167–68 | 14.4 | 554–58 | Activities* Graphing Linear Functions
* Graphs from Experimental Ordered Pairs

Additional Materials* graph paper

Assessment* Quiz 14A (14.1–14.2)
 | **Topic:** Graphing Linear Functions**Skills:** representing a function using a table of values, graphing linear functions, solving real-world problems using graphs of functions |

Chapter 14: Relations and Functions

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| --- | --- | --- | --- | --- |
| Day | Section | Pages | Teacher Resources | Skills / Biblical Worldview Shaping (BWS) |
| 169 | 14.5 | 559–65 | Additional Materials* graph paper
 | **Topic:** Slope**Skills:** determining the slope of a line, graphing a line given the slope and a point on the line, solving real-world problems using the rate of change**BWS:** Knowledge: explaining how naming relates to the Creation Mandate |
| 170 | Problem Solving | 566–67 | Activities* Using Graphs to Predict

Assessment* Quiz 14B (14.3–14.4)
 |  |
| 171–72 | 14.6 (Examples4–5 are optional.) | 568–73 | Activities* Formulas for Figurate Number Patterns

Additional Materials* graph paper
 | **Topic:** Sequences**Skills:** identifying patterns in sequences of numbers, finding missing terms in a sequence of numbers |
| 173–74 | Chapter 14 Review | 574–75 | Teacher Tools Online* Chapter 14 Mathardy

Assessment* Quiz 14C (14.5–14.6)
 |  |
| 175 | Test |  | Assessment* Chapter 14 Test
 |
| 176–80 | Review and Test |  | Activities* Chapter 14 Cumulative Review

Assessment* 4th Quarter Exam
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