**Algebra 1 Standard Lesson Plan Overview**

This Standard Lesson Plan allocates 82 days for each semester.

Test Packet, supplementary material to Student Text and Teacher’s Edition

Student Activities, supplementary material to Student Text and Teacher’s Edition

Teacher’s Toolkit CD, included in Teacher’s Edition

\* Bible Integration topics covered in the Teacher’s Edition or Student Activities

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| Day | Topic | Pages | Support Materials | Bible Integration\* |
| **Chapter 1: Real Number Operations** | | | | |
| 1 | Introduction | viii–ix |  | * the complexity of God’s created universe * the benefits of diligence * the Dominion Mandate |
| 2 | 1.1 Sets of Numbers | 1–6 | Dominion Mandate: God’s Command to Humanity | * the underlying order in apparent chaos illustrated by fractals\* |
| 3 | 1.2 Number Lines, Opposites, and Absolute Values | 7–11 | Prime Numbers | * God’s infinite existence |
| 4 | Sequences—Evens, Odds, and Multiples | 12 | Quiz 1 (1.1–1.2) | * pattern recognition in God’s creation |
| 5 | 1.3 Adding Rational Numbers | 13–17 |  |  |
| 6 | 1.4 Subtracting Rational Numbers  Careers in Math—Mathematician | 18–22 | Math History: Modern Symbols Introduced Before 1600 | * glorifying God and demonstrating love for others through our occupations |
| 7 | 1.5 Multiplying Rational Numbers | 22–27 | Quiz 2 (1.3–1.4)  Dominion Modeling: Constructing a 3D Fractal  Properties of Set Operations | * fractals can model the intricate design of God’s creation and create beautiful art\* |
| 8 | 1.6 Dividing Rational Numbers | 28–33 | Operations with Rational Numbers |  |
| 9 | 1.7 Exponents | 33–37 | Quiz 3 (1.5–1.6) |  |
| 10 | 1.8 Order of Operations  Technology Corner | 38–41 | Using Technology: Introduction to the TI-84+  Order of Operations | * better understanding God’s creation and implementing solutions to problems |
| 11 | Chapter 1 Review | 42–43 | Quiz 4 (1.7–1.8)  Mathardy: Ch. 1  Chapter 1 Review  Cumulative Review 1 |  |
| 12 | Chapter 1 Test | | | |

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| **Chapter 2: Variables and Equations** | | | | |
| 13 | 2.1 Variables and Algebraic Expressions | 44–50 | Dominion Mandate: Constants and Variables | * fulfilling God’s command to be wise stewards of His resources * trusting in God’s unchanging character\* |
| 14 | 2.2 Evaluating Algebraic Expressions  Technology Corner | 51–56 |  |  |
| 15 | 2.3 Using the Distributive Property | 56–61 | Quiz 1 (2.1–2.2)  Using the Distributive Property  Algebraic Expressions and Translation |  |
| 16 | 2.1–2.3 review  Math in History—Isaac Newton | 62 |  | * the danger of placing human reasoning above scriptural revelation |
| 17 | 2.4 Solving One-Step Equations | 63–68 | Math History: Al-Khwarizmi  Equations 1 | * dealing justly in our interactions with others\* |
| 18 | 2.5 Solving Two-Step Equations | 68–74 | Quiz 2 (2.3–2.4) | * the importance of planning\* |
| 19 | 2.6 Simplifying Equations | 74–78 | Inverse Operations |  |
| 20 | Sequences—Arithmetic Sequences | 79 | Quiz 3 (2.5–2.6) |  |
| 21 | 2.7 Solving Multi-Step Equations | 80–84 | Using Technology: Editing |  |
| 22 | 2.8 Eliminating Fractions and Decimals | 84–89 | Equations 2  GCF and LCM |  |
| 23 |
| 24 | Chapter 2 Review | 90–91 | Quiz 4 (2.7–2.8)  Mathardy: Ch. 2  Chapter 2 Review  Cumulative Review 2 |  |
| 25 | Chapter 2 Test | | | |

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| **Chapter 3: Using Equations** | | | | |
| 26 | 3.1 Solving Literal Equations | 92–98 | Math History: Fibonacci  Literal Equations | * wise management of God-given resources |
| 27 |
| 28 | 3.2 Ratios and Proportions | 98–103 | Dominion Mandate: Numbers in Creation  Unit Prices and Best Buys | * discovering occurrences of the Fibonacci sequence and the golden ratio in nature\* |
| 29 | Sequences—Fibonacci and Golden Ratio Sequences  Technology Corner | 104–5 | Quiz 1 (3.1–3.2) | * praising God for the beauty and complexity of creation |
| 30 | 3.3 Similar Figures and Scale Models | 105–11 | Scales for Maps and Drawings |  |
| 31 | 3.4 The Percent Equation | 112–16 |  |  |
| 32 | 3.5 Percent Change and Error  Careers in Math—Actuary | 117–21 | Quiz 2 (3.3–3.4)  Ratios, Rates, Proportions, and Percents | * submitting to whatever God wills * the wisdom of planning * serving God as an actuary |
| 33 | 3.6 Money | 122–28 | Using Technology: Math and Catalog Menus | * biblical financial principles |
| 34 |
| 35 | 3.7 Motion | 128–34 | Quiz 3 (3.5–3.6) |  |
| 36 | 3.8 Mixtures | 135–39 | Applied Problems |  |
| 37 | 3.6–3.8 review |  | Quiz 4 (3.7–3.8) |  |
| 38 | Chapter 3 Review | 140–41 | Mathardy: Ch. 3  Chapter 3 Review  Cumulative Review 3 |  |
| 39 | Chapter 3 Test | | | |

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| **Chapter 4: Solving Inequalities** | | | | |
| 40 | 4.1 Inequalities | 142–48 | Dominion Mandate: Money | * recognizing the greatness of the one true God * biblical financial principles\* |
| 41 | 4.2 Properties of Inequality | 148–52 | Math History: Modern Symbols Introduced After 1600  Properties of Inequality | * God’s interest in everyday things\* |
| 42 | 4.3 Solving Inequalities | 153–56 | Quiz 1 (4.1–4.2)  Solving Inequalities | * true wisdom based on the fear of the Lord |
| 43 | Sequences—Arithmetic Sums | 157 | Quiz 2 (4.3) |  |
| 44 | 4.4 Conjunctions | 158–62 |  | * God’s special design for ocean species * Jesus’s teachings on wise investments |
| 45 | 4.5 Disjunctions | 163–67 | Boolean Algebra  Compound Inequalities | * being faithful with God’s resources |
| 46 | 4.4–4.5 review  Math in History—The Bernoulli Family | 168 | Quiz 3 (4.4–4.5) | * warnings against envy |
| 47 | 4.6 Absolute Value Equations | 169–72 |  |  |
| 48 | 4.7 Absolute Value Inequalities | 173–76 | Absolute Values  Using Technology: Graphing Inequalities |  |
| 49 | 4.6–4.7 review  Technology Corner | 177 | Quiz 4 (4.6–4.7) |  |
| 50 | Chapter 4 Review | 178–79 | Mathardy: Ch. 4  Chapter 4 Review  Cumulative Review 4 |  |
| 51 | Chapter 4 Test | | | |

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| **Chapter 5: Relations and Functions** | | | | |
| 52 | 5.1 Points in the Coordinate Plane | 180–87 | Dominion Mandate: Omnipresent, Omniscient God | * exercising effective dominion through the ability to describe exact locations on the earth * the effects of God’s omniscience and omnipresence\* |
| 53 | 5.2 Relations and Functions | 187–92 |  |  |
| 54 | 5.3 Graphs of Relations and Functions  Technology Corner | 193–99 | Quiz 1 (5.1–5.2)  Math History: Oresme  Using Technology: Angle Menu  Relations and Functions |  |
| 55 | 5.4 Using Graphs  Careers in Math—Market Research Analyst | 200–208 | Cobweb Diagrams | * modeling Christ * the influence of Christian professionals in ethical decisions of businesses * the dangers of extrapolation\* |
| 56 | 5.5 Function Rules | 209–15 | Quiz 2 (5.3–5.4)  Writing Function Rules |  |
| 57 | 5.6 Direct and Inverse Variations | 215–20 | Quiz 3 (5.5)  Direct and Inverse Variation Sudoku  Spaghetti Bridge Strength | * God’s consistency and dependability seen in universal laws of nature |
| 58 | Sequences—Geometric Sequences | 221 |  |  |
| 59 | 5.7 Graphing Absolute Value Functions | 222–26 |  |  |
| 60 | 5.6–5.7 review |  | Quiz 4 (5.6–5.7) |  |
| 61 | Chapter 5 Review | 227–29 | Mathardy: Ch. 5  Chapter 5 Review  Cumulative Review 5 |  |
| 62 | Chapter 5 Test | | | |

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| **Chapter 6: Linear Functions** | | | | |
| 63 | 6.1 Graphing Lines  Math in History—René Descartes | 230–37 | Dominion Mandate: God Is Greater Than | * opportunities for serving the Lord in many “secular” occupations * the danger of using human reason instead of God’s Word as the test of truth * recognizing equations, inequalities, and functions in Scripture\* |
| 64 | 6.2 Slope | 238–44 | Math History: Eudoxus |  |
| 65 | 6.3 Slope-Intercept Form of a Line | 245–49 | Quiz 1 (6.1–6.2)  Graphs of Lines  Direct Variation and Linear Equations | * the math behind personal safety |
| 66 | 6.4 Writing Linear Equations | 250–55 |  |  |
| 67 | 6.3–6.4 review |  | Quiz 2 (6.3–6.4) |  |
| 68 | 6.5 Parallel and Perpendicular Lines | 256–61 | Forms of Linear Equations | * the math behind benevolent construction projects |
| 69 | Sequences—Converging and Diverging Sequences | 262 | Quiz 3 (6.5) |  |
| 70 | 6.6 Trend Lines and Correlation  Technology Corner | 263–68 | Using Technology: Regression Lines  Using Correlation and Lines of Best Fit | * correlation versus causation\* |
| 71 | 6.7 Graphing Linear Inequalities | 269–73 | Linear Equations and Inequalities | * demonstrating the love of God by using abilities to help others |
| 72 | Chapter 6 Review | 274–75 | Quiz 4 (6.6–6.7)  Mathardy: Ch. 6  Chapter 6 Review  Cumulative Review 6 |  |
| 73 | Chapter 6 Test | | | |

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| **Chapter 7A: Linear Systems** | | | | |
| 74 | 7.1 Graphing Systems of Equations  Technology Corner | 276–83 | Dominion Mandate: Jesus Christ, the Messiah  Graphing Systems  Breaking Even | * applying mathematics in fulfilling the Great Commission * pointing to the deity of Jesus Christ through the fulfillment of the many messianic prophecies * contrasting financial profit and greed\* |
| 75 | 7.2 Solving Simple Systems by Substitution | 284–87 |  |  |
| 76 | 7.3 Solving Advanced Systems by Substitution | 288–93 | Quiz 1 (7.1–7.2)  Solving Systems by Substitution  Substitution Method Strategies |  |
| 77 | Sequences—Limit of a Sequence | 294 |  |  |
| 78 | 7.4 Solving Systems by Elimination | 295–300 | Math History: Zhu Shijie  Solving Systems by Elimination |  |
| 79 | 7.3–7.4 review |  | Quiz 2 (7.3–7.4) |  |
| 80 | Review for Final Exam | | | |
| 81 | Review for Final Exam | | | |
| 82 | Final Exam (Chapters 1–6) | | | |

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| **Chapter 7B: Linear Systems** | | | | |
| 83 | 7.5 Special Systems  Careers in Math—Computer Programmer/ Software Engineer | 300–307 | Three-Dimensional Systems | * effective management of God-given resources through computer-related careers |
| 84 | 7.6 Motion Problems | 308–12 |  |  |
| 85 | 7.5–7.6 review |  | Quiz 3 (7.5–7.6) |  |
| 86 | 7.7 Mixture Problems | 313–18 | Word Problems |  |
| 87 | 7.8 Solving Systems of Inequalities | 318–23 | Using Technology: Graphing Systems of Linear Inequalities |  |
| 88 | 7.7–7.8 review |  | Quiz 4 (7.7–7.8) |  |
| 89 | Chapter 7 Review | 324–25 | Mathardy: Ch. 7  Chapter 7 Review  Cumulative Review 7 |  |
| 90 | Chapter 7 Test | | | |

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| **Chapter 8: Exponents** | | | | |
| 91 | 8.1 Products and Powers | 326–32 | Math History: Einstein  The Binary Number System | * using the Internet to serve God and others in love * applying biblical principles to new situations |
| 92 | 8.2 Quotients  Math in History—Karl Friedrich Gauss | 333–38 |  | * discerning good from evil |
| 93 | 8.3 Scientific Notation | 338–43 | Quiz 1 (8.1–8.2)  Scientific Notation  Large Numbers | * wise use of the Internet |
| 94 | 8.4 Translating Power Functions | 344–49 | Translating Power Functions |  |
| 95 | 8.5 Exponential Functions  Technology Corner | 350–56 | Quiz 2 (8.3–8.4)  Using Technology: Families of Functions  Exponential Functions | * using technology to manage God’s creation while realizing that Christ alone gives power for success |
| 96 | 8.6 Exponential Growth and Decay | 357–64 | Dominion Mandate: Exponential Decay | * sharing our faith and compassion over the Internet * benefiting others through the use of mathematical models\* |
| 97 | Sequences—Infinite Geometric Sums | 365 | Quiz 3 (8.5–8.6) |  |
| 98 | Chapter 8 Review | 366–67 | Mathardy: Ch. 8  Chapter 8 Review  Cumulative Review 8 |  |
| 99 | Chapter 8 Test | | | |

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| **Chapter 9: Polynomials** | | | | |
| 100 | 9.1 Classifying and Evaluating Polynomials | 368–73 | Velocity | * providing for physical and spiritual needs through the use of mathematical models |
| 101 | Careers in Math—Engineer  9.2 Adding and Subtracting Polynomials | 374–79 | Math History: Gradual Development of Algebraic Thought | * fulfilling the Dominion Mandate through product design engineering |
| 102 | 9.3 Multiplying Polynomials  Technology Corner | 379–84 | Quiz 1 (9.1–9.2)  Using Technology: Checking Polynomial Operations  Polynomials | * recognizing responsibility in proper management of wildlife and natural resources |
| 103 | 9.4 Multiplying Binomials Using FOIL | 385–88 |  |  |
| 104 | Sequences—Sums of Perfect Squares and Cubes | 389 | Quiz 2 (9.3–9.4) |  |
| 105 | 9.5 Special Products | 390–93 | Multiplying Polynomials | * evangelizing the earth’s increasing population |
| 106 | 9.6 Dividing Polynomials | 394–99 | Dividing Polynomials  Operations and Properties | * demonstrating increased opportunities to show Christ’s love by providing for the needy through applied mathematics |
| 107 | 9.6 review |  | Quiz 3 (9.5–9.6)  Dominion Mandate: Biblical Multiplication and Division | * examining occurrences of multiplication and division in Scripture\* |
| 108 | Chapter 9 Review | 400–401 | Mathardy: Ch. 9  Chapter 9 Review  Cumulative Review 9 |  |
| 109 | Chapter 9 Test | | | |

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| **Chapter 10: Factoring Polynomials** | | | | |
| 110 | 10.1 Factoring Common Monomials | 402–7 | Math History: Diophantus  Appendix J: UnFOILing: Roots and Factors | * fulfilling the Dominion Mandate by harnessing God-given resources and lessening the suffering resulting from natural disasters |
| 111 | Sequences—Factorial Sequences | 408 |  |  |
| 112 | 10.2 Factoring Trinomials of the Form x2 + bx + c | 409–13 | Common Factors and Factoring Trinomials | * God‘s control of our climate |
| 113 | 10.1–10.2 review  Math in History—Grace Hopper | 414 | Quiz 1 (10.1–10.2) | * developing our God-given talents into a life of service and fruitfulness |
| 114 | 10.3 Factoring Trinomials of the Form ax2 + bx + c | 415–19 | Dominion Mandate: Climate Change | * considering the wondrous works of God by investigation of weather phenomena\* |
| 115 | 10.4 Special Patterns  Technology Corner | 420–24 | Factoring Trinomials and Special Patterns  Factoring Differences | * recognizing that consistency and common patterns of creation point to the Creator |
| 116 | 10.5 Factoring Completely | 425–28 | Quiz 2 (10.3–10.4)  Factoring Completely  Using Technology: Factor Check  Factor Formula |  |
| 117 | 10.5 review |  | Quiz 3 (10.5) |  |
| 118 | Chapter 10 Review | 429 | Mathardy: Ch. 10  Chapter 10 Review  Cumulative Review 10 |  |
| 119 | Chapter 10 Test | | | |

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| **Chapter 11: Radicals** | | | | |
| 120 | 11.1 Expressing Roots  Technology Corner | 430–36 | Imaginary Numbers? | * recognizing value and purpose for life as being created in God’s image, which affects the choices we make * appreciating the beauty and order in nature as a reflection of our marvelous Creator\* |
| 121 | 11.2 Simplifying Radicals | 437–41 | Simplifying Radicals | * realizing God’s ultimate power in the gospel as we use technology to assist in the spread of the gospel |
| 122 | 11.3 Multiplying Radicals | 441–45 | Quiz 1 (11.1–11.2) |  |
| 123 | Sequences—Summation (Sigma) Notation | 446 |  |  |
| 124 | 11.4 Dividing Radicals | 447–52 |  |  |
| 125 | 11.3–11.4 review |  | Quiz 2 (11.3–11.4) |  |
| 126 | 11.5 Adding and Subtracting Radicals | 453–56 | Operations with Radicals  Golden Ratios, Rectangles, and Spirals |  |
| 127 | 11.6 The Pythagorean Theorem | 457–63 | Pythagorean Triples  Math History: Pythagoras   * Appendix K: Society of the Pythagoreans | * using Scripture to evaluate the beliefs of the Society of the Pythagoreans\* |
| 128 |
| 129 | 11.7 Multiplying and Dividing Radical Expressions  Careers in Math—Chemist/Chemical Engineer | 464–69 | Quiz 3 (11.5–11.6)  Dominion Mandate: Transcendental Numbers | * harnessing the potential of God’s creation for His glory as a chemist * recognizing the coherence and beauty of mathematics as evidence of God’s existence\* |
| 130 | 11.8 Radical Equations | 470–75 | Radical Expressions and Equations | * deriving greater enjoyment from and bringing greater praise to God through increased understanding of His creation |
| 131 | 11.9 Radical Functions | 475–79 | Quiz 4 (11.7–11.8)  Using Technology: Radical Functions |  |
| 132 | Chapter 11 Review | 480–81 | Quiz 5 (11.9)  Mathardy: Ch. 11  Chapter 11 Review  Cumulative Review 11 |  |
| 133 | Chapter 11 Test | | | |

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| **Chapter 12: Quadratic Functions** | | | | |
| 134 | 12.1 Solving Quadratic Equations by Factoring | 482–88 | Solving Quadratic Equations by Factoring | * seeing God’s faithfulness to us through consistency in His creation |
| 135 | 12.2 Solving Quadratic Equations by Taking Roots  Technology Corner  Math in History—John von Neumann | 489–94 |  | * the complexity of the human brain and how it points to the intelligence and existence of God |
| 136 | 12.3 Completing the Square | 495–98 | Quiz 1 (12.1–12.2) |  |
| 137 | 12.4 Completing the Square with Leading Coefficients | 499–502 | Taking Roots and Completing the Square |  |
| 138 | 12.3–12.4 review |  | Quiz 2 (12.3–12.4) |  |
| 139 | 12.5 The Quadratic Formula | 502–6 | The Quadratic Formula |  |
| 140 | 12.6 More Quadratic Equations | 507–10 | Polynomial and Radical Equations |  |
| 141 | 12.5–12.6 review |  | Quiz 3 (12.5–12.6) |  |
| 142 | 12.7 Quadratic Functions: f(x) 5 ax2 + c | 511–15 | Math History: Apollonius |  |
| 143 | 12.8 Quadratic Functions: f(x) 5 a(x 2 h)2 +k | 516–21 | Quadratic Functions, Optimization, and Estimation |  |
| 144 | 12.7–12.8 review |  | Quiz 4 (12.7–12.8) |  |
| 145 | 12.9 Zeros of a Function | 522–26 | Using Technology: Solving Quadratic Equations by Graphing  Dominion Mandate: The Quadratic Function in Action | * the consistency of physical phenomena resulting from God’s providential care of His creation * fulfilling the Dominion Mandate through the modeling of physical phenomena with quadratic functions\* |
| 146 | Sequences—Quadratic Arithmetic Sums | 527 | Quiz 5 (12.9) |  |
| 147 | Chapter 12 Review | 528–29 | Mathardy: Ch. 12  Chapter 12 Review  Cumulative Review 12 |  |
| 148 | Chapter 12 Test | | | |

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| **Chapter 13: Rational Expressions** | | | | |
| 149 | 13.1 Simplifying Rational Expressions | 530–37 | Math History: Tartaglia | * using mathematical reasoning to effectively model the physical universe as a reflection of the Creator |
| 150 | 13.2 Multiplying and Dividing Rational Expressions | 538–41 |  | * reasoning based on the truth of God’s Word |
| 151 | Sequences—Harmonic Sequences | 542 | Quiz 1 (13.1–13.2) |  |
| 152 | 13.3 Adding and Subtracting Expressions with Common Denominators | 543–46 | Dominion Mandate: When I Consider Thy Heavens | * letting the glorification of God be our motivation for the study of mathematics |
| 153 | 13.4 Adding and Subtracting Expressions with Different Denominators | 547–51 | Explaining Why  GCF and LCM |  |
| 154 | 13.5 Complex and Mixed Expressions | 552–56 | Quiz 2 (13.3–13.4)  Operations with Rational Expressions |  |
| 155 | 13.6 Solving Rational Equations | 556–60 | Using Technology: Solving Rational Equations  Rational Equations |  |
| 156 | 13.5–13.6 review |  | Quiz 3 (13.5–13.6) |  |
| 157 | 13.7 Applying Rational Equations | 560–66 | Application Problems  Electrical Resistance | * working in a way that is pleasing to God |
| 158 | Careers in Math—Operations Research Analyst  13.8 Graphing Rational Functions  Technology Corner | 567–74 |  | * fulfilling the Dominion Mandate as an operations analyst by organizing complex processes to help others achieve their goals |
| 159 | 13.7–13.8 review |  | Quiz 4 (13.7–13.8) |  |
| 160 | Chapter 13 Review | 575–76 | Mathardy: Ch. 13  Chapter 13 Review  Cumulative Review 13 |  |
| 161 | Chapter 13 Test | | | |
| 162 | Review for Final Exam | | | |
| 163 | Review for Final Exam | | | |
| 164 | Final Exam (Chapters 7–13) | | | |