**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 NumbersCareers 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 FractalProperties 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 OperationsTechnology 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. 1Chapter 1 ReviewCumulative 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 ExpressionsTechnology Corner | 51–56 |  |  |
| 15 | 2.3 Using the Distributive Property | 56–61 | Quiz 1 (2.1–2.2)Using the Distributive PropertyAlgebraic Expressions and Translation |  |
| 16 | 2.1–2.3 reviewMath 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-KhwarizmiEquations 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 2GCF and LCM |  |
| 23 |
| 24 | Chapter 2 Review | 90–91 | Quiz 4 (2.7–2.8)Mathardy: Ch. 2Chapter 2 ReviewCumulative Review 2 |  |
| 25 | Chapter 2 Test |

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| **Chapter 3: Using Equations** |
| 26 | 3.1 Solving Literal Equations | 92–98 | Math History: FibonacciLiteral Equations | * wise management of God-given resources
 |
| 27 |
| 28 | 3.2 Ratios and Proportions | 98–103 | Dominion Mandate: Numbers in CreationUnit Prices and Best Buys | * discovering occurrences of the Fibonacci sequence and the golden ratio in nature\*
 |
| 29 | Sequences—Fibonacci and Golden Ratio SequencesTechnology 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 ErrorCareers 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. 3Chapter 3 ReviewCumulative 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 1600Properties 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 AlgebraCompound Inequalities | * being faithful with God’s resources
 |
| 46 | 4.4–4.5 reviewMath 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 ValuesUsing Technology: Graphing Inequalities |  |
| 49 | 4.6–4.7 reviewTechnology Corner | 177 | Quiz 4 (4.6–4.7) |  |
| 50 | Chapter 4 Review | 178–79 | Mathardy: Ch. 4Chapter 4 ReviewCumulative 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 FunctionsTechnology Corner | 193–99 | Quiz 1 (5.1–5.2)Math History: OresmeUsing Technology: Angle MenuRelations and Functions |  |
| 55 | 5.4 Using GraphsCareers 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 SudokuSpaghetti 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. 5Chapter 5 ReviewCumulative Review 5 |  |
| 62 | Chapter 5 Test |

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| **Chapter 6: Linear Functions** |
| 63 | 6.1 Graphing LinesMath 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 LinesDirect 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 CorrelationTechnology Corner | 263–68 | Using Technology: Regression LinesUsing 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. 6Chapter 6 ReviewCumulative Review 6 |  |
| 73 | Chapter 6 Test |

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| **Chapter 7A: Linear Systems** |
| 74 | 7.1 Graphing Systems of EquationsTechnology Corner | 276–83 | Dominion Mandate: Jesus Christ, the MessiahGraphing SystemsBreaking 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 SubstitutionSubstitution Method Strategies |  |
| 77 | Sequences—Limit of a Sequence | 294 |  |  |
| 78 | 7.4 Solving Systems by Elimination | 295–300 | Math History: Zhu ShijieSolving 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 SystemsCareers 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. 7Chapter 7 ReviewCumulative Review 7 |  |
| 90 | Chapter 7 Test |

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| **Chapter 8: Exponents** |
| 91 | 8.1 Products and Powers | 326–32 | Math History: EinsteinThe Binary Number System | * using the Internet to serve God and others in love
* applying biblical principles to new situations
 |
| 92 | 8.2 QuotientsMath 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 NotationLarge Numbers | * wise use of the Internet
 |
| 94 | 8.4 Translating Power Functions | 344–49 | Translating Power Functions |  |
| 95 | 8.5 Exponential FunctionsTechnology Corner | 350–56 | Quiz 2 (8.3–8.4)Using Technology: Families of FunctionsExponential 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. 8Chapter 8 ReviewCumulative 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—Engineer9.2 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 PolynomialsTechnology Corner | 379–84 | Quiz 1 (9.1–9.2)Using Technology: Checking Polynomial OperationsPolynomials | * 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 PolynomialsOperations 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. 9Chapter 9 ReviewCumulative Review 9 |  |
| 109 | Chapter 9 Test |

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| **Chapter 10: Factoring Polynomials** |
| 110 | 10.1 Factoring Common Monomials | 402–7 | Math History: DiophantusAppendix 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 reviewMath 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 PatternsTechnology Corner | 420–24 | Factoring Trinomials and Special PatternsFactoring 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 CompletelyUsing Technology: Factor CheckFactor Formula |  |
| 117 | 10.5 review |  | Quiz 3 (10.5) |  |
| 118 | Chapter 10 Review | 429 | Mathardy: Ch. 10Chapter 10 ReviewCumulative Review 10 |  |
| 119 | Chapter 10 Test |

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| **Chapter 11: Radicals** |
| 120 | 11.1 Expressing RootsTechnology 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 RadicalsGolden Ratios, Rectangles, and Spirals |  |
| 127 | 11.6 The Pythagorean Theorem | 457–63 | Pythagorean TriplesMath 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 ExpressionsCareers 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. 11Chapter 11 ReviewCumulative 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 RootsTechnology CornerMath 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 GraphingDominion 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. 12Chapter 12 ReviewCumulative 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 WhyGCF 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 EquationsRational Equations |  |
| 156 | 13.5–13.6 review |  | Quiz 3 (13.5–13.6) |  |
| 157 | 13.7 Applying Rational Equations | 560–66 | Application ProblemsElectrical Resistance | * working in a way that is pleasing to God
 |
| 158 | Careers in Math—Operations Research Analyst13.8 Graphing Rational FunctionsTechnology 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. 13Chapter 13 ReviewCumulative Review 13 |  |
| 161 | Chapter 13 Test |
| 162 | Review for Final Exam |
| 163 | Review for Final Exam |
| 164 | Final Exam (Chapters 7–13) |