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*

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			

Day	Topic	Pages	Support Materials	Bible Integration*
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 23	2.8 Eliminating Fractions and Decimals	84–89	• Equations 2 • GCF and LCM	
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			
Chapter 3: Using Equations				
26 27	3.1 Solving Literal Equations	92–98	• Math History: Fibonacci • Literal Equations	• wise management of God-given resources
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	

continued

Day	Topic	Pages	Support Materials	Bible Integration*
Chapter 3: Using Equations *(continued)*				
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 34	3.6 Money	122–28	• Using Technology: Math and Catalog Menus	• biblical financial principles
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			

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			

Day	Topic	Pages	Support Materials	Bible Integration*
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			

Day	Topic	Pages	Support Materials	Bible Integration*
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			

Day	Topic	Pages	Support Materials	Bible Integration*
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)			

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			

Day	Topic	Pages	Support Materials	Bible Integration*
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			
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

continued

Day	Topic	Pages	Support Materials	Bible Integration*
Chapter 9: Polynomials *(continued)*				
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			

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 $x^2 + bx + c$	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 $ax^2 + bx + c$	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			

Day	Topic	Pages	Support Materials	Bible Integration*
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	
127 128	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*
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			

Day	Topic	Pages	Support Materials	Bible Integration*
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: $f(x) = ax^2 + c$	511–15	• Math History: Apollonius	
143	12.8 Quadratic Functions: $f(x) = a(x - h)^2 + k$	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			

Day	Topic	Pages	Support Materials	Bible Integration*
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)			