## Geometry 3<sup>rd</sup> Edition Standard Lesson Plan Overview

This Standard Lesson Plan allocates 90 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 exposed in the Teacher's Edition

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

Day	Topic	Pages	Support Materials	Bible Integration
Chapter 1	: Incidence Geomet	ry		
1	Introduction	xii–xv		God created all things
2	1.1 Sets and Subsets	xvi–5	Math History: Georg Cantor	<ul> <li>God's order seen through geometry reveals His wisdom</li> <li>do all to the glory of God</li> </ul>
3	1.2 Set Operations	6–8	<ul><li>Elements and Subsets</li><li>Set Operations</li><li>Intersection and Union</li></ul>	
4	1.3 Undefined Terms and Definitions	9–13	<ul> <li>Quiz 1 (1.1–1.2)</li> <li>Types of Definitions</li> <li>Symbols and Names</li> </ul>	<ul> <li>faith in God's Word is the foundation for growth</li> </ul>
5	Analytic Geometry— Graphing Points	14–15	<ul> <li>Quiz 2 (1.3)</li> <li>Calculator Skills</li> </ul>	
6	1.4 A Framework with Definitions	16–20	Lines: Parallel, Intersecting, Perpendicular	
7	1.5 An Ideal Euclidean Model	20–24		<ul> <li>Christ is the Truth*</li> <li>man's incomplete knowledge</li> </ul>
8	1.6 Incidence Theorems	25–29	<ul> <li>Quiz 3 (1.4–1.5)</li> <li>Practice</li> </ul>	
9	Geometry Through History—Euclid 1.7 Sketches and Constructions	30–35	<ul> <li>Drawing Skills</li> <li>Geometer's Sketchpad Investigations</li> </ul>	<ul> <li>God is the source of knowledge</li> <li>construction instruments in Isaiah 44:13 before the time of Euclid*</li> </ul>
10	Geometry and Scripture—God's Consistency	36–37	<ul> <li>Quiz 4 (1.6–1.7)</li> <li>Bible: God—The Source of Truth</li> </ul>	<ul> <li>God's consistency</li> <li>God is the source of truth (His divine nature, attributes, and works)*</li> </ul>
11	Chapter 1 Review	38–39	<ul><li>Terms and Symbols</li><li>Cumulative Review</li></ul>	
12	Chapter 1 Test			

Day	Торіс	Pages	Support Materials	Bible Integration
Chapter 2	: Subsets of Lines,	Planes, and S	Space	
13	2.1 Subsets of Lines	40–44	<ul><li>Symbols and Names</li><li>Calculator Skills</li></ul>	confidence in Christ, who left behind an empty tomb
14	2.2 Betweenness	45–47	Symbols and Names	all have sinned; sin breaks     fellowship with God
15	2.3 Subsets of Planes	48–51	<ul> <li>Quiz 1 (2.1–2.2)</li> <li>Drawing Skills</li> <li>Symbols and Names</li> </ul>	biblical separation
16	Geometry Around Us—Designers & Their Patterns	52–53	<ul> <li>Quiz 2 (2.3)</li> <li>Bible: Christ—The Embodiment of Truth</li> </ul>	geometry in creation*
17	2.4 Curves and Circles Analytic Geometry— Graphing Curves	54–60	<ul> <li>Math History: Jan Brouwer</li> <li>Geometer's Sketchpad Investigations</li> <li>Circles</li> </ul>	the Trinity
18	2.5 Polygons and Convexity	61–67	<ul><li>Prefixes in Detail</li><li>Polygons</li></ul>	
19	2.4–2.5 Review		<ul> <li>Quiz 3 (2.4–2.5)</li> <li>Tessellations</li> </ul>	
20	2.6 Subsets of Space	68–73	<ul> <li>Moebius Bands</li> <li>3–D Figures</li> </ul>	
21	2.7 Polyhedra	73–77	Terms and Symbols	the sure foundation of the Lord     Jesus
22	Geometry and Scripture— Variables	78–79	• Quiz 4 (2.6–2.7)	<ul> <li>instances of geometry in the Bible</li> </ul>
23	Chapter 2 Review	80–81	<ul><li>Practice</li><li>Cumulative Review</li></ul>	
24	Chapter 2 Test			

Chapter 3	Chapter 3: Segments and Measurement					
25	3.1 Real Numbers	82–88		<ul> <li>the law as a spiritual schoolmaster showing us our need</li> </ul>		
26	3.2 Segment Measure	89–92	Sports in Brief			
27	Analytic Geometry—The Distance Formula	93	• Quiz 1 (3.1–3.2)			
28	3.3 Segment Bisectors	94–97	<ul><li>Pasch's Postulate</li><li>Calculator Skills</li></ul>			
29	3.4 Perimeter & Circumference	97–101	<ul> <li>Quiz 2 (3.2–3.3)</li> <li>Math History: Gaspard Monge</li> <li>Perimeter Formulas</li> </ul>	the circumference of a circle approximated in the Bible		

Day	Topic	Pages	Support Materials	Bible Integration
30	Geometry Through History— Archimedes 3.5 Polygons: Inscribed and Circumscribed	102–8	<ul> <li>Design in Detail</li> <li>Kinds of Geometry</li> <li>Geometer's Sketchpad Investigations</li> </ul>	
31	3.4–3.5 Review		• Quiz 3 (3.4–3.5)	
32	3.6 Segment Constructions	109–11	Construction Skills	
33	Geometry and Scripture— Distance	112–13	<ul> <li>Quiz 4 (3.6)</li> <li>Bible: Creation—The Reflection of Truth</li> </ul>	<ul> <li>measurements in the Bible</li> <li>Creation (by God through Christ) reflecting truth*</li> </ul>
34	Chapter 3 Review	114–15	<ul><li>Terms and Symbols</li><li>Cumulative Review</li></ul>	
35	Chapter 3 Test			

Chapter 4	Chapter 4: Angles and Measurement				
36	4.1 Inequalities	116–20	Calculator Skills	<ul> <li>God's creation displays order and design*</li> </ul>	
37	4.2 Angle Measure	121–26	Math History: Jean- Victor Poncelet		
38	Analytic Geometry— Slopes of Lines	127–28	• Quiz 1 (4.1–4.2)		
39	4.3 Angle Bisectors	129–34	Lines: Parallel, Intersecting, Perpendicular		
40	4.4 Angle Properties	135–41	Locus Problems		
41	Geometry Around Us—Architecture	142–43	<ul><li>Quiz 2 (4.3–4.4)</li><li>Architecture in Brief</li></ul>		
42	4.5 Polygons: Triangles and Quadrilaterals	144–49	<ul> <li>Quadrilaterals in Detail</li> <li>Triangles</li> <li>Quadrilaterals</li> </ul>		
43	4.6 Angle Constructions	150–53	<ul> <li>Quiz 3 (4.5)</li> <li>Construction Skills</li> <li>Geometer's Sketchpad Investigations</li> </ul>	<ul> <li>God created the universe in an orderly manner</li> <li>orderliness in the universe maintained</li> </ul>	
44	Geometry and Scripture— Architecture	154–55	<ul> <li>Quiz 4 (4.6)</li> <li>Bible: Heaven—The Triumph of Truth</li> </ul>	<ul> <li>architecture in the Bible</li> <li>heaven as the triumph of truth*</li> </ul>	
45	Chapter 4 Review	156–57	<ul><li>Terms and Symbols</li><li>Practice</li><li>Cumulative Review</li></ul>		
46	Chapter 4 Test				
47	Review Chapters 1	-4			
48	First Quarter Exam (Chapters 1–4)				

Day	Topic	Pages	Support Materials	Bible Integration
Chapter 5	: Preparing for Proc	ofs		
49	5.1 Introduction to Reasoning	158–66		God created man a rational being
50	5.2 Statements and Quantifiers	166–68		
51	5.3 Truth Values and Connectives	169–73	<ul><li>Quiz 1 (5.1–5.2)</li><li>Calculator Skills</li></ul>	God is the God of truth
52	Geometry Through History— Boethius	174–75	• Quiz 2 (5.3)	Arianism and the deity of Christ
53	5.4 Conditional Statements	176–81	Truth Tables in Detail	
54	5.5 Proofs	182–88	<ul> <li>Quiz 3 (5.4)</li> <li>Math History: Aristotle</li> <li>Fallacies in Brief</li> <li>Paradox in Principle</li> </ul>	<ul> <li>test all things against Scripture</li> <li>beware of fallacies</li> </ul>
55	5.6 Deductive Proof	189–95	Quiz 4 (5.5)     Practice	<ul> <li>Paul used deductive reasoning</li> <li>Christ provided a remedy for man's sin</li> </ul>
56	Analytic Geometry— Graphing Lines	196	• Quiz 5 (5.6)	
57	5.7 Construction and Proofs	197–201	<ul> <li>Construction Skills</li> <li>Geometer's Sketchpad Investigations</li> </ul>	
58	Geometry and Scripture— Statements	202–3	<ul><li>Quiz 6 (5.7)</li><li>Bible: Salvation</li></ul>	<ul> <li>proofs in the Bible</li> <li>salvation is God's free gift through faith in Christ alone*</li> </ul>
59	Chapter 5 Review	204–5	<ul><li>Terms and Symbols</li><li>Cumulative Review</li></ul>	
60	Chapter 5 Test			

Chapter 6	: Congruence			
61	6.1 Congruent Segments	206–14		<ul> <li>perseverance</li> <li>honoring and glorifying the Lord in all that we do*</li> </ul>
62	6.2 Congruent Angles	214–20		
63	6.1–6.2 Review		<ul> <li>Quiz 1 (6.1–6.2)</li> <li>Bible: The Bible—The Test for Truth</li> </ul>	<ul> <li>mathematical reasoning and biblical truth*</li> </ul>
64	6.3 Congruent Polygons and Circles	220–24	Conjectures in Brief	
65	6.4 Parallel Lines and Transversals	225–31	<ul> <li>Quiz 2 (6.3)</li> <li>Switching Circuits</li> </ul>	
66	Analytic Geometry— Equations of Lines	232	• Quiz 3 (6.4)	

Day	Торіс	Pages	Support Materials	Bible Integration
67	6.5 Angles of Polygons	233–37	<ul><li>Practice</li><li>Calculator Skills</li></ul>	
68	Geometry Around Us—Sports	238–39	• Quiz 4 (6.5)	
69	6.6 Congruence Postulates	240–44	<ul> <li>Auxiliary Figures in Detail</li> </ul>	
70	6.7 Congruent Triangles	245–50	<ul><li>Quiz 5 (6.6)</li><li>Math History: Pappus</li></ul>	pressing toward the mark
71	6.8 Conditions for Congruent Triangles	251–55	<ul> <li>Geometer's Sketchpad Investigations</li> <li>Constructions Skills</li> </ul>	
72	Geometry and Scripture— Reasoning	256–57	• Quiz 6 (6.7–6.8)	reasoning and logic in the Bible
73	Chapter 6 Review	258–59	<ul><li>Chapter 6 Review</li><li>Cumulative Review</li></ul>	
74	Chapter 6 Test			

Chapter 7	: Triangles and Qua	drilaterals		
75	7.1 Right Triangles	260–66	Triangle Congruence     Criteria	<ul> <li>patterning our lives after Christ</li> </ul>
76	7.1 Review		• Quiz 1 (7.1)	
77	7.2 Perpendiculars and Bisectors	267–72	<ul> <li>Geometer's Sketchpad Investigations</li> <li>Practice</li> </ul>	
78	7.3 Exterior Angles and Inequalities	273–78	Calculator Skills	God looks on the heart
79	Geometry Around Us—Carpentry	279–80	• Quiz 2 (7.2–7.3)	
80	7.4 Inequalities	281–86	Euler Line in Brief	
81	7.5 Triangle Inequality	287–90	Math History: Johann     Lambert	
82	7.4–7.5 Review		• Quiz 3 (7.4–7.5)	
83	7.6 Parallelograms	291–95	<ul> <li>Parallelograms in Detail</li> <li>Historic Quadrilaterals</li> </ul>	
84	Analytic Geometry— Midpoints	296–97		
85	7.7 Polygon Constructions	298–303	Construction Skills	<ul> <li>Scripture stresses understanding</li> </ul>
86	Geometry and Scripture— Dimensions	304–5	<ul> <li>Quiz 4 (7.6–7.7)</li> <li>Bible: Angels— Messengers of Truth</li> </ul>	<ul> <li>laws established in God's creation</li> <li>angels are messengers of truth and servants of God*</li> </ul>

Day	Topic	Pages	Support Materials	Bible Integration	
87	Chapter 7	306–7	Terms and Symbols		
	Review		Cumulative Review		
88	Chapter 7 Test				
89	Review Chapters 5–7				
90	Second Quarter Exam (Chapters 5–7)				

Chapter 8	: Area			
91	8.1 Meaning of Area	308–15	<ul> <li>Geometer's Sketchpad Investigations</li> <li>Perimeter, Area, Volume</li> </ul>	<ul> <li>God provides a glimpse of heaven to believers</li> </ul>
92	8.2 Other Polygons	316–23	<ul><li>Perimeter and Area</li><li>Area</li></ul>	
93	8.3 Pythagorean Theorem	323–27	<ul><li> Quiz 1 (8.1–8.2)</li><li> Pythagorean Theorem</li></ul>	
94	Geometry Through History—Heron Analytic Geometry— Heron's Formula	328–31		
95	8.4 Regular Polygons	332–37	Sin—The Corruption     of Truth	<ul> <li>the effect of sin on math*</li> </ul>
96	8.3–8.4 Review		• Quiz 2 (8.3–8.4)	
97	8.5 Circles	338–40	<ul><li>Construction Skills</li><li>Area</li></ul>	
98	8.6 Surface Areas of Prisms and Cylinders	341–47	<ul> <li>Quiz 3 (8.5)</li> <li>Math History: Plato</li> <li>Surface Area</li> </ul>	Christianity is an inner change of the heart
99	8.7 Surface Areas of Pyramids and Cones	348–54	<ul><li>Surface Area</li><li>Calculator Skills</li></ul>	
100	8.8 Surface Areas of Polyhedra and Spheres	355–59	<ul><li>Surface Area</li><li>Platonic Solids</li><li>Practice</li></ul>	
101	8.6–8.8 Review		• Quiz 4 (8.6–8.8)	
102	Geometry and Scripture—Area	360–61		area measurements in the Bible
103	Chapter 8 Review	362–63	<ul><li>Terms and Symbols</li><li>Cumulative Review</li></ul>	
104	Chapter 8 Test			

Day	Topic	Pages	Support Materials	Bible Integration
Chapter 9	: Circles			
105	9.1 Circles and Chords	364–71	<ul> <li>Value of π</li> <li>Circles</li> </ul>	<ul> <li>God's creation illustrates His wondrous ways</li> <li>eternal life is certain for the believer</li> </ul>
106	Analytic Geometry— Graphing Circles	372–73	The Holy Spirit—The Guide to Truth	<ul> <li>the Holy Spirit is the Christian's guide to truth*</li> </ul>
107	9.2 Tangents	374–80	<ul><li>Indirect Proofs</li><li>Detectives in Brief</li></ul>	
108	9.3 Arcs	381–87	• Quiz 1 (9.1–9.2)	
109	Geometry Around Us— Transportation	388–89	• Quiz 2 (9.3)	
110	9.4 Inscribed Angles	390–93	Math History: Ptolemy	
111	9.5 Lines and Circles	394–98	• Quiz 3 (9.4)	
112	9.5 Review		<ul> <li>Quiz 4 (9.5)</li> <li>Calculator Skills</li> </ul>	
113	9.6 Sectors and Segments	399–404	Practice	
114	9.7 Circle Constructions	405–9	Construction Skills	
115	Geometry and Scripture—Pi	410–11	<ul> <li>Quiz 5 (9.6–9.7)</li> <li>Geometer's Sketchpad Investigations</li> </ul>	circumferences in the Bible
116	Chapter 9 Review	412–13	<ul><li>Terms and Symbols</li><li>Cumulative Review</li></ul>	
117	Chapter 9 Test			

Chapter 10: Space					
118	10.1 Perspective in Space	414–19	Perspective in Brief		
119	10.2 Separation in Space	420–23	Atonement—The Restoration of Truth	<ul> <li>Christ's substitutionary atonement*</li> </ul>	
120	10.3 Perpendiculars in Space	423–27	• Quiz 1 (10.1–10.2)		
121	10.4 Parallels in Space	428–31	<ul><li> Proofs in Detail</li><li> Practice</li></ul>		
122	Analytic Geometry— Slopes of Parallel Lines	432–33	• Quiz 2 (10.3–10.4)		
123	10.5 Polyhedra	434–38	<ul> <li>Construction Skills</li> <li>Three–D Figures</li> <li>Solids</li> </ul>		
124	10.6 Spheres	439–45		trusting in God, not riches	

Day	Topic	Pages	Support Materials	Bible Integration
125	Geometry Through History— Riemann	446–47	<ul> <li>Quiz 3 (10.5–10.6)</li> <li>Geometer's Sketchpad Investigations</li> </ul>	Christian testimonial
126	10.7 Latitude and Longitude	448–51	Calculator Skills	
127	10.8 Spherical Geometry	451–53	<ul> <li>Math History: Lobachevsky</li> <li>Hyperbolic Geometry</li> </ul>	a worldview founded in God as revealed in His Word
128	Geometry and Scripture—The Universe	454–55	• Quiz 4 (10.7–10.8)	a Euclidean universe?
129	Chapter 10 Review	456–57	<ul><li>Terms and Symbols</li><li>Cumulative Review</li></ul>	
130	Chapter 10 Test			

Chapter 1	1: Volume			
131	11.1 Meaning of Volume	458–64		<ul> <li>bearing mature fruit in the Christian life</li> <li>demonstrating the love of Christ</li> </ul>
132	11.2 Prisms	464–70	Math History: Cavalieri	
133	11.3 Cylinders	471–74	<ul> <li>Quiz 1 (11.1–11.2)</li> <li>Volume Formulas</li> </ul>	
134	11.4 Pyramids and Cones	475–79	<ul> <li>Quiz 2 (11.3)</li> <li>Volume in Brief</li> <li>Other Volumes</li> </ul>	
135	Analytic Geometry— Conic Sections	480–81	<ul> <li>Quiz 3 (11.4)</li> <li>Solids</li> </ul>	
136	11.5 Polyhedra and Spheres	482–87	<ul><li>Other Volumes</li><li>Polyhedra</li><li>Sphere Portions</li></ul>	
137	Geometry Around Us—Engineering	488–89	<ul> <li>Planar Projections</li> <li>Calculator Skills</li> </ul>	
138	11.6 Constructions	490–93	<ul> <li>Geometer's Sketchpad Investigations</li> <li>Construction Skills</li> </ul>	
139	Geometry and Scripture— Volume	494–95	<ul> <li>Quiz 4 (11.5–11.6)</li> <li>Practice</li> <li>Hell—The Rejection of Truth</li> </ul>	<ul> <li>honesty in business involving volume measurement</li> <li>hell is the ultimate result of rejecting Christ*</li> </ul>
140	Chapter 11 Review	496–97	<ul> <li>Solids</li> <li>Terms and Symbols</li> <li>Cumulative Review</li> </ul>	
141	Chapter 11 Test			
142	Review Chapters 8–11			
143	Third Quarter Exam	n (Chapters 8-	-11)	

Day	Торіс	Pages	Support Materials	Bible Integration	
Chapter 12: Transformations and Symmetry					
144	12.1 Transformations	498–504	Similar, Congruent, Symmetrical	<ul> <li>God created us in His own image</li> <li>Paul's transformation</li> </ul>	
145	12.2 Translations and Rotations	504–8	Math History: Desargues		
146	Analytic Geometry— Translating Conic Sections	509–10	• Quiz 1 (12.1–12.2)		
147	12.3 Dilations	511–15	<ul> <li>Topological Transformations</li> <li>Similar, Congruent, Symmetrical</li> </ul>		
148	12.4 Invariance Under Transformations	515–19	<ul> <li>Construction Skills</li> <li>Similar, Congruent, Symmetrical</li> </ul>	God is constant and unchanging	
149	Geometry Through History—Hilbert	520–21	<ul> <li>Quiz 2 (12.3–12.4)</li> <li>The Church—The Steward of Truth</li> </ul>	<ul> <li>the church (as it is guided, empowered, and built by Christ) is the steward of truth*</li> </ul>	
150	12.5 Applications of Isometries	522–25	<ul> <li>Geometer's Sketchpad Investigations</li> <li>Isometries in Detail</li> </ul>		
151	12.6 Symmetry	525–27	<ul> <li>Symmetry in Brief</li> <li>Similar, Congruent, Symmetrical</li> </ul>		
152	Geometry and Scripture— Transformation	528–29	<ul><li>Calculator Skills</li><li>Quiz 3 (12.5–12.6)</li></ul>	transformation	
153	Chapter 12 Review	530–33	<ul><li>Practice</li><li>Terms and Symbols</li><li>Cumulative Review</li></ul>		
154	Chapter 12 Test				

Chapter 13: Similarity					
155	13.1 Similar Figures	534–39	<ul> <li>Transformations</li> <li>Similar, Congruent, Symmetrical</li> </ul>	man is "fearfully and wonderfully made"	
156	Geometry Around Us—Art	540–41	Paper Folding		
157	13.2 Similar Triangles	542–47	Man—The Battleground of Truth	<ul> <li>new nature versus old nature*</li> </ul>	
158	13.3 Similar Right Triangles	548–53	<ul> <li>Quiz 1 (13.1–13.2)</li> <li>Similar Right Triangles</li> </ul>		
159	Analytic Geometry— Slopes of Perpendicular Lines	554–55	<ul> <li>Quiz 2 (13.3)</li> <li>Math History: Klein</li> </ul>		
160	13.4 Similar Triangles and Proportions	556–59			
161	13.4 Review		• Quiz 3 (13.4)		

Day	Topic	Pages	Support Materials	Bible Integration
162	13.5 Similar Triangles and Problem Solving	560–65	Geometer's     Sketchpad     Investigations	<ul> <li>applying biblical principles to everyday problems</li> </ul>
163	13.6 Circles and Proportions	566–70		
164	13.7 The Golden Ratio	571–75	<ul> <li>Calculator Skills</li> <li>Construction Skills</li> <li>Golden Ratio in Detail</li> </ul>	
165	Geometry and Scripture—Art	576–77	• Quiz 4 (13.5–13.7)	created in His image
166	Chapter 13 Review	578–79	<ul> <li>Practice</li> <li>Terms and Symbols</li> <li>Cumulative Review</li> </ul>	
167	Chapter 13 Test			

Chapter 1	4: Trigonometry				
168	14.1 Trigonometric Ratios	580–87	<ul> <li>Geometer's Sketchpad Investigations</li> <li>Math History: Regiomontanus</li> <li>Unit Circle</li> </ul>	<ul> <li>evaluating your spiritual condition with biblical truth</li> </ul>	
169	14.2 Special Triangles	588–91	• Quiz 1 (14.1)	God gives wisdom	
170	Geometry Around Us—Surveying	592–93	Cevians in Principle		
171	14.3 Solving Right Triangles	594–98	<ul><li>Construction Skills</li><li>Golden Rectangle</li></ul>		
172	Analytic Geometry— Measurement	599–600	• Quiz 2 (14.2–14.3)		
173	14.4 Trigonometric Identities	601–4	<ul><li>Unit Circle</li><li>Calculator Skills</li></ul>		
174	14.5 Applications of Trigonometry	604–8	<ul><li>Quiz 3 (14.3–14.4)</li><li>Ellipses in Brief</li></ul>	<ul> <li>applying biblical principles to your life</li> </ul>	
175	14.6 Trigonometry and Regular Polygons	609–11	God's Work	natural revelation, providence, and special revelation from God*	
176	Geometry and Scripture—Angle Measure	612–13	• Quiz 4 (14.5–14.6)	angle measurement in the Bible	
177	Chapter 14 Review	614–15	<ul><li>Practice</li><li>Terms and Symbols</li><li>Cumulative Review</li></ul>		
178	Chapter 14 Test				
179	Review Chapters 12–14				
180	Fourth Quarter Exa	Fourth Quarter Exam (Chapters 12–14)			