

# CURRICULUM GUIDE

## Course Outline: 9<sup>TH</sup> Grade Algebra I

Unit Content and Objectives	Time	Methods, Activities, and Evaluation	Books and Materials	Biblical Integration	ESLR#
<p>Chapter 1...</p> <p>Section 1.7 – Exponents; Section 1.9 – Greatest Common Factor (GCF), and Least Common Multiple (LCM); Section 3.3 – Negative Exponents</p> <p><u>Objective:</u> to define exponent, base &amp; exponential form; use properties of exponents including zero &amp; negative exponent properties; define GCF/LCM; find GCF/LCM of a set of numbers</p>	1 week	<p>Lectures</p> <p>Homework</p> <p>Quiz</p> <p>Test</p>	<p>Textbook</p> <p>Whiteboards</p>		<p>1,3</p> <p>2,3</p> <p>2</p> <p>1,2,3</p>
<p>Chapter 2...</p> <p>Section 2.1 – Kinds of Numbers; Number System; Section 2.4 – Order of Operations; Section 2.6 – Square Roots &amp; Radicals; Probability &amp; Statistics using Mean, Mode, Median and Range</p> <p><u>Objective:</u> identify different number systems in Algebra; classify numbers; convert decimal/fraction forms; evaluate a numerical expression using the order of operations; identify perfect squares/sq. roots of numbers; find square, cube &amp; fourth root of numbers; define mean, mode, median and range; calculate each for a given set of data</p>	2 weeks	<p>Lectures</p> <p>Homework</p> <p>Quiz</p> <p>Test</p>	<p>Textbook; Handouts</p> <p>Whiteboards</p>		<p>1,3</p> <p>2,3</p> <p>2</p> <p>2,3</p>
<p>Chapter 3...</p> <p>Section 3.1 – Variables; Section 3.2 – Algebraic Expressions; Review 3.3 again; Section 3.4 – Evaluating Algebraic Expressions; Section 3.5 – Combining Like Terms; Section 3.6 – Removing Parenthesis; Distributive Property; Section 3.7 – Using Formulas; Section 3.8 – Properties of Equality</p> <p><u>Objective:</u> evaluate expressions containing variables; simplify exponential expressions &amp; use negative exponents; use formulas; combine like terms</p>	3 weeks	<p>Lectures</p> <p>Homework</p> <p>Algebra &amp; Scripture</p> <p>Quizzes</p> <p>Test</p>	<p>Textbook</p> <p>Whiteboards</p> <p>Bible</p>	<p>Life on earth has many variables; God is our constant. Words converted into math problems; God’s word (Bible) is interpreted for our benefit today. James 1:17; Hebrews 13:8; Malachi 3:6</p>	<p>1,2,3</p> <p>2</p> <p>1,2,3,5</p> <p>2,4</p> <p>1,2,3,4</p>

## Course Outline: 9<sup>TH</sup> Grade Algebra I

Unit Content and Objectives	Time	Methods, Activities, and Evaluation	Books and Materials	Biblical Integration	ESLR#
<p>Chapter 4...</p> <p>Section 4.1 – Using Properties of Equality; Section 4.2 – How to Attack Word Problems; Section 4.3 – Equations in Form <math>ax + b = c</math>; Section 4.4 – More work with Equations; Section 4.5 – Equations in Form <math>ax + b = cx + d</math>; Section 4.6 – Absolute Value Equations; Section 4.7 – Clearing Equations of Fractions</p> <p><u>Objective</u>: apply properties of equality to solve simple equations; use the four-step procedure to solve word problems; solve equations in the form <math>ax + b = c</math>; solve equations containing like terms &amp; parentheses; convert repeating decimals to fractions by solving equations; solve equations with variables on both sides of the equal sign; solve equations containing absolute values; to clear an equation of fractions and solve</p>	3 weeks	<p>Lectures Homework</p> <p>Algebra &amp; Scripture</p> <p>Quizzes</p> <p>Test</p>	<p>Textbook Whiteboards</p> <p>Bible</p>	<p>Christians must always be prepared against the craftiness of the devil. <i>Ephesians 6:10-18</i> <i>James 2:1-10</i> Equations are the foundation of Math; God’s word is our foundation. <i>Matthew 7: 24-27</i></p>	2,3 3,4  1,2,3,6  2,3,4  2,3,4
<p>Chapter 5...</p> <p>Section 5.1 – Inequalities; Section 5.2 – Properties of Inequalities (Addition/Subtraction); Section 5.3 – Properties of Inequalities (Multiplication/Division); Section 5.4 – Solving Inequalities; Section 5.5 – Conjunctions; Section 5.6 – Disjunctions; Section 5.7 – Absolute Value Inequalities; Section 5.8 – Word Problems w/Inequalities</p> <p><u>Objective</u>: graph inequalities on a number line; solve inequalities; describe the properties of inequalities; solve inequality conjunctions/disjunctions; solve absolute value inequalities; set up and solve inequalities from word problems</p>	3 weeks	<p>Lectures Homework</p> <p>Algebra &amp; Scripture</p> <p>Quizzes</p> <p>Test</p>	<p>Textbook Whiteboards</p> <p>Bible</p>	<p>Biblical Inequalities: God vs. Satan <i>Isaiah 14:14;</i> <i>Genesis 3:5;</i> <i>Deuteronomy 4:39</i></p>	2,3 2,3,4  1,3,5  2,3,4  2,3,4

## Course Outline: 9<sup>TH</sup> Grade Algebra I

Unit Content and Objectives	Time	Methods, Activities, and Evaluation	Books and Materials	Biblical Integration	ESLR#
<p>Chapter 6...</p> <p>Section 6.1 – Coordinates of a Plane; Section 6.2 – Relations and Functions; Section 6.3 – Graphs of Relations/Functions; Section 6.4 – Graphs &amp; Intercepts; Section 6.5 – Slopes of Lines; Section 6.7 – Point/Slope Form <math>y = mx + b</math>; Section 6.8 – Finding the Equation of a Line w/ 2 points; Section 6.9 – Direct Variation; Section 6.10 – Graphing Linear Inequalities</p> <p><u>Objective:</u> give examples of relations and functions in set form, table form, or circle mapping; define and calculate the slope of a line; graph linear equations and linear inequalities; write equations of lines in standard form or slope-intercept form, given certain information; solve direct variation problems</p>	3.5 weeks	<p>Lectures Homework</p> <p>Algebra &amp; Scripture</p> <p>Quizzes</p> <p>Test</p>	<p>Textbook Whiteboards</p> <p>Bible</p>	<p>What is our function and relationship to/with God? <i>Galatians 4:4-7</i></p> <p>Jesus is constant <i>Hebrews 13:8</i></p>	<p>1,2,3 2, 3</p> <p>1,2,3,6</p> <p>2,3,4</p> <p>2,3,4</p>
<p>Chapter 7...</p> <p>Section 7.1 – Solving Systems of Equations by Graphing; Section 7.2 – Solving Systems of Equations Using the Graphing Method; Section 7.3 – Solving Simple Systems of Equations by Substitution; Section 7.4 - Solving Systems by Substitution Method; Section 7.5 – Solving Simple Systems of Equations by Addition; Section 7.6 – Solving Systems by Addition; Section 7.10 – Systems of Inequalities</p> <p><u>Objective:</u> to determine what is meant by a system of equations; solve a system of equations by the graphing method; solve systems of linear equations by graphing; classify the three types of systems of equations; solve a simple system of equations by the substitution method; review the substitution method of solving systems; identify algebraically the type of system being solved.</p>	3 weeks	<p>Lectures Homework</p> <p>Algebra &amp; Scripture</p> <p>Quizzes</p> <p>Test</p>	<p>Textbook Whiteboards</p> <p>Bible</p>	<p>Simultaneous events <i>Matthew 27:35-54</i></p> <p>Our access to God is through Christ. The tearing of the temple veil was simultaneous with Jesus' death. <i>Hebrews 4:15-16</i></p>	<p>1,2,3 2,3</p> <p>1,2,3,4</p> <p>2,3,4</p> <p>2,3,4</p>

## Course Outline: 9<sup>TH</sup> Grade Algebra I

Unit Content and Objectives	Time	Methods, Activities, and Evaluation	Books and Materials	Biblical Integration	ESLR#
<p>Chapter 8...</p> <p>Section 8.1 – Classifying &amp; Evaluating Polynomials; Section 8.2 – Adding Polynomials; Section 8.3 – Subtracting Polynomials; Section 8.4 – Multiplication of Polynomials by a Monomial; Section 8.5 – Multiplying Binomials; Section 8.6 – Multiplying Polynomials; Section 8.7 – Special Products; Section 8.8 – Dividing by a Monomial; Section 8.9 – Dividing Polynomials</p> <p><u>Objective</u>: classify &amp; evaluate any given polynomial; add/subtract polynomials; multiply polynomials of all types; recognize special cases &amp; use shortcuts for multiplying polynomials; divide polynomials</p>	2.5 weeks	<p>Lectures Homework</p> <p>Algebra &amp; Scripture</p> <p>Quizzes</p> <p>Test</p>	<p>Textbook Whiteboards</p> <p>Bible</p>	<p>Biblical principles are transferred into our daily lives; learned basic math skills are transferred into more complex math concepts.</p> <p><i>Psalms 119:9-11</i></p>	<p>1,2,3 2,3,6</p> <p>1,2,3,4</p> <p>2,3,4</p> <p>2,3,4</p>
<p>Chapter 9...</p> <p>Section 9.1 – Factoring Common Monomials; Section 9.2 – Factoring the Difference of Two Squares; Section 9.3 – Factoring Perfect Square Trinomials; Section 9.4 – Factoring Trinomials of the Form <math>x^2 + bx + c</math>; Section 9.5 – Factoring Trinomials of the Form <math>ax^2 + bx + c</math>; Section 9.6 - Factoring Trinomials of the Form <math>ax^2 + bxy + cy^2</math>; Section 9.7 – Factoring Completely</p> <p><u>Objective</u>: factor common monomials from polynomials; factor the difference of two squares; factor perfect trinomials; factor trinomials as a product of two binomials; factor completely a given polynomial over the set of integers</p>	2.5 weeks	<p>Lectures Homework</p> <p>Algebra &amp; Scripture</p> <p>Quizzes</p> <p>Test</p>	<p>Textbook Whiteboards</p> <p>Bible</p>	<p>All who believed were together, and had all things in common.</p> <p><i>Acts 2:44</i></p> <p>Our common salvation...</p> <p><i>Jude 3</i></p>	<p>2,3 2,3,4</p> <p>1,2,3, 4,6</p> <p>2,3,4</p> <p>2,3,4</p>

## Course Outline: 9<sup>TH</sup> Grade Algebra I

Unit Content and Objectives	Time	Methods, Activities, and Evaluation	Books and Materials	Biblical Integration	ESLR#
<p>Chapter 10...</p> <p>Section 10.1 – Expressing Square Roots; Section 10.2 – Simplifying Radicals; Section 10.3 – Multiplying Radicals; Section 10.4 – Dividing Radicals and Rationalizing Denominators; Section 10.5 – Addition/Subtraction of Radicals; Section 10.6 – Pythagorean Theorem; Section 10.7 – The Distance Formula; Section 10.8 – Multiplying Radical Expressions; Section 10.9 – Dividing Radical Expressions; Section 10.10 – Radical Expressions</p> <p><u>Objective:</u> approximate the root of any number using the two nearest integers; convert between radical form &amp; exponential form; simplify any radical; multiply/divide radicals; rationalize the denominator of a fraction; add/subtract radicals; solve problems using the Pythagorean theorem; develop 7 use the distance formula; solve a given radical equation</p>	3 weeks	<p>Lectures Homework</p> <p>Algebra &amp; Scripture</p> <p>Quizzes</p> <p>Test</p>	<p>Textbook Whiteboard</p> <p>Bible</p>	<p>Radicals deal with base numbers and exponents. As Christians, our “base” is God; the exponents are His Power, Mercy, Grace, and Love for us.</p>	<p>2,3,7 2,3,4</p> <p>1,2,3,4</p> <p>2,3,4</p> <p>1,2,3,4</p>
<p>Chapter 11...</p> <p>Section 11.1 – Zero Product Property; Section 11.2 – Solving Quadratic Equations by Factoring</p> <p><u>Objective:</u> to define <i>quadratic equation</i>; state zero product property; solve quadratic equations using the zero product property; solve quadratic equations by factoring; to apply these methods to solve word problems</p>	1 week	<p>Lectures Homework</p> <p>Quiz</p>	<p>Textbook Whiteboards</p>	<p>God’s truth is never complicated. <i>2 Corinthians 11:3</i> Christians are “like terms” – equally yoked. God distributes His love to all of us.</p>	<p>1,2,3 2,3,4</p> <p>2,3,4</p>