

Southwest Christian Algebra I 2015-2016

- I. **Southwest Christian’s mission statement:** To challenge students to grow in knowing, loving, and serving God and others.
- II. **Course Description:** A study of mathematics in which letters and other general symbols are now used to represent numbers and quantities in formulas and equations. Students are challenged to engage the study of mathematics in order to better understand and appreciate the beauty and complexity in God’s creation. Algebra 1 emphasizes the study of polynomials, functions, and probability with real world application.

III. **Carrie Top**

School: (507) 442-4471

carrietop@swmch.org

IV. **Instructional/Assessment Philosophy:**

I have always been amazed at the complexity and the integration of mathematics within itself and our everyday lives. God truly has designed this world in such a way that we get to learn to unfold some of the details. I am excited to be able to share that joy with you and be able to help you learn and be successful throughout the year. In order to fully understand the complexity that math offers, students will be asked to problem-solve, prove, and work through difficult problems on a regular basis.

Through the study of mathematics, students will be aware of order, patterns, and space in the created world. This pursuit will be accomplished by students computing, reasoning, and analyzing numbers, shapes and situations. These activities encourage students to better understand God as the Creator and Sustainer of this orderly world.

V. **Course Standards/Goals**

Skills and Knowledge:

Numbers and Operations: Students will understand and use concepts of numbers and their number system.

- *Understand numbers, ways of representing numbers, relationships among numbers, and number systems.
- *Understand meanings of operations and how they relate to one another.
- *Compute fluently and make reasonable estimates.

Algebra, Functions, and Patterns: Students will use algebraic concepts, functions, patterns, and relationship to solve problems.

- *Understand patterns, relations, and functions.
- *Represent and analyze situations and structures using algebraic symbols.
- *Use mathematical models to represent and understand quantitative relationships.
- *Analyze change in various contexts.

Data Analysis, Statistics, and Probability: Students will use data collection and analysis techniques, statistical methods, and probability to solve problems.

- *Formulate questions that can be addressed with data and collect, organize, and display data to answer them.
- *Select and use appropriate statistical methods to analyze data.
- *Develop and evaluate inferences and predictions that are based on data.
- *Understand and apply basic concepts of probability.
- *Create and use representations to organize, record, and communicate mathematical ideas.
- *Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
- *Use the language of mathematics to express mathematical ideas.

Value: Students will recognize that mathematics is a language and tool provided by God. Students will recognize God's characters of logic and order in our world. Students will see the aesthetics of mathematics as reflecting the mind of God as Creator.

VI. Course Texts, Readings, and Materials

Burger, Edward B., David J. Chard, Earlene J. Hall, Paul A. Kennedy, and Steven J. Leinwand.
Algebra 1. Austin: Holt, Rinehart and Winston, 2007. N. pag. Print.

GOOGLE CLASSROOM ACCESS CODE: **8v5h1p3**

Materials needed each day:

- Text book
- Pencil with eraser
- Pen
- Computer
- Calculator
- Notebook

VII. Assessment: Assessment will be based on homework, tests, quizzes, and projects.

Daily work: Students will have daily homework almost everyday. Students will be required to show work and complete all assigned problems to earn all points. Each day, we will correct the assignment at the beginning of the class. Students may redo the questions that they got wrong for half credit back, but must attempt to correct all missed problems when turning in redone assignments. Late work will be accepted with a point deduction for each day it is late, but will be required to complete each assignment. If late work becomes a recurring theme, then other remediations may occur.

Tests and Quizzes: Tests will be taken at the end of each chapter. Quizzes will be periodically taken throughout each chapter.

It is my belief that learning can occur through mistakes and so retakes will be offered on tests and quizzes. In order to retake the assessment students must correct the mistakes on the given test/quiz, complete two extra problems from each section, and meet with me to go over concepts and schedule a retake within a week that the assessment was handed back.

Projects: Projects will be part of the curriculum throughout the year in various forms. Some projects will be individual whereas others will be group. When working in a group, you will be asked to do a self-reflection and a group-reflection that will factor into your grade.

Challenge Problems: Extra credit is offered through different challenge problems throughout the chapter and will be due at the end of the chapter. Each problem is worth one point and the total will be added at the end of each quarter.

VIII. Policy:

All assignments are designed to show whether students have met the standards for the course. Any unit test, quiz, project, or homework check assessed as “poor quality” will be expected to be REDONE for higher credit.

Be Respectful, Ready, Responsible, and Positive.

Respect God, others, and yourself.

This includes but is not limited to talking while others are talking, no swearing, etc.

Be *ready* to learn. Ask questions.

Students will be in their seat ready for the day by the time the bell rings.

Be *responsible* for your actions in and outside the classroom.

Complete your homework on time.

Set expectations for yourself.

Have a *positive* outlook on every day and even on math.

Encourage your classmates.

Computers (or any device) will be put away or closed when not necessary for the class. Many days, students will be asked to complete a bell ringer on the computer. As soon as the bell ringer is completed, computers must go back in their case. During a time where the student is finished with the assigned task for the class, permission must be granted to use for other classes or reading material (such as a Nook). Failure to follow may result in the device taken just as the school phone policy.

IX. Distribution of Grading Components

Quarter Grade:	Semester Grade:
Homework = 40%	Quarter 1 = 42.5%
Tests/Projects/Quizzes = 60%	Quarter 2 = 42.5%
	Exam = 15%

X. Grading Scale

A	100-95	C	79-77
A-	94-92	C-	76-74
B+	91-89	D+	73-71
B	88-86	D	70-68
B-	85-83	D-	67-65
C+	82-80	F	64 or below

XI. Course Schedule/Topics Covered (tentative):

Foundations for Algebra

Equations

Inequalities

Functions

Linear Functions

Systems of Equations and Inequalities

Exponents and Polynomials

Factoring Polynomials

Quadratic Functions and Equations

Data Analysis and Probability

Exponential and Radical Functions

Rational Functions and Equations