

**MODESTO CITY SCHOOLS  
COURSE OUTLINE**

**COURSE TITLE:** ..... Algebra Readiness  
**COURSE NUMBER:** .....  
**RECOMMENDED GRADE LEVEL:** ..... 8 – 10  
**ABILITY LEVEL:** ..... Remediation  
**DURATION:** ..... 1 year  
**CREDIT:** ..... 5 per semester  
**MEETS GRADUATION REQUIREMENTS:** ..... Mathematics  
**REQUIRED FOR GRADUATION:** ..... no  
**CBEDS CODE:** .....  
**MEETS UC AND CSU ENTRANCE REQUIREMENTS:** ..... No  
**REPLACES:** ..... N/A

**Course Description:**

Algebra Readiness is a course designed to give teachers the flexibility and time to rebuild foundational skills and concepts that may be missing from earlier grades. Teachers are given the freedom to address student needs and fill in gaps in the child’s mathematical knowledge. While the course outline lists chapters in sequential order, concepts can be addressed to meet individual needs. Topics to be covered include whole numbers, variable expressions, solving equations, decimal operations, fractions, exponents, fraction operations, ratios, percents, integer operations, inequalities, two-step equations and square roots.

**Recommended Prerequisites:**

Completion of Math 7 at a level not consistent with mastery and teacher recommendation.

\*Course work of transfer students will be evaluated for equivalency.

**Date Matched Against State Framework:** ..... May 2009

**Board Approved:** ..... Pending

**REQUIRED TEXTBOOK:**

California Algebra Readiness, Burger, C.H.K. (2008), Holt.

Teacher created supplements.

# **Algebra Readiness Course Outline**

## **1<sup>st</sup> Semester units of Instruction:**

### **VOLUME 1**

#### **Chapter 0 – Whole Numbers**

- 0-1 Whole Number Place Value
- 0-2 Properties of Whole Numbers
- 0-3 Estimate Whole Numbers
- 0-4 Add and Subtract Whole Numbers
- 0-5 Multiply and Subtract Whole Numbers
- 0-6 Solve Problems with Whole Numbers

#### **Chapter 1 – Variables and Expressions**

- 1-1 Variables and Expressions
- 1-2 Write an Expression
- 1-3 Order of Operations

#### **Chapter 2 – Solve Equations**

- LAB Model Equations
- 2-1 Solve Addition Equations
- 2-2 Solve Subtraction Equations
- 2-3 Solve Multiplication Equations
- 2-4 Solve Division Equations

#### **Chapter 3 – Add and Subtract Decimals**

- LAB 3-A Model Decimals
- 3-1 Decimal Place Value
- 3-2 Compare and Order Decimals
- 3-3 Estimate Decimals
- LAB 3-B Explore Decimal Addition and Subtraction
- 3-4 Add and Subtract Decimals Using a Place Value Chart
- 3-5 Add and Subtract Decimals

#### **Chapter 4 – Multiply and Divide Decimals**

- LAB 4 Explore Decimal Multiplication and Division
- 4-1 Multiply Decimals
- 4-2 Divide Decimals by Whole Numbers
- 4-3 Divide by Decimals
- 4-4 Evaluate and Write Decimal Expressions
- 4-5 Solve Decimal Equations
- 4-6 Problem Solving with Decimals

## **VOLUME 2**

### **Chapter 5 – Factors and Powers**

- 5-1 Whole Number Powers
- 5-2 Divisibility
- 5-3 Prime Factorization Using Exponents
- 5-4 LCM and GCD

### **Chapter 6 – Understanding Fractions**

- LAB 6 Model Fractions as Part of Wholes and Sets
- 6-1 Find Equivalent Fractions
- 6-2 Compare and Order Fractions
- 6-3 Understanding Mixed Numbers
- 6-4 Convert Decimals to Fractions
- 6-5 Convert Fractions to Decimals

### **Chapter 7 – Add and Subtract fractions**

- 7-1 Add and Subtract Fractions with Like Denominators
- 7-2 Estimate Fraction Sums and Differences
- LAB 7 Model Fraction Addition and Subtraction
- 7-3 Add and Subtract Fractions with unlike Denominators

### **Chapter 8 – Add and Subtract Mixed Numbers**

- 8-1 Add and Subtract Mixed Numbers
- LAB 8 Model Subtraction with Renaming
- 8-2 Regroup to Subtract Mixed Numbers
- 8-3 Solve Problems with Adding and Subtracting Mixed Numbers

### **Chapter 9 – Multiply and Divide Mixed Numbers and Fractions**

- 9-1 Multiply Fractions by Whole Numbers
- LAB 9-A Model Fraction Multiplication
- 9-2 Multiply Fractions
- 9-3 Multiply Mixed Numbers
- LAB 9-B Model Fraction Division
- 9-4 Divide Fractions and Mixed Numbers
- 9-5 Solve Equations with Fractions
- 9-6 Solve Problems with Multiplying and Dividing Fractions

## **2<sup>nd</sup> Semester units of Instruction:**

### **VOLUME 3**

#### **Chapter 10 – Ratio, Rate and Proportion**

- 10-1 Ratios and Rate
- LAB 10 Cross Product
- 10-2 Proportions
- 10-3 Solve Problems using Proportions
- 10-4 Similar Figures

#### **Chapter 11 – Applications with Proportions**

- 11-1 Indirect Measurement
- 11-2 Scale Drawings and Maps
- 11-3 Solve Multistep Problems Involving Proportions
- 11-4 Direct Variation

#### **Chapter 12 – Understanding Percents**

- 12-1 Meaning of Percent
- 12-2 Percents, Decimals, and Fractions
- 12-3 Estimate with Percents

#### **Chapter 13 – Using Percents**

- 13-1 Find the Percent of a Number
- 13-2 Percent Increase and Decrease
- 13-3 Solving Discount Problems
- 13-4 Applications of Percent

#### **Chapter 14 - Add and Subtract Integers**

- 14-1 Understanding Integers
- 14-2 Compare and Order Integers
- LAB 14-A Model Integer Addition
- 14-3 Add Integers Using a Number Line
- 14-4 Add Integers Using Absolute Value
- LAB 14-B Model Integer Subtraction
- 14-5 Subtract Integers Using a Number Line
- 14-6 Subtract Integers by Adding the Opposites

#### **Chapter 15 – Multiply and Divide Integers**

- 15-1 Multiply Integers
- 15-2 Divide Integers
- 15-3 Evaluate and Simplify Integer Expressions
- 15-4 Solve Integer Equations
- 15-5 Solve Problems with Integers

## **VOLUME 4**

### **Chapter 16 – Solve Inequalities**

- 16-1 Solve and Graph Inequalities
- 16-2 Write Inequalities
- 16-3 Compound Inequalities

### **Chapter 17 – Two – Step Equations**

- LAB 17 Solving Two-Step Equations
- 17-1 Solve Two-Step Equations
- 17-2 Solve Multi-Step Equations
- 17-3 Solve Two-Step Inequalities

### **Chapter 18 – Functions**

- 18-1 Understanding Functions
- 18-2 Understanding the Coordinate Plane
- 18-3 Graph Functions
- 18-4 Understand Slope
- 18-5 Applications of Slope
- 18-6 Write Linear Equations

### **Chapter 19 – Square Roots and the Pythagorean Theorem**

- 19-1 Understand Square Roots
- 19-2 Estimate Square Roots
- 19-3 Real Numbers
- LAB 19 Verifying the Pythagorean Theorem
- 19-4 Understand the Pythagorean Theorem

### **Chapter 20 – Exponents**

- 20-1 Negative Exponents
- 20-2 Properties of Exponents
- 20-3 Simplify Expressions Involving Exponents

### **Chapter 21 – Fundamentals of Algebra**

- 21-1 Understand Opposites and Reciprocals
- 21-2 Understand Taking a Square Root and Fractional Exponents
- 21-3 Use Rules of Exponents
- 21-4 Simplify Expressions
- 21-5 Solve Multi-Step Problems

# Nine Topics for the Algebra Readiness Program

Referenced Standards from  
Foundational Skills and Concepts

**16** Targeted Standards  
for Algebra Readiness

**Topic 1 Whole Numbers**

Grade 3—NS: 1.3, 1.5

**Topic 2 Operations on Whole Numbers**

Grade 2—AF: 1.1

Grade 3—AF: 1.5

Grade 4—NS: 3.1, 3.2

Grade 5—AF: 1.3

**Topic 3 Rational Numbers**

Grade 5—NS: 1.4

Grade 6—NS: 1.1

**Topic 4 Operations on Rational Numbers**

Grade 6—NS: 1.4, 2.0, 2.1, 2.2

**Topic 5 Symbolic Notation**

Grade 4—AF: 1.2, 1.3

Grade 5—AF: 1.0

Grade 6—AF: 1.0, 1.1

**Topic 6 Equations and Functions**

Grade 4—AF: 1.5, 2.0, 2.1, 2.2

**Topic 7 The Coordinate Plane**

Grade 4—MG: 2.0, 2.1, 2.2, 2.3

Grade 5—AF: 1.4

**Grade 7**

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**Topic 4 Operations on Rational Numbers**

NS: 1.2, 1.3, 1.5, 2.1

AF: 2.1

**Topic 6 Equations and Functions**

AF: 1.1, 1.3, 4.1, 4.2

**Topic 7 The Coordinate Plane**

MG: 3.3

**Topic 8 Graphing Proportional Relationships**

AF: 3.3, 3.4

MG: 1.3

**Algebra I**

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**Topic 9 Algebra** (Introductory Examples)

Algebra I: 2.0, 4.0, 5.0