Developmental Algebra

COURSE DESCRIPTION:. This is the first course in a two-year algebra sequence that concludes with Continuing Algebra .In this course, students begin to explore the tools and principles of algebra. Students learn to identify the structure and properties of the real number system; complete operations with integers and other rational numbers; work with square roots and irrational numbers; graph linear equations; solve linear equations and inequalities in one variable; and solve systems of linear equations. Sophisticated virtual manipulatives and online graphing tools help students visualize algebraic relationships.

Developmental Algebra covers fewer topics than a one-year algebra course, providing students with more time to learn and practice key concepts and skills. After completing Developmental Algebra, students will be prepared to take Continuing Algebra.

PREREQUISITES: Pre-Algebra (or equivalent)

COURSE LENGTH: Two Semesters

REQUIRED TEXT: Algebra I: Reference Guide and Problem Sets

MATERIALS LIST: None

COURSE OUTLINE:

SEMESTER 1
Unit 1: Algebra Basics, Part 1
- Semester Introduction
- Foundations
- Foundations Wrap-Up
- Expressions
- Expressions Wrap-Up
- Variables
- Variables Wrap-Up
- Translating Words into Variable Expressions
- Translating Words into Variable Expressions Wrap-Up

Unit 2: Algebra Basics, Part 2

- Foundations
- Foundations Wrap-Up
- Equations
- Equations Wrap-Up
- Translating Words into Equations
- Translating Words into Equations Wrap-Up
- Replacement Sets
- Replacement Sets Wrap-Up
- Problem Solving
- Problem Solving Wrap-Up
- Unit Review
- Unit Test

Unit 3: Properties of Real Numbers, Part 1

- Foundations
- Foundations Wrap-Up
- Number Lines
- Number Lines Wrap-Up
- Sets
- Sets Wrap-Up
- Comparing Expressions
- Comparing Expressions Wrap-Up
- Unit Review
- Unit Test

Unit 4: Properties of Real Numbers, Part 2

- Foundations
- Foundations Wrap-Up
- Number Properties
- Number Properties Wrap-Up
- Distributive Property
- Distributive Property Wrap-Up

- Algebraic Proof
- Algebraic Proof Wrap-Up
- Opposites and Absolute Value
- Opposites and Absolute Value Wrap-Up
- Unit Review
- Unit Test

Unit 5: Operations with Real Numbers
- Foundations
- Foundations Wrap-Up
- Addition 1
- Addition 2
- Addition Wrap-Up
- Subtraction
- Subtraction Wrap-Up
- Multiplication
- Multiplication Wrap-Up
- Reciprocals and Division
- Reciprocals and Division Wrap-Up
- Unit Review
- Unit Test

Unit 6: Solving Equations
- Foundations
- Foundations Wrap-Up
- Addition and Subtraction Equations
- Addition and Subtraction Equations Wrap-Up
- Multiplication and Division Equations 1
- Multiplication and Division Equations 2
- Multiplication and Division Equations Wrap-Up
- Multiple Transformations
- Multiple Transformations Wrap-Up
- Variables on Both Sides of an Equation
- Variables on Both Sides of an Equation Wrap-Up

- Transforming Formulas
- Transforming Formulas Wrap-Up
- Unit Review
- Unit Test

Unit 7: Semester Review and Test
- Semester Review
- Semester Test

SEMESTER 2

Unit 1: Solving Inequalities
- Semester Introduction
- Foundations Wrap-Up
- Inequalities
- Inequalities Wrap-Up
- Solving Inequalities
- Solving Inequalities Wrap-Up
- Combined Inequalities
- Combined Inequalities Wrap-Up
- Absolute Value Equations and Inequalities
- Absolute Value Equations and Inequalities Wrap-Up
- Applications: Inequalities
- Applications: Inequalities Wrap-Up
- Unit Review
- Unit Test

Unit 2: Applying Fractions
- Foundations
- Foundations Wrap-Up
- Ratios 1
- Ratios 2
- Ratios Wrap-Up
- Proportions
- Proportions Wrap-Up

- Percents 1
- Percents 2
- Percents Wrap-Up
- Applications: Percents
- Applications: Percents Wrap-Up
- Unit Review
- Unit Test

Unit 3: Linear Equations and Inequalities, Part 1
- Foundations
- Foundations Wrap-Up
- Graphs
- Graphs Wrap-Up
- Equations in Two Variables
- Equations in Two Variables Wrap-Up
- Lines and Intercepts
- Lines and Intercepts Wrap-Up
- Slope
- Slope Wrap-Up
- Unit Review
- Unit Test

Unit 4: Linear Equations and Inequalities, Part 2
- Foundations
- Foundations Wrap-Up
- Slope-Intercept Form
- Slope-Intercept Form Wrap-Up
- Point-Slope Form
- Point-Slope Form Wrap-Up
- Parallel and Perpendicular Lines
- Parallel and Perpendicular Lines Wrap-Up
- Unit Review
- Unit Test

Unit 5: Linear Equations and Inequalities, Part 3

- Foundations
- Foundations Wrap-Up
- Equations from Graphs
- Equations from Graphs Wrap-Up
- Applications: Linear Models
- Applications: Linear Models Wrap-Up
- Graphing Linear Equations
- Graphing Linear Equations Wrap-Up
- Unit Review
- Unit Test

Unit 6: Solving Equations

- Foundations
- Foundations Wrap-Up
- Systems of Equations
- Systems of Equations Wrap-Up
- Substitution Method
- Substitution Method Wrap-Up
- Linear Combination
- Linear Combination Wrap-Up
- Applications: Systems of Linear Equations
- Applications: Systems of Linear Equations Wrap-Up
- Systems of Linear Inequalities
- Systems of Linear Equations Wrap-Up
- Unit Review
- Unit Test

Unit 7: Semester Review and Test

- Semester Review
- Semester Test