Intermediate Algebra builds students' command of linear, quadratic, polynomial, and exponential relationships. Students learn through discovery and application, developing the skills they need to break down complex challenges and demonstrate their knowledge in new situations.

Course topics include problem solving with basic equations and formulas; functions and problem solving; exponents and exponential functions; sequences, polynomials and factoring; quadratic equations and functions; and transformations of functions.

This course supports all students as they develop computational fluency, deepen conceptual understanding, and apply South Carolina College and Career Ready (SCCCR) Mathematical Process Standards. Students begin each lesson by discovering new concepts through guided instruction, and then confirm their understanding in an interactive, feedback-rich environment. Modeling activities equip students with tools for analyzing a variety of real-world scenarios and mathematical ideas. Journaling activities allow students to reason abstractly and quantitatively, construct arguments, critique reasoning, and communicate precisely. Performance tasks prepare students to synthesize their knowledge in novel, real-world scenarios and require that they make sense of multifaceted problems and persevere in solving them. Throughout the course, students are evaluated through a diversity of assessments specifically designed to prepare them for the content, form, and depth of the South Carolina End-of-Course Examination Program.

Length: Two Semesters

Unit 1: Foundations of Algebra

- Algebraic Properties and Expressions
- Solving Linear Equations
- Solving Multistep Linear Equations
- Solving Linear Inequalities
- Literal Equations
- Performance Task: Problem Solving with Inequalities
- Solving Equations and Inequalities Wrap-Up

Unit 2: Functions

- What Is a Function?
- Graphs of Functions
- Adding and Subtracting Functions
- Functions Wrap-Up

Unit 3: Exponents and Exponential Functions

- Exponents
- Exponential Functions

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- Graphs of Exponential Functions
- Exponents and Exponential Functions Wrap-Up

Unit 4: Sequences and Functions

- Arithmetic Sequences
- Geometric Sequences
- Understanding Number Sequences
- Exponential and Linear Growth
- Sequences and Functions Wrap-Up

Unit 5: Semester 1 Exam

Unit 6: Polynomials

- What Is a Polynomial?
- Adding and Subtracting Polynomials
- Multiplying Binomials
- Multiplying Polynomials
- Polynomials Wrap-Up

Unit 7: Factoring Polynomials

- GCF and Factoring by Grouping
- Factoring x² + bx + c
- Factoring ax² + bx + c
- Special Cases
- Factoring and Graphing
- Factoring Polynomials Wrap-Up

Unit 8: Quadratic Equations and Functions

- Solving Quadratic Equations
- Completing the Square
- The Quadratic Formula
- Graphs of Quadratic Functions
- Nonlinear Systems of Equations
- Linear, Quadratic, and Exponential Functions
- Performance Task: Pricing for Profit
- Quadratic Equations and Functions Wrap-Up

Unit 9: Undoing Functions and Moving Them Around

- Parent Functions
- Shifting Functions
- Stretching and Compressing Functions
- Transformations of Parent Functions
- Undoing Functions and Moving Them Around Wrap-Up

Unit 10: Semester 2 Exam

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