Discrete Mathematics is a two-semester course that is 100% aligned to the South Carolina College- and Career-Ready Mathematics Standards. The course is designed to help students develop computational fluency, deepen their conceptual understanding, and apply mathematical processes. Students will explore inference systems, investigate principles of set theory, use graph theory and matrices to solve problems, examine number theory and number systems, and analyze and compare the results of various election methods. The course supports student learning through guided instruction, interactive tools, and activities that provide opportunities to analyze real-world scenarios, construct arguments, critique reasoning, and communicate precisely.

There are no required materials for this course.

Length: Two Semesters

Unit 1: Logic

- Induction: The Search for Rules and Patterns
- Deduction: Making a Case
- The Look and Language of Logic
- Wrap-Up: Logic

Unit 2: Patterns and Reasoning

- Logic and Truth Tables
- Sequences and Series
- Mathematical Induction
- Wrap-Up: Patterns and Reasoning

Unit 3: Combinatorics

- Venn Diagrams
- Permutations and Combinations
- Binomial Theorem
- Wrap-Up: Combinatorics

Unit 4: Set Theory

- Basic Concepts of Set Theory
- Comparing Sets
- Operations on Sets
- Wrap-Up: Set Theory

Unit 5: Semester Wrap-Up

- Semester Wrap-Up

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