



Kelloggsville Virtual School

Algebra I

Course Description

2 Semesters; 1 credit

Prerequisite: Math 8 or Intro. Algebra

Algebra I builds students' command of linear, quadratic, 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; an introduction to functions and problem solving; linear equations and systems of linear equations; exponents and exponential functions; sequences and functions; descriptive statistics; polynomials and factoring; quadratic equations and functions; and function transformations and inverses. This course supports students as they develop computational fluency, deepen conceptual understanding, and apply mathematical knowledge. Students discover new concepts through guided instruction and confirm their understanding in an interactive, feedback-rich environment. A variety of activities allow for students to think mathematically in a variety of scenarios and tasks. In Discussions, students exchange and explain their mathematical ideas. Modeling activities ask them to analyze real-world scenarios and mathematical concepts. Journaling activities have students reason abstractly and quantitatively, construct arguments, critique reasoning, and communicate precisely. And in Performance Tasks, students synthesize their knowledge in novel, real-world scenarios, make sense of multifaceted problems, and persevere in solving them. This course is built to state standards. Throughout the course, students are evaluated by a variety of assessments designed to prepare them for the content, form, and depth of state exams. **No required or optional materials.**

Unit 1: Foundations of Algebra

Unit 2: Solving Equations and Inequalities

Unit 3: Functions

Unit 4: Linear Equations

Unit 5: Systems of Linear Equations

Unit 6: Exponents and Exponential Functions

Unit 7: Sequences and Functions

Unit 8: Semester 1 Exam

Unit 9: Polynomials

Unit 10: Factoring Polynomials

Unit 11: Quadratic Equations and Functions

Unit 12: Undoing Functions and Moving Them Around

Unit 13: Descriptive Statistics

Unit 14: Data and Mathematical Modeling

Unit 15: Semester 2 Exam