

Algebra II introduces students to advanced functions, with a focus on developing a strong conceptual grasp of the expressions that define those functions. 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 quadratic equations and functions; polynomial functions; rational expressions and functions; radical expressions and functions; exponential and logarithmic functions; modeling with functions; graphing and modeling data; inferential statistics; confidence intervals; and matrices.

This course supports all students as they develop computational fluency and deepen conceptual understanding. Students begin each lesson by discovering new concepts through guided instruction, 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.

This course is built to state standards.

## **Course Materials**

Additional course materials may be needed. Consult with your rep or school district.

Length: Two Semesters

**Unit 1: Expressions, Equations and Inequalities**

**Unit 2: Functions and Relations**

**Unit 3: Quadratic Functions**

**Unit 4: Transforming Functions**

**Unit 5: Polynomial Functions**

**Unit 6: Semester 1 Exam**

**Unit 7: Rational Expressions and Functions**

**Unit 8: Radical Expressions and Functions**

**Unit 9: Exponential and Logarithmic Functions**

**Unit 10: Statistical Analysis**

**Unit 11: Matrices**

**Unit 12: Semester 2 Review and Exam**