

# Conceptual Algebra II

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Room 103

**Prerequisite:** Satisfactory completion of Algebra I and Geometry. Students who have completed Algebra I but have not Geometry need special permission from the Department Chair to take Algebra II out of order.

**Description:** The pace of this course is determined by the needs of the students. This course will cover the fundamentals of Algebra II. Coursework includes an examination of real numbers, graphing, and solving linear and quadratic equations and inequalities, solving systems of equations in two variables, modeling with exponential equations, performing operations with radicals, factoring and applying probability and statistics. Emphasizing how math is applicable to everyday life is central to the course. This course may not meet the requirements for admission to a four year college/university.

## Graduation Standards

1. Reason and model quantitatively, using units and number systems to solve problems.
2. Interpret, represent, create and solve algebraic expressions.
3. Interpret, analyze, construct, and solve linear, quadratic, and trigonometric functions.

Unit 1	Review of Basic Concepts	
Summary	A review of basic operations in the real number system with hands on applications.	
Performance Indicators Assessed	1B – Properties of rational & irrational numbers. 2A – Structure of expressions. 2B – Equivalent forms.	2G – Create equations. 2H – Reasoning in solving equations.
Unit 2	Measurements and Percentages	
Summary	Real world problem solving involving percents and measurement conversions.	
Performance Indicators Assessed	1C – Reason quantitatively and solve. 1F - Computation skills. 2B – Equivalent forms.	2H – Reasoning and solving equations. 3C - Analyze functions. 4L – Apply volume formulas.
Unit 3	Probability and Statistics	
Summary	An overview of how to interpret basic data sets. Investigate various ways to display data.	
Performance Indicators Assessed	5A/B – Summarize data for single/2 variables. 5C – Interpret linear models. 5D – Understand random processes. 5E – Inferences from data.	5F - Independent & conditional probability. 5G - Probability of compound events. 5H - Expected values. 5I - Evaluate outcomes.
Unit 4	Linear Algebra	
Summary	Covering the numerous real world uses of Algebraic techniques.	
Performance Indicators Assessed	2G – Create equations. 2I – One variable equations. 2J – Systems of equations. 2K - Solve equations graphically.	3A – Functions and notation. 3B - Interpret functions. 3C – Analyze functions.

<b>Unit 5</b>	<b>Exponential Functions</b>
Summary	Creating, graphing, and analyzing exponential functions in the real world.
Performance Indicators Assessed	1A - Properties of exponents. 3F – Linear, quadratic, and exponential models. 3G – Interpret expressions for functions. 4A - Transformations in plane 4B – Rigid motion congruence.
<b>Unit 6</b>	<b>Review of Quadratics</b>
Summary	An overview of Quadratic equations and functions.
Performance Indicators Assessed	1E - Polynomials - complex roots. 2C - Polynomial operations. 2D – Polynomial zeros and factors. 2E - Polynomial identities. 3C - Analyze functions. 3F – Linear, quadratic, and exponential models.
<b>Unit 7</b>	<b>Radical Expressions and Equations</b>
Summary	Simplify radical expressions and solve radical equations.
Performance Indicators Assessed	1A – Properties of exponents. 1D – Complex number operations. 2F – Rational expressions. 2I – One variable equations.
<b>Unit 8</b>	<b>Finance and Consumer Applications</b>
Summary	Explore various mathematics that occur in the marketplace.
Performance Indicators Assessed	1C - Reasons quantitatively and solve. 3B - Interpret functions. 3C - Analyze functions. 3I - Model periodic phenomena. 5E - Inferences from data.

### **Summative Assessments/Retake**

- Summative assessments will count as 70% of the grade.
- Students have the opportunity to retake summative assessments.
- The student must submit a retake form to the teacher within five (5) school days of the date that the summative assessment score is reported to the student.
- The highest score a student can receive on a retake or late assessment is a 75.
- The score achieved on a retake will replace the current score (even if the score is lower).
- If a student is making up a test from an absence, that assessment will be graded up to 100.

### **Finals**

- An end of course Final Exam will be conducted, making up 10% of the students overall grade.

### **Make-up Work**

Upon their return to school from an absence, it is the student's responsibility to secure make-up work from their teacher. The due date of the missed work will be one additional class period for each day of absence from that class or at the discretion of the teacher.

### **Grading of Formative Assessments**

- Formative assessments will count as 30% of the grade.

- Formative assessments may be scored on either a 0-100 scale or a 0-4 scale.
- The 0-4 scale will be represented in Power School as 4=100, 3=87, 2=77, and 1=67.
- The method of scoring of formative assessments will be determined by assignment.