

Algebra 2

Teacher: Beth Travers

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Department: Math, Business, and Computer Science

Department Chair: Eliza Pyliotis

Course Teachers: Kimberly Rosander, Beth Travers

Credit: 1.0

Course Length: Full Year



Course Description: Algebra II will continue to implement the Algebra II Common Core Curriculum. Topics may include, but are not limited to: Linear Systems, Quadratic Functions and equations, Polynomial Functions and equations, Rational Functions and equations, Radical Functions and equations, Exponential and Logarithmic Functions and equations, Trigonometric Functions and equations, and Probability and Statistics.

Recommendation: Successful completion of Algebra 1 and Geometry.

Essential Question:

- How can we use functions and their properties to model and solve real-world problems?
- How can we transform and manipulate algebraic expressions and equations to reveal their underlying structure and solve complex problems?

Related Frameworks/Competencies:

- PHS Learner Expectations ([Found on pg. 5 of the newest iteration of our Program of Studies](#))
- Common Core Standards

Course Outcomes/Power Standards:

- The Real Number System
 - Extend the properties of exponents to rational exponents
 - Reason quantitatively and use units to solve problems
 - Perform arithmetic operations with complex numbers
 - Represent complex numbers and their operations on the complex plane
 - Use complex numbers in polynomial identities and equations
 - Perform operations on matrices and use matrices in applications
- Algebra
 - Interpret the structure of expressions
 - Write expressions in equivalent forms to solve problems
 - Perform arithmetic operations on polynomials
 - Understand the relationship between zeros and factors of polynomials
 - Use polynomial identities to solve problems
 - Rewrite rational expressions

- Create equations that describe numbers or relationships
- Understand solving equations as a process of reasoning and explain the reasoning
- Solve equations and inequalities in one variable
- Solve systems of equations
- Represent and solve equations and inequalities graphically
- Functions
 - Understand the concept of a function and use function notation
 - Interpret functions that arise in applications in terms of the context
 - Analyze functions using different representations
 - Build a function that models a relationship between two quantities
 - Build new functions from existing functions
 - Construct and compare linear, quadratic, and exponential models and solve problems
 - Interpret expressions for functions in terms of the situation they model
- Geometry
 - Translate between the geometric description and the equation for a conic section
- Statistics and Probability
 - Summarize, represent, and interpret data on a single count or measurement variable
 - Summarize, represent, and interpret data on two categorical and quantitative variables

Course Expectations

Participation/Preparation for Class:

- **BE ON TIME.** If you are late to class, you must have a pass or you will be marked tardy.
- **Be prepared for class:** bring all your materials to class. (Chromebook, binder, calculator, pencils, etc.)
- **Respect yourself, each other, your surroundings, and me.**
 - Allow classmates to think and finish thoughts for themselves
 - Remember, everyone learns differently and may be distracted by different things. Be considerate.

Attendance:

- It is your responsibility to check Google Classroom for missed work while absent in order to be ready for the next class and avoid a zero.
- Be sure to obtain/copy any class notes and make an honest attempt at the associated assignment. I am looking for effort not perfection so make notes on the things you need me to clarify.
- If you miss a quiz or test when absent, you must make it up within 2 days of your return.
- If you are absent the day before a test or quiz and return the day of the test or quiz, you are still responsible for taking the test or quiz at that time.
- Special circumstances may arise so please communicate with me ahead of time when possible.

Course Communication:

- **Google Classroom** - Where all notes, homework, assessments and important info can be found
- **Remind** - My primary way of pushing out messages quickly and efficiently. Turn on your notifications so you don't miss out.
- **School Email** - Used for communication with me outside of class time.
- **Aspen** - Grades are posted shortly after they are scored.

Electronic Devices: I run a distraction free classroom

- Phones are expected to remain in a safe classroom holder during class time unless otherwise directed by me.
- School issued devices will be used when activities and assignments require it. Please be sure to bring a charged device each day.

Academic Dishonesty:

- It is paramount you do your own work; provide appropriate references to all assignments; and abide by the Portsmouth High School academic honesty policy.
- Students who violate this policy will be subject to disciplinary action. See the most recent iteration of the PHS Student Handbook for further detail.

Course Requirements:

Students must:

- Demonstrate proficiency on each CCA in order to be eligible to receive credit for the class.
- Achieve a passing grade (at least a 65%) in the course to receive credit for the class.
- Sit for the Final Exam to receive credit for the class
 - **SENIORS ONLY** are exempt from the Final Exam if they have a cumulative average (midterm exam included) of 90% or higher.

Grading Policy:

Homework/Classwork- (10%)

- The process is more important than the result and if it isn't on paper, I can't grade it.
- All homework assignments are due at the start of the next class.
 - Late work is not accepted.
 - One homework may be excused per quarter-no questions asked.
- The points you will receive are as follows provided appropriate work is evident:
 - 4 – all assigned problems attempted
 - 3 – most assigned problems attempted
 - 2 – half of assigned problems attempted
 - 1 – less than half of assigned problems attempted
 - 0 – incomplete or no work provided

Graded Work (25%)

- **Follow-Ups-**
 - On demand quick HW check-ins after discussion. Be prepared for one everyday
- **Graded Assignments-**
 - Take home follow-ups or group tasks/activities

Summative Assessments (65%)

- **Quizzes-** (50 points)
 - Routinely shorter in length than tests and typically given twice a quarter
- **Unit Tests-** (100 points)
 - Designed to determine proficiency on major standards and typically twice a quarter
- **CCAs-** (50 or 100 points)
 - Typically given in quarter 2 and 3

GRADING SCALE

A+ 97-100%
A 93-96%
A- 90-92%
B+ 87-89%

B 83-86%
B- 80-82%
C+ 77-79%
C 73-76%

C- 70-72%
D+ 68-69%
D 65-67%
F <65%

SCOPE & SEQUENCE

** Please note that the Scope & Sequence provided below outlines the closest representation of course topics and timelines. Depending on the circumstances of any given school year, the order and inclusion of these topics may be subject to change.*

Timeframe	Topics to be Presented (As outlined in enVision Algebra 2 Textbook)
Quarter 1	- Topic 1 (Linear Functions and Systems) - Topic 2 (Quadratic Functions and Equations)
Quarter 2	- Topic 3 (Polynomial Functions) - Topic 4 (Rational Functions)
Approximate End of Semester 1	
Quarter 3	- Topic 5 (Rational Exponents and Radical Functions) - Topic 6 (Exponential And Logarithmic Functions)
Quarter 4	- Topic 9 (Conic Sections) - Topic 10 (Matrices) - Topic 11 (Data Analysis and Statistics)