



LINCOLN-WOODSTOCK COOPERATIVE SCHOOL DISTRICT COURSE SYLLABUS

Course Name: Integrated 2 Math

Semester: Full Year

Teacher: Jessica Halm

Course Description: This course builds upon the topics explored in Integrated I Mathematics. Foundational concepts of algebraic and geometric thinking, often cited as a requisite for college and career readiness, provide the gateway to advanced mathematics. Key concepts include rate of change, domain and range of functions, recognizing function graphs, and transformations of functions. Functions that are explored in-depth include exponential and quadratic functions. Other topics include triangle relationships and similarity, geometric figures and measurements, probability, and circles.

Competencies or Standards Assessed:

1. **Symbolic Expression:** Students will reason abstractly and manipulate symbolic expressions and models to represent relationships and interpret expressions, equations, and inequalities in terms of a given context (including real-world phenomena) for determining unknown values.
2. **Numbers and Number Systems:** Students will expand their understanding of number systems, thinking flexibly and attending to precision and reasonableness, when solving problems using complex numbers.
3. **Reasoning and Computational Strategies:** Students will expand the use of computational strategies and algorithms, using evidence to support authentic application.
4. **Metacognitive Skills and Communication:** Students will use reasoning and metacognitive skills to develop mathematical arguments to justify the reasonableness of conjectures and outcomes and to support formal proofs.
5. **Measurement:** Students will explain reasoning when applying and modeling geometric measurement formulas.
6. **Algebraic Functions, Patterns, and Relations:** Students will make use of patterns, relations, and functions to interpret, compare, and analyze pure and applied situations, using the information to make conjectures and support conclusions.
7. **Geometry:** Students will solve problems involving spatial reasoning using properties of 2- and 3-dimensional figures to analyze, represent, and model geometric relationships in pure/theoretical and authentic applied contexts.

Anchor Texts or Major Curriculum:

Textbook:

enVision Integrated Mathematics II. 2019. Pearson. Boston, Massachusetts.

Online Learning Platform: [SavvasRealize.com](https://www.savvasrealize.com)

Course Outline (major units of study):

Unit Title	Essential Question or Overarching Understanding
Topic 1- Exponents and Roots	How can exponential, square root, and cube root functions be used to model situations and solve problems?
Topic 2- Polynomials and Factoring	How can we use polynomials to rewrite expressions and solve problems?
Topic 3- Quadratic Functions	How can sketches and equations of quadratic functions be used to model situations and make predictions?
Topic 4- Solving Quadratic Equations	How can we use quadratic equations to model situations and solve problems?
Topic 5- Quadratic Equations and Complex Numbers	How can complex numbers be used in conjunction with quadratic functions to model situations and solve problems?
Topic 6- Working with Functions	What are some function operations that can be used to create models and solve problems?
Topic 7- Relationships in Triangles	How are the sides, segments, and angles of triangles related?
Topic 8- Quadrilaterals and Other Polygons	How are the properties of parallelograms used to solve problems and classify quadrilaterals?
Topic 9- Similarity and Right Triangles	How are properties of similar figures used to solve problems?
Topic 10- Probability	How can we find the probability of events and combinations of events?



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Geometry	Topic 11- Coordinate	How can the geometric relationships be proven by applying algebraic properties to geometric figures represented in the coordinate plane?
	Topic 12- Circles	When a line intersects a circle, how are the figures formed related to the radius, circumference, and area of the circle?
	Topic 13- Two- and Three-Dimensional Models	How is Cavalieri's Principle helpful in understanding the volume formulas for solids?

Portrait of a Learner

Independent Learner

I make thoughtful plans and do my best to reach personal goals using feedback to work through challenges.

Responsible Collaborator

I work with others to achieve shared goals by listening actively, contributing ideas, and managing conflict.

Critical Thinker

I analyze information, ask thoughtful questions, and apply reasoning skills to solve problems and make decisions.

Effective Communicator

I express ideas clearly, adapting strategies based on the audience, setting, and/or purpose.

Global Citizen

I show that I care and take responsibility by helping in my community and the world around me.

Additional Classroom Expectations:

Homework (Formatives):

- assigned daily Monday-Thursday via Google Classroom
- accounts for 20% of your overall grade each quarter
- checked and graded based on visually apparent effort, or by randomly selected problem submission
- Students who have fallen behind due to absences, etc., should use the weekends to get caught up

Quizzes, Tests, Written Summaries, Presentations, and Projects (Summatives):

- account for 80% of the overall grade each quarter
- Individual quiz and test responses will be evaluated based on the above rubric
- presentations, written summaries, and projects have their own separate evaluation rubric (attached)
- Traditional tests/quizzes are open notes
- may be corrected for an improved grade (see “Corrections” below)

Summative Corrections:

- Resubmit the original summative, with corrections attached to the front
- Corrections must be made for ***each and every problem/portion for which the student lost points***
- Complete corrections are consistent with a “4” on the above rubric
- notes, classmate, and/or teacher assistance may be used for corrections
- Corrections are due no later than 1 week after the summative is graded and returned to the student

Equipment:

- writing utensil, straightedge, textbook, and preferred note-taking system.
- TI-89 graphing calculators are available for short and long-term loan, course dependent.