

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT



Integrated Math 2

Board Approval Date: January 18, 2024	Course Length: 2 Semesters
Grading: A-F	Credits: 5 Credits per Semester
Proposed Grade Level(s): 10, 11	Subject Area: Mathematics Elective Area (if applicable):
Prerequisite(s): IM 1	Corequisite(s):
CTE Sector/Pathway:	
Intent to Pursue 'A-G' College Prep Status: Yes	
A-G Course Identifier: (c) Mathematics	
Graduation Requirement: Yes	
Course Intent: Site Specific Program (if applicable):	
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COURSE DESCRIPTION (Online):

Integrated Mathematics II, a second-year high school math course, introduces students to polynomials, including the factoring of polynomials, before moving onto quadratic equations and quadratic functions. Students expand on their knowledge of sequences in learning about series. The course also covers probability, including conditional probability. There are many geometry topics in the course, including transversals, quadrilaterals, similarity, volume, and circles. Students solve problems using right triangle trigonometry and special right triangles, and they use the tools of analytic geometry to describe circles and parabolas in the coordinate plane.

DETAILED UNITS OF INSTRUCTION:

Unit Number/Title	Unit Essential Questions	Examples of Formative Assessments	Examples of Summative Assessment
Semester 1			
1. Radicals and Exponents	In this unit, students learn how to classify rational and irrational numbers and how to simplify radical expressions and radicals. Students also learn how to rationalize a denominator while learning how to add, subtract, and multiply radical expressions. Students then learn about integer and rational exponents and then how to rewrite, transform, and solve exponential expressions and equations.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations
2. Polynomials	As with real numbers, operations can be performed on polynomials. In this unit, students learn how to perform operations on polynomials and explore the closure of polynomials before learning several methods for factoring polynomials. Lastly, students use factoring to find roots of a polynomial equation.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations
3. Quadratic	In this unit, students learn	*Online or paper-based	*Exams (unit, semester

Equations	several methods for solving a quadratic equation and determine which methods are best for a given equation. Students then use those skills to transform formulas with quadratics and to solve real-world problems.	worksheets and practice sets *Quizzes *Threaded discussions	and final) *Essays, research papers, and other writing assignments *Presentations
4. Complex Numbers and Polynomials	In this unit, students learn how to evaluate perfect square roots, combine like radicals, and compute products of square roots. Students learn to simplify and combine radical expressions, find real n th roots, and convert between radicals and rational. Students learn to simplify imaginary numbers and powers of i , and then they learn how to perform operations with imaginary numbers. Students begin to learn about operations with complex numbers, how to identify parts of complex numbers, and then how to perform operations with complex numbers. Next, students learn to solve equations with complex solutions and then how to use the quadratic formula.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations
5. Quadratic Functions	In this unit, students learn how to graph and transform graphs of quadratic functions. They model situations with quadratic functions and interpret graphs of quadratic functions. Students also learn how to determine the average rate of change for a given interval on a quadratic	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations

	function and how to solve systems of equations that include one linear and one quadratic equation.		
6. Counting and Probability	This unit begins with the basics of sample space and outcomes. Students determine probabilities of independent and dependent events and learn about conditional probability. They also determine probabilities of mutually exclusive and non-mutually exclusive events.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations
7. Transversals and Triangles	Several special angle pairs occur when two lines are intersected by a transversal. Students solve problems with these angle pairs and use special angle pairs to determine if two lines are parallel. Students then prove and use the triangle sum theorem and solve problems involving special segments in triangles.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations
8. Quadrilaterals 9. Semester Review and Test	This unit is about quadrilaterals. The focus is on parallelograms and their properties. Students use their algebra skills to solve problems involving the side and angle relationships in parallelograms, rectangles, rhombi, and squares. Students also learn about the properties of trapezoids and kites.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations *Semester Test, Part 1 *Semester Test, Part 2
Semester 2			
1. Similarity	Similarity and scale are important geometric ideas.	*Online or paper-based worksheets and practice sets	*Exams (unit, semester and final)

	In this unit, students expand on their knowledge of dilations and scale factor, and they learn to partition directed line segments. After learning about similar polygons, students discover the ratios for the perimeters and areas of similar figures.	*Quizzes *Threaded discussions	*Essays, research papers, and other writing assignments *Presentations
2. Triangle Similarity	This unit focuses on similar triangles. Students learn how to prove triangles similar and then prove and use the triangle proportionality and triangle angle bisector theorems. Students then use similarity to prove the Pythagorean theorem.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations
3. Right Triangle Trigonometry	The relationships between sides and angles in a right triangle are at the heart of trigonometry. In this unit, students learn the sine, cosine, and tangent ratios and use them to solve mathematical and real-world problems.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations
4. Circles	In this unit, students first learn about and construct inscribed and circumscribed triangles. They then solve problems involving chords and arcs, tangents to circles, and use the relationship between an inscribed angle and its arc. Students also prove circles similar, solve problems with radian measures, and determine areas of sectors of circles.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations
5. Conic Sections	This unit introduces students to conic sections. Students learn how to	*Online or paper-based worksheets and practice sets *Quizzes	*Exams (unit, semester and final) *Essays, research papers,

	write equations of circles and graph circles on the coordinate plane. They also learn to convert between forms of equations for circles. Likewise, students learn how to write equations of parabolas and graph parabolas on the coordinate plane. They will work with parabolas that open both vertically and horizontally. Students will also convert between forms of equations for parabolas.	*Threaded discussions	and other writing assignments *Presentations
6. Area and Volume	In this unit, students find the circumference and area of circles, and they use that knowledge to solve problems involving composite figures that include a semicircle. Students also learn and apply the volume formulas for prisms, pyramids, cylinders, cones, and spheres before solving problems involving the ratios for the areas and volumes of figures.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations
7. Project: Storage Site 8. Semester Review and Test	For this project, you will design a storage site where bulk materials are stored in conical piles. First, you'll research characteristics of several bulk materials. Then you'll design your storage site and perform calculations based on the characteristics of your materials. Finally, you'll reflect on various aspects of the project. Students will review semester content.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	Writing and reflection *Semester Test, Part 1 *Semester Test, Part 2

ESSENTIAL STANDARDS:

https://docs.google.com/spreadsheets/d/16ensrqF6onzk19jWgtj9_-9mJIEKiRxp/edit?usp=sharing&oid=104956413096596664509&rtpof=true&sd=true

RELEVANT STANDARDS AND FRAMEWORKS, CONTENT/PROGRAM SPECIFIC STANDARDS:**Link to Common Core Standards (if applicable):**

Educational standards describe what students should know and be able to do in each subject in each grade. In California, the State Board of Education decides on the standards for all students, from kindergarten through high school.

https://docs.google.com/spreadsheets/d/16ensrqF6onzk19jWgtj9_-9mJIEKiRxp/edit?usp=sharing&oid=104956413096596664509&rtpof=true&sd=true

Link to Framework (if applicable):

Curriculum frameworks provide guidance for implementing the content standards adopted by the State Board of Education (SBE). Frameworks are developed by the Instructional Quality Commission, formerly known as the Curriculum Development and Supplemental Materials Commission, which also reviews and recommends textbooks and other instructional materials to be adopted by the SBE.

<https://www.cde.ca.gov/ci/ma/cf/>

Link to Subject Area Content Standards (if applicable):

Content standards were designed to encourage the highest achievement of every student, by defining the knowledge, concepts, and skills that students should acquire at each grade level.

<https://www.cde.ca.gov/be/st/ss/documents/ccssmathstandardaug2013.pdf>

Link to Program Content Area Standards (if applicable):

Program Content Area Standards apply to programs such as International Baccalaureate, Advanced Placement, Career and Technical Education, etc.

TEXTBOOKS AND RESOURCE MATERIALS:**Textbooks**

Board Approved	Pilot Completion Date (If applicable)	Textbook Title	Author(s)	Publisher	Edition	Date
Yes		Online Curriculum	K12 Stride	K12 Stride		12/1/2021

Yes		<i>Algebra 1 Reference Guide and Problem Sets</i>	Susan Raley, Paul Thomas, Kelly Engel	K12 Stride		12/1/2021
Yes		<i>Geometry: A Reference Guide</i>	Susan Raley, Paul Thomas, Kelly Engel	K12 Stride		12/1/2021

Other Resource Materials

N/A

Supplemental Materials

Board approved supplemental materials (Including but not limited to: Film Clips, Digital Resources, Supplemental texts, DVDs, Programs (Pebble Creek, DBQ, etc.):

N/A