

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT



Integrated Math 3

Board Approval Date: January 18, 2024	Course Length: 2 Semesters
Grading: A-F	Credits: 5 Credits per Semester
Proposed Grade Level(s): 11, 12	Subject Area: Mathematics Elective Area (if applicable):
Prerequisite(s): IM 2	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):

In this third-year high school integrated math course, students expand on previous high school math topics including systems of equations and inequalities, polynomials, trigonometry, statistics, and functions. The introduction of complex numbers leads to new adventures in factoring polynomials, solving polynomial equations, and graphing polynomials. Students work with radical and rational expressions and equations and extend their knowledge of exponential functions to inverses and logarithmic functions. They learn about the unit circle and use trigonometric functions to model periodic processes. Geometric topics include three-dimensional visualization, design and optimization, and real-world modeling. Students are introduced to piecewise and logistic functions and perform quadratic and exponential regressions. Finally, students use statistical and probability tools, such as the standard normal distribution, to understand data and use simulations, experiments, and surveys to make inferences.

DETAILED UNITS OF INSTRUCTION:

Unit Number/Title	Unit Essential Questions	Examples of Formative Assessments	Examples of Summative Assessment
Semester 1			
1. Systems of Linear Equations and Inequalities	This unit extends from solving systems of two linear equations to solving systems of three linear equations and learning how to solve compound inequalities. They also learn how to use equations and inequalities to solve linear programming problems, including problems about maximizing profit and minimizing cost.	*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	This unit focuses on polynomials. Students learn several ways to factor polynomials and then factor to solve polynomial 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
3. Unit 3: Polynomial Functions	Polynomials can be divided in the same way that real numbers can be divided. In this unit, students divide polynomials using long division and synthetic division. They learn that	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations

	long division leads to factoring, finding roots and zeros of polynomial equations and functions, and graphing polynomial functions. It is all brought together when students learn the fundamental theorem of algebra.		
4. Sequences and Series	In this unit, students learn how to write and use recursive and explicit rules for both arithmetic and geometric sequences. Students also find a sum in sigma notation.	*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. Radical and Rational Expressions	This unit introduces students to the concept of extraneous solutions. Students solve radical equations, simplify rational expressions, perform operations with rational expressions, and solve rational 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
6. Exponential and Logarithmic Functions	In this unit, students work with exponential functions, learn about inverses, and learn how logarithms arise naturally as inverses of exponential functions. Students graph logarithmic functions and use logarithms 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
7. Modeling with Geometry 8. Semester Review and Test	In this unit, students use their visualization skills to determine cross sections and three-dimensional objects formed by rotating two-dimensional shapes. They use distances, surface area, volume, and density to solve many types of 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 *Semester Test, Part 1 *Semester Test, Part 2

	Semester Review		
Semester 2			
1. Radians and Trigonometric Functions	In this unit, students solve problems using right triangle trigonometry. Students then move onto the unit circle, where they learn how to use radian measure to define trigonometric functions that are no longer bound by angles in a triangle.	*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. Graphs of Sinusoidal Functions	Graphs of sine and cosine functions are called sinusoids. In this unit, students see how the graphs of the sine and cosine functions are waves that can be shifted, amplified, and compressed to model many periodic phenomena.	*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. More Function Types	The focus of this unit is on graphing different types of functions. Students graph rational, radical, and quadratic functions, perform quadratic and exponential regressions, and are introduced to piecewise-defined functions, step functions, and logistic growth functions.	*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. Using Function Models	In this unit, students solve systems of linear and quadratic equations algebraically and graphically, solve equations by determining intersection points, and determine key features of functions such	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations

	as where a function is increasing or decreasing. Students compare features of different types of functions and learn how to combine functions.		
5. Probability Distributions	In this unit, students learn about probability distributions, including the binomial distribution and the normal distribution. Students use the normal distribution to analyze and compare data.	*Online or paper-based worksheets and practice sets *Quizzes *Threaded discussions	*Exams (unit, semester and final) *Essays, research papers, and other writing assignments *Presentations
6. Data Gathering and Analysis	Collecting and interpreting samples is the groundwork of statistics. In this unit, students focus on how the sampling process is improved by random selection, and how samples can be used to make estimations and predictions.	*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: Tides Model 8. Semester Review and Test	For this project, you will use sinusoidal functions to model real-world data. First, you'll research tide tables for three locations. Then you'll graph the data and create sinusoidal models to approximate the data. Finally, you'll reflect on your findings. 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:

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/11dIX-E7w6Y-ZA1S37u5-3MtBn-Sb7lqz/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		<i>Online Curriculum</i>	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		12/2/2021
Yes		<i>Algebra 2 Reference Guide Geometry: A Reference Guide</i>	Susan Raley, Paul Thomas, Kelly Engel	K12 Stride		12/2/2021

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