

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT

Pre-AP Math, Course 2

DATE: February 2012

SUBJECT AREA: Math

PROPOSED GRADE LEVEL(S): 7th

COURSE LENGTH: One Year

GRADING: A-F

NUMBER OF CREDITS: NA

PREREQUISITES: Completion of 6th grade math standards

BRIEF COURSE DESCRIPTION:

According to the state mathematics framework, by the end of grade seven, students are adept at manipulating numbers and equations and understand the general principles at work. Students understand and use factoring of numerators and denominators and properties of exponents. They know the Pythagorean Theorem and use it to solve simple problems. Students know how to compute the surface area and volume of basic 3-D figures and understand how area and volume change with a change in scale. Students can make conversions between different units of measurement. Students are proficient at changing between fractions, decimals, and percents and know and use the different representations of numbers. They increase their facility with ratio, proportion, and percentages. They graph linear functions and understand the idea of slope and its relation to ratio.

GENERAL GOALS/PURPOSES:

This course was designed for the advanced learner, to prepare them for AP and college readiness. The course uses *Springboard*, the official Pre-AP curriculum from College Board. According to the College Board website, *Springboard* infuses rigor, sets high expectations, and expands access and opportunity for all students. *Springboard* provides culturally and personally relevant activities designed to engage students in problem solving, academic discourse and critical analysis (www.collegeboard.org).

STUDENT READING COMPONENT:

Sample reading strategies are incorporated throughout the text. Building academic vocabulary is a primary focus while learning effective reading strategies. Students will have daily opportunities to interact with the text.

STUDENT WRITING/ORAL COMPONENT:

Students will have opportunities to express their understanding of concepts in writing as well as orally presenting work to the class. All written work will follow standard rules of English. Teachers are provided with several different strategies to incorporate writing and engage students in purposeful conversation throughout the text.

DETAILED UNITS OF INSTRUCTION:

This course is taught using *Springboard, Mathematics with Meaning, Middle School 2* curriculum from College Board, 2010.

Pre-AP, Course 2			
Unit	Essential Questions	Academic Vocabulary	Unit Concepts
Unit 1 Integers and Rational Numbers	Why is it important to understand properties and operations involving integers and negative rational numbers? How can number lines	Exponential form Principal Scientific notation Set of real numbers Set notation	<ul style="list-style-type: none">Integer operationsExponentsReal numbersComputation with decimals and fractionsPercent applications: profit and percent profit, markup

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	and diagrams be used to interpret solutions of real-world problems?		<ul style="list-style-type: none"> and percent • Increase, discount and percent decrease • Percents >100 and <1 • Commission • Simple and compound interest • Scientific notation
Unit 2 Equations, Inequalities, and Linear Relationships	Why is it important to understand how to solve linear equations and inequalities? How can graphs be used to interpret solutions of real-world problems?	Direct variation Function Inequality Like terms Open sentence	<ul style="list-style-type: none"> • Patterns • Concept of variable • Linear functions • Writing and solving linear equations • Combining like terms • Graphing on the coordinate plane • Slope • Writing and solving linear equations • Writing one-variable inequalities from verbal descriptions • Graphing and solving one-variable inequalities • Direct variation
Unit 3 Two Dimensional Geometry and Similarity	Why is it important to understand properties of angles and figures to solve problems? How can diagrams be used to interpret solutions to real-world problems?	Angle Coordinate plane Polygon Pythagorean theorem Ratio	<ul style="list-style-type: none"> • Area of two-dimensional figures • Perimeter of two-dimensional figures • Angle pairs • Angles of convex polygons • Transformations • Ratios and rates • Proportions • Measurement conversions • Scale drawings • Similar figures • Pythagorean theorem
Unit 4 Three Dimensional Geometry	Why is it important to be able to relate two-dimensional drawings with three-dimensional figures? How can surface area and volume be used to find answers to real-	Area Net Similar Solid Volume	<ul style="list-style-type: none"> • Representing a three-dimensional figure with an isometric drawing and a net • Determining the surface area and volume of a rectangular prism • Determining the volume of a prism, cylinder, and cone

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Unit	Essential Questions	Academic Vocabulary	Unit Concepts
	world problems?		<ul style="list-style-type: none"> • Describing the relationship between the volume of a prism and a pyramid • Determining the surface area of a prism, pyramid, and cylinder • Determining and applying the ratio of the areas and volumes in similar solids
Unit 5 Data and Probability	Why is it important to be able to represent data using graphs and measures of central tendency? How can data and probabilities be used to predict the outcome of future events.	Bivariate data Event Five-number summary Measures of center Random Trend line	<ul style="list-style-type: none"> • Creating data displays • Interpreting data displays • Sample space • Probability of independent and dependent events • Probability of compound events • Mutual exclusivity

SUBJECT AREA CONTENT STANDARDS TO BE ADDRESSED:

Springboard is fully aligned to both the CA State Standards (1997) and the CA Common Core State Standards (2010) for grade seven.

THIS COURSE WILL PREPARE STUDENTS FOR THE CAHSEE and/or CSTs:

Math

LAB FEE, IF REQUIRED:

None

DISTRICT ESLR's TO BE ADDRESSED:

Students will be:

- **Self-directed Learners:** who will be able to use notes and a textbook to assist them in continuing their learning outside of the classroom setting.
- **Efficient Communicators:** who can explain mathematical concepts to others and use mathematics to organize and explain data.
- **Quality Producers:** who understand the importance of neat, organized work that demonstrates their thinking and understanding of the solution they've formed to solve a problem.
- **Constructive Thinkers:** who are able to attack problems with organization, logic, and mathematical skills they've developed in a systematic fashion.
- **Collaborative Workers:** who can work in a variety of settings in culturally diverse groups. They will be able to form and use study groups to strengthen their own understanding in addition to providing the same service for classmates.

- **Responsible Citizens**: who accept the consequences of their actions and who demonstrate their understanding of their role in the learning process.

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