

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT

INTEGRATED MATH 1 FOUNDATIONS

Date: January 2016

Proposed Grade Level(s): 9th

Grading: A-F

Prerequisites: None

Course Length: One year

Subject Area: Mathematics

Number of Credits: 5 per semester

Intent to Pursue 'A-G' College Prep Status: No

COURSE DESCRIPTION:

Integrated Math 1 Foundations is designed for students who are not yet ready for Integrated Math 1. This is a non-college prep course designed to build the concepts and skills necessary for high school mathematics. Instructional time will focus on the following topics from the Common Core State Standards for Mathematics: ratios and proportional reasoning, operations with rational numbers, linear expressions and equations, linear systems, functions, and the Pythagorean Theorem. After successful completion of this course, students can enroll in Integrated Math 1.

GENERAL GOALS/ESSENTIAL QUESTIONS:

This course is designed to provide the necessary foundation for success in Integrated Math 1. Concepts and problem solving will be balanced with skills practice, focusing on those math facts that should be automatic. Student's misconceptions about concepts will be addressed to move towards mastery. The goal is to accelerate the students learning so that they can be successful in higher mathematics. Each lesson has an intended goal, a launch problem to engage students, differentiated instructional models, and ends with a summary question.

CCSS READING/WRITING/SPEAKING/LISTENING COMPONENT:

The curriculum has literacy strategies embedded within the text that assists students in the following:

- Understanding math tasks
- Communicating understanding orally and through writing
- Writing about math
- Building math vocabulary
- Building academic vocabulary

The eight *Standards for Mathematical Practice* describe the attributes of mathematically proficient students and expertise that mathematics educators at all levels should seek to develop in their students. Mathematical practices provide a vehicle through which students engage with and learn mathematics – with a heavy focus on reading, writing, and explaining.

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.

6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

DETAILED UNITS OF INSTRUCTION:

Units	Learning Goals
Unit 1 Foundations of Algebra 26 days	<ul style="list-style-type: none"> • Reasoning with diagrams, numbers and variables • Conventions for using numbers, variables, and parentheses • Number properties and their conventions • Using variables in formulas • The Distributive Property • Inverse operations of addition and multiplication • Relationships between quantities • Using graphs to represent relationships • Understanding and representing problem situations
Unit 2 Operations with Fractions 20 days	<ul style="list-style-type: none"> • Adding • Subtracting • Multiplying • Dividing • Common Denominators • Uncommon denominators
Unit 3 Positive and Negative Numbers 24 days	<ul style="list-style-type: none"> • The number line • Comparing • Operations with positive and negative numbers • Properties with numbers • Absolute values • Problem solving
Unit 4 Ratio and Proportionality 30 days	<ul style="list-style-type: none"> • Comparing quantities • Ratios and unit rates • Solving proportions • Scale factor • Unit analysis • Proportional relationships • Introducing functions
Unit 5 Showing Relationships with Graphs 26	<ul style="list-style-type: none"> • Coordinate plane • Introducing slope • Graphing geometric relationships • Linear graphs • Parallel and perpendicular lines • Systems of equations

	<ul style="list-style-type: none"> • Interpreting graphs
Unit 6 Expressions, Equations, and Exponents 34 days	<ul style="list-style-type: none"> • Writing and evaluating expressions • Operations with Exponents • Area models • Operations with expressions • Scientific notation • Square roots • Pythagorean theorem

TEXTBOOKS AND RESOURCE MATERIALS:

Core Connections Integrated II, CPM (College Preparatory Mathematics), 2013
iReady: Prescriptive Lessons

SUBJECT AREA CONTENT STATE STANDARDS TO BE ADDRESSED:

The content standards addressed in this course come from grades 6-8 domains:

- Ratios and Proportional Relationships:
 - Understand ratio concepts and use ratio reasoning to solve problems 6.RP
 - Analyze proportional relationships and use them to solve real world and mathematical problems. 7.RP
- The Number System:
 - Apply and extend previous understandings of multiplication and division to divide fractions by fractions; compute fluently with multi-digit numbers and find common factors and multiples; Apply and extend previous understandings of numbers to the system of rational numbers. 6.NS
 - Apply and extend previous understandings of operations with fractions o add, subtract, multiply, and divide rational numbers. 7.NS
 - Know that there are numbers that are not rational, and approximate them by rational numbers. 8.NS
- Expressions and Equations:
 - Apply and extend previous understandings of arithmetic to algebraic expressions; Reason about and solve one-variable equations and inequalities. 6.EE
 - Work with radicals and integer exponents; Understand the connections between proportional relationships, lines, and linear equations; Analyze and solve linear equations and pairs of simultaneous linear equations. 8.EE
- Functions:
 - Define, evaluate, and compare functions; Use functions to model relationships between quantities. 8.F
- Geometry:
 - Draw, construct, and describe geometrical figures and describe the relationships between them, 7.G

- Understand congruence and similarity using physical models, transparencies, or geometry software; Understand and apply the Pythagorean Theorem. 8. G

The curriculum follows a *workshop model*, consisting of an opening whole class instruction, student centered work time, and a lesson closing focusing on student progress.

DISTRICT ESLRs TO BE ADDRESSED:

When students exit a secondary mathematics course, they 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.