

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT

Course 1 Honors

Date: April 2015

Proposed Grade Level(s): 6

Grading: A-F

Prerequisites: Prerequisites: Completing 5th grade math with an A or B; 80% proficiency on end of year District Progress Assessment

COURSE DESCRIPTION:

This is an enriched grade level course in full alignment with CA Common Core State Standards. According to the standards, instructional time in 6th grade should focus on four critical areas: (1) connecting ratio, rate, and percentage to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking. Students also work toward fluency with multi digit division and multi-digit decimal operations.

GENERAL GOALS/PURPOSES:

This course is designed to address the CA Common Core Standards for 6th grade. The content domains for 6th grade include *Ratio and Proportional Relationships*, *The Number System*, *Expressions and Equations*, *Geometry*, and *Statistics and Probability*. This is an enriched grade level course that will prepare students for acceleration in 7th grade.

CCSS READING/WRITING/SPEAKING/LISTENING COMPONENTS:

Part of the CA Common Core Standards includes *Standards for Mathematical Practice*. These practices describe the “processes and proficiencies” which mathematically proficient students possess. These standards address many literacy strategies including:

- Making sense of math tasks
- Constructing viable arguments
- Communicating understanding orally and through writing
- Writing about math
- Building math vocabulary
- Building academic vocabulary

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/ESSENTIAL QUESTIONS

Units of instruction address the CA Common Core Standards for Math, grade 6.

Unit 1: Ratios and Proportional Relationships (RP)

Chapter 1: Ratios and Rates; “How do you use equivalent rates in the real world?”

1. Factors and Multiples
2. Ratios
3. Rates
4. Ratio Tables
5. Graph Ratio Tables
6. Equivalent Ratios
7. Ratio and Rate Problems

Chapter 2: Fractions, Decimals, and Percents; “When is it better to use a fraction, a decimal or a percent?”

1. Decimals and Fractions
2. Percents and Fractions
3. Percents and Decimals
4. Percents Greater than 100% and Percents less than 1%.
5. Compare and Order Fractions, Decimals, and Percents.
6. Estimate with Percents
7. Percent of a Number
8. Solve Percent Problems

Unit 2: The Number System (NS)

Chapter 3: Compute with Multi-Digit Numbers; “How can estimating be helpful?”

1. Add and Subtract Decimals
2. Estimate Products
3. Multiply Decimals by Whole Numbers
4. Multiply Decimals by Decimals
5. Divide Multi-digit Numbers
6. Estimate Quotients
7. Divide Decimals by Whole Numbers
8. Divide Decimals by Decimals

Chapter 4: Multiply and Divide Fractions; “What does it mean to multiply and divide fractions?”

1. Estimate Products of Fractions
2. Multiply Fractions and Whole Numbers
3. Multiply Fractions
4. Multiply Mixed Numbers
5. Convert Measurement Units
6. Divide Whole Numbers by Fractions
7. Divide Fractions
8. Divide Mixed Numbers

Chapter 5: Integers and the Coordinate Plane; “How are integers and absolute value used in real-world situations?”

1. Integers and Graphing

2. Absolute Value
3. Compare and Order Integers
4. Terminating and Repeating Decimals
5. Compare and Order Rational Numbers
6. The Coordinate Plane
7. Graph on the Coordinate Plane

Unit 3: Expressions and Equations (EE)

Chapter 6: Expressions; “How is it helpful to write numbers in different ways?”

1. Powers and Exponents
2. Numerical Expressions
3. Algebra: Variables and Expressions
4. Algebra: Write Expressions
5. Algebra: Properties
6. The Distributive Property
7. Equivalent Expressions

Chapter 7: Equations; “How do you determine if two numbers or expressions are equal?”

1. Equations
2. Solve and Write Addition Equations
3. Solve and Write Subtraction Equations
4. Solve and Write Multiplication Equations
5. Solve and Write Division Equations

Chapter 8: Functions and Inequalities; “How are symbols for comparing useful?”

**Functions* are not a standard in 6th grade. In teaching the first four sections, very little emphasis should be placed on mastering functions – focus should be on multiple representations: tables, equations, graphs.

1. Function tables
2. Function Rules
3. Functions and Equations
4. Multiple Representations of Functions
5. Inequalities
6. Write and Graph Inequalities
7. Solve One-Step Inequalities

Unit 4: Geometry (G)

Chapter 9: Area; “How does measurement help you solve problems in everyday life?”

1. Area of Parallelograms
2. Area of Triangles
3. Area of trapezoids
4. Changes in Dimensions
5. Polygons on the Coordinate Plane
6. Area of Composite Figures

Chapter 10: Volume and Surface Area; “How is shape important when measuring a figure?”

1. Volume of Rectangular Prisms
2. Volume of Triangular Prisms
3. Surface Area of Rectangular Prisms
4. Surface Area of Triangular Prisms
5. Surface Area of Pyramids

Unit 5: Statistics and Probability (SP)

Chapter 11: Statistical Measures; “How are the mean, median, and mode helpful in describing data?”

1. Mean
2. Median and Mode
3. Measures of Variation
4. Mean Absolute Deviation
5. Appropriate Measures

Chapter 12: Statistical Displays; “Why is it important to carefully evaluate graphs?”

1. Line Plots
2. Histograms
3. Box Plots
4. Shape of Data distributions
5. Interpret Line Graphs
6. Select an Appropriate display

TEXTBOOKS AND RESOURCE MATERIALS:

California Math, Course 1; McGraw Hill, 2015. Supplemental materials for enrichment as determined by individual sites.

CONTENT STANDARDS TO BE ADDRESSED:

Ratios and Proportional Relationships (6.RP.1-3)

Understand ratio concepts and use ratio reasoning to solve problems.

The Number System (6.NS.1-8)

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.

Expressions and Equations (6.EE.1-9)

Apply and extend previous understandings of arithmetic to algebraic expressions.

Reason about and solve one-variable equations and inequalities.

Represent and analyze quantitative relationships between dependent and independent variables.

Geometry (6.G.1-4)

Solve real-world and mathematical problems involving area, surface area, and volume.

Statistics and Probability (6.SP.1-5)

Develop understanding of statistical variability.

Summarize and describe distributions.

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.

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