FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT

Course Outline
Transition to Algebra

Date: May 2004

Subject Area: Math

Proposed Grade Level(s): 9-12

Course Length: 1 Year

Grading: A-F

Number of Credits: 5/Semester

Prerequisites: None

BRIEF COURSE DESCRIPTION:

This course is designed for students who need to work on their math skills to prepare them for full year Algebra 1. Students will go through all the 6th, 7th, and 8th grade standards as described in the state standards texts.

GENERAL GOALS/PURPOSES:

This class is designed to allow students an opportunity to learn the math skills necessary for the next level of math. Teachers will use discovery activities, technology, and extended projects to help students understand the concepts of Algebra 1.

STUDENT READING COMPONENT:

Students will receive instruction on the effective use of their textbook. Algebra 1 includes many applications where effective reading and analysis are taught as part of the course. Also, projects will emphasize reading across the curriculum.

STUDENT WRITING/ORAL COMPONENT:

Students will have opportunities to express their understanding of concepts in writing as well as presenting work orally to the class. All written work will follow standard rules of English. Any research projects will follow MLA format, which has been distributed at all secondary sites.

Final Assessment:

Students will take a common final made up by the teachers teaching the class.

DETAILED UNITS OF INSTRUCTION:

- The first quarter/trimester includes basic arithmetic skills review (fractions, decimals, integers, percents,)
- Transition to Algebra needs to include in depth review of 6th & 7th grade standards covered on the CAHSEE.
- In addition to review of computational and pre-algebra skills, the following mathematics standards for Algebra 1 must be covered in this course.

  Algebra 1: 1 – 5, 10, 11, 15 –18, 25.3

<u>Please note</u>: (1) A chart of these standards and where they can be found in each school site's current Algebra 1 materials has been developed. (*2) Many of these standards will be included in the second year of the course, both as review topics and as expanded topics in full year Algebra I.*

Note: Algebra 1 is taught from a district-adopted text in middle school: McDougal Littell <u>Algebra 1, Concepts and Skills</u>. The high schools use a complementary version of the text for continuity.

Chapter 1 Connections to Algebra

1. Variables in Algebra
2. Exponents and Powers
3. Order of Operations
4. Equations and Inequalities
5. Translating Words into Mathematical Symbols/Introduction to problem solving
6. Tables and Graphs
7. Introduction to Functions

Chapter 2 Properties of Real Numbers

1. Real Number Line
2. Absolute Value
3. Computations with real numbers
4. Distributive Property
5. Combining Like Terms

Chapter 3 Solving Linear Equations

1. Solving one-step and multi-step equations
2. Solving equations with variables on both sides
3. Formulas
4. Ratios and Rates
5. Percents

Chapter 4 Graphing Linear Equations and Functions

1. The Coordinate Plane
2. Graphing horizontal and vertical lines
3. Graphing lines using intercepts
4. Slope
5. Graphing lines using slope intercept form
6. direct variation
7. Functions and Relations

Chapter 5 Writing Linear Equations

1. Slope intercept form
2. Point-slope form
3. Writing linear equations given two points
4. Standard form
5. Modeling with linear equations
6. Perpendicular lines

Chapter 6 Solving and Graphing Linear Inequalities

1. Solving one-step and multi-step linear inequalities
2. Solving compound inequalities involving "and" and "or"
3. Solving absolute value equations and inequalities
4. Graphing linear inequalities in two variables

6th and 7th grade standards review

Geometry Unit

During the school year, we will use many supplementary materials to reinforce the necessary skills for the students.

- Use formulas routinely for finding perimeter and area of basic 2-dimensional figures and surface area and volume of basic 3-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms and cylinders.
- Estimate and compute the area of more complex or irregular 2- and 3-dimensional figures by breaking the figures down into more basic figures.
- Compute the length of the perimeter, surface area of the faces, and the volume of a 3-dimensional object build from rectangular solids. Understand that when the lengths of all dimensions are multiplied by a scale factor, the surface area is multiplied by the square of the scale factor and the cube of the scale factor multiplies the volume.
- Relate the changes in measurement with a change of scale to the units used and to conversions between units.
- Understand and use coordinate graphs to plot simple figures, determine lengths and areas related to them and determine their image under translations and reflections
- Demonstrate an understanding of conditions that indicate two geometrical figures are congruent and what congruence means about the relationships between the sides and angles of the two figures.

Statistics and Probability

- Compute the range, mean, median, and mode of data sets
- Understand the meaning of, and be able to compute the minimum, the lower quartile, the median, the upper quartile, and the maximum of a data set.
- Know various ways to represent a data set including stem-and-leaf plots for two data sets.
- Identify claims based on statistical data and in simple cases, evaluate the validity of the claims.
- Represent all possible outcomes for events in an organized way and express the theoretical probability of each outcome. Includes compound events.
- Represent probabilities as ratios, proportions, decimals between 0 and 1, and percentages between 0 and 100 and verify that the probabilities computed are reasonable; know that if P is the probability of an event, 1 – P is the probability that event not occurring.
- Understand the difference between independent and dependent events.

THIS COURSE WILL PREPARE STUDENTS FOR THE CAHSEE AND/OR FCUSD EXIT EXAM IN:

District Year 1 final administered in June. Preparation for the Math and Algebra I section of the CAHSEE.

LAB FEE, IF REQUIRED:

None

SUBJECT AREA CONTENT STANDARDS TO BE ADDRESSED:

See “Detailed Units of Instruction”.

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 they’re 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.