High School Course Description SDC Algebra IA

Course Title: SDC Algebra IA
Curricular Area: Mathematics / Special Education
Course Number: SDC105/106
Length: One Year
Grade Level: 8-12
Prerequisites: IEP Placement
Meets a UC a-g Requirement: No
Meets NCAA Requirement: No

Meets High School Graduation Requirement for:
Mathematics / Algebra

Course Description
Algebra IA is part one of an algebra sequence designed to enable students to pass the .Math portion of the California High School Exit Examination and to provide them with the math and thinking skills necessary for the workplace. Through the study of math reasoning, number sense, algebra, and beginning geometry, students work to master basic mathematical and algebraic functions. In addition, students develop an understanding of symbolic language of mathematics and the sciences.

Alignment
This course is aligned to Algebra I Content Standards for California Public Schools and the California High School Exit Examination Mathematics Blueprints.

Instructional Materials

Required textbook(s)
Pace Maker, Algebra I, AGS Pearson 2007, ISBN 0-13-023-638-1

Supplemental Material
Student Workbook*: PM Algebra I*
CGP Course II

Exit Criteria

Activities	Percentage
Homework and Class Participation	40%
Tests and Quizzes	40%
Final Examination	20%
Total:	100%

Development Team
This Course of Study was created Spring 2009 by Fran Durdle (BHS) and Priya Morlock (CPS)

Pacing Guide for SDC Algebra IA

SEMESTER ONE

First Quarter		
Weeks	**Standards****	**Chapter(s)/Textbook**
1-3	Grade 7 AF 1.2 Number Sense	Review/Assess /Chap. 1 - *PM Algebra 1* Lesson 1.1.3 - *CGP Course two*
4-6	Grade 7 NS 1.2** Rational Numbers	Chapter 1 - Numbers for Algebra *PM Alg. 1* Chapter 2 - Tools for Algebra *PM Algebra 1* Chapter 2, 5 - *CGP Course Two*
7-9	Grade 7 AF 4.0** Linear Equations	Chapter 2: Tools for Algebra -*PM Algebra 1* Chapter 1, 4: - *CGP Course Two*

Second Quarter		
Weeks	**Standards****	**Chapter(s)/Textbook**
1-3	Grade 7 MG 2.0 Area, Perimeter, Volume	Chapter 2:14 - *PM Algebra 1* Chapter 8 - *PM Geometry* Chapter 3, 7 - *CGP Course Two*
4-6	Grade 7 AF 4.1** Two-step linear equations	Chap. 3: Solving Equations -*PM Algebra 1* Review Chap. 3, 7 - *CGP Course Two*
7-9	Grade 7 NS 1.7** Discounts, mark-up, etc.	Pgs. 61, 86, 88, 380 - *PM Algebra 1* Chapter 8: - *CGP Course Two*

SEMESTER TWO

Third Quarter		
Weeks	**Standards****	**Chapter(s)/Textbooks**
1-3	Grade 7 AF1.5—Represent quantitative relationships	Chap. 4: Functions - *PM Algebra 1* Review Chaps. 1,4 - *CGP Course Two*
4-6	Grade 7 AF 3.3** - Graphing linear equations	Chap. 5: Linear Equations - *PM Algebra 1* Chap. 2 review - *CGP Course Two*
7-9	Grade 7 MG 1.3** Measures expressed as rates	Chap. 5:11, pgs. 329, 352 – *PM Algebra 1* Review Chapter 4 - *CGP Course Two*

Fourth Quarter		
Weeks	**Standards****	**Unit/Chapter(s)**
1-3	Grade 7 AF 4.2**—Multi-step problems	Chap. 5: P. 329 *PM Algebra 1* Review Chapter 4 - *CGP Course Two*
4-6	Grade 7 AF 3.3** - Graph linear x & y intercept	Chapters 5 & 6 – *PM Algebra I* Review Chapter 4 - *CGP Course Two*
7-9	Grade 7 MG 3.3** - Graph simple figures, Pythagorean theorem	Chap. 13 (*PM Alg. 1*), Chap. 6 (*PM Geo.)* Chapter 2 - *CGP Course Two*

**"power standards" from CAHSEE Mathematics Blueprint

UNIT PLANS

1st Quarter

UNIT 1: Number Sense **Weeks: 1-3**

UNIT 2: Rational Numbers **Weeks: 4-6**

UNIT 3: Linear Equations **Weeks: 7-9**

2nd Quarter

UNIT 4: Area, Perimeter, Volume **Weeks: 1-3**

UNIT 5: 2-Step Linear Equations **Weeks: 4-6**

UNIT 6: Discounts, markups **Weeks: 7-9**

3rd Quarter

UNIT 7: Quantitative Relationships **Weeks: 1-3**

UNIT 8: Graphing Linear Equations **Weeks: 4-6**

UNIT 9: Rates **Weeks: 7-9**

4th Quarter

UNIT 10: Multi-step Problems **Weeks: 1-3**

UNIT 11: Slope Intercept **Weeks: 4-6**

UNIT 12: Pythagorean Theorem **Weeks: 7-9**

The following standards are used throughout the curriculum by including applications / word problems and requiring reasoning and justification on a consistent basis.

NS 1.2** Add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.
NS 1.5** Know that every rational number is either a terminating or a repeating decimal and be able to convert terminating Decimals into reduced fractions
NS 1.7** Solve problems that involve discounts, markups, commissions, and profit and compute simple and compound interest
AF 1.2 Use the correct order of operations to evaluate algebraic expressions
AF 1.5 Represent quantitative relationships graphically and interpret the meaning of a specific part of a graph in the situation Represented by the graph
AF 3.3** Graph linear functions, noting that the vertical change (change in y-value) per unit of horizontal change (change in x-value) is always the same and know that the ratio ("rise over run") is called the slope of the graph.
AF 4.0** Students solve simple linear equations and inequalities over the rational numbers
AF 4.1** Solve two-step linear equations and inequalities over the rational numbers, interpret the solution or solutions in the Context from which they arose, and verify the reasonableness of the results
AF 4.2** Solve multistep problems involving rate, average speed, distance, and time or a direct variation
MG 1.3** Use measures expressed as rates (e.g. speed, density) and measures expressed as products (e.g. person-days) to solve Problems; check the units of the solutions; and use dimensional analysis to check the reasonableness of the answer
MG 3.3** Know and understand the Pythagorean theorem and its converse and use it to find the length of the missing side of a right triangle and the lengths of other line segments and, in some situations, empirically verify the Pythagorean theorem by direct measurement
MR 2.1 Use estimation to verify the reasonableness of calculated results

Learning Experiences and Instruction:
Teachers utilize the Direct Interactive Instruction model to introduce new skills and concepts that are essential to the CAHSEE standards, then reinforce and develop those skills each quarter with the goal of bringing students to mastery by the end of the fourth quarter. All instruction will be based on the "I do, We do, You do" scaffolding model with an emphasis on individual differentiation as needed. Teachers will use a variety of the following:

- Inquiry-based learning
- Engaged reading opportunities
- Think-pair-share
- Reciprocal teaching
- Cloze reading & writing
- Guided reading & writing
- Cognitive modeling
- Questioning strategies
- Graphic organizers/concept attainment
- Student-led groups/ peer pairing
- Metacognitive learning: self-regulation, goal-setting, self-monitoring, and self-questioning

Support for English Language Learners:
SDAIE strategies
Flexible grouping
Peer pairing
Realia
Texts/materials in first language
Instructional Aide

Support for Special Education Students:
As this is an SDC class, it is designed to meet the needs of the class and of individuals. All students' IEP goals and accommodations will be addressed using a combination of the following:

- Instructional Aide
- Audio & visual aids
- Modified texts
- Flexible grouping
- Testing accommodations
- Tutoring (peer & teacher)
- Computer-Guided instruction

Stretching the Lesson for GATE Students:
Independent study supplemented with mentoring/tutoring
Depth & Complexity icons
Enriched materials and learning experiences