High School Course Description SDC Algebra IB

Course Title: SDC Algebra IB   **Curricular Area**: Mathematics / Special Education

Course Number: SDC2111/2112   **Length**: One Year

Grade Level: 8-12   **Prerequisites**: Algebra IA & IEP Placement

Meets a UC a-g Requirement: No   **Meets NCAA Requirement**: No

Meets High School Graduation Requirement for:
Mathematics / Algebra

Course Description
Algebra IB is part two of the 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 review of math reasoning, number sense, & algebra, and the study of geometry, students work to understand how to construct formal, logical arguments and proofs in geometric settings and problems.

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)
PM Algebra I, AGS Pearson 2007, ISBN 0-13-023-638-1

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

Grades for SDC English III will be cumulative over the two quarters. A progress report will be provided at weeks 9-10 and grades will continue to be computed until the semester end. At semester end, percentages for grades will be computed as follows:

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)

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SEMESTER ONE

First Quarter		
Weeks	**Standards****	**Unit/Chapter(s)**
1-2	Prior Learning (1A standards)	Review
3-6	Grade 7 AF 1.1 Variables & Appropriate Operations	Chapter 7 : Inequalities – *PM Algebra 1* Chapter 1,2,3,4 : *CGP Course Two*
7-9	Grade 7 AF 4.1** - Two-step linear equations	Chapter 8: Systems of Equations – *PM Algebra 1* Chapter 1,4 : *CGP Course Two*

Second Quarter		
Weeks	**Standards****	**Unit/Chapter(s)**
1-3	Grade 6 SDAP 1.1 – Mean, Median, Mode	Chapter 9: Data & Data Analysis – *PM Algebra 1*
4-6	Grade 7 SDAP 1.2 – 2 Numerical Variables & Scatter plots	Chapter 9: Date & Data Analysis, & -*PM Algebra 1* Chapter 6*: CGP Course Two*
7-9	Grade 7 MG 1.1; 1.3** - Weights, Capacities, Geometric Measures	Chapter 14: Rational Expressions & Equations – *PM Algebra 1* Review Chapter 4: *CGP Course Two*

SEMESTER TWO

Third Quarter		
Weeks	**Standards****	**Unit/Chapter(s)**
1-3	Grade 7 MG 3.2; 3.3**- Graph simple figures, Pythagorean theorem	Chap. 13.7 - *PM Algebra 1* Chap. 6: Right Triangles - *PM Geometry*
4-6	Grade 7 MG 2.2 - Area of Complex/irregular Figures	Chap. 8, 11: *PM Geometry* Chapters 3, 7: *CGP Course Two*
7-9	Grade 7 NS 1.3 - Convert Fractions to Decimals & Percents	P. 356 – *PM Algebra 1* Chapters 2, 8 - *CGP Course Two*

Fourth Quarter		
Weeks	**Standards****	**Unit/Chapter(s)**
1-3	Grade 7 SDAP 1.1 – Various Forms of Display	Chapter 15: Probability –*PM Algebra 1* *Chapter 6: CGP Course Two*
4-6	Grade 7 MR 1.1—Analyze Problems	Various Lessons: *Reasoning-PM Algebra 1* Various Lessons: *PM Geometry*
7-9	Grade 6 SDAP 3.3** -Probabilities & Ratios	Chapter 15: Probabilities and Ratios – *PM Algebra 1* Review Chapter 6: *CGP Course Two*

**"power standards" from CAHSEE Mathematics Blueprint

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UNIT PLANS

UNIT 1: Review	**Weeks: 1-2**
UNIT 2: Variables & Appropriate Operations	**Weeks: 3-6**
UNIT 3: Two-Step Linear Equations	**Weeks: 7-9**
UNIT 4: Mean, Median, Mode	**Weeks: 10-12**
UNIT 5: Numerical Variables & Scatter Plots	**Weeks: 13-15**
UNIT 6: Weights, Capacities, Geometric Measures	**Weeks: 16-18**
UNIT 7: Graphing, Pythagorean Theorem	**Weeks: 19-21**
UNIT 8: Area of Complex Figures	**Weeks: 22-24**
UNIT 9: Converting Fractions/Decimals/Percents	**Weeks: 25-27**
UNIT 10: Forms of Display	**Weeks: 28-30**
UNIT 11: Mathematical Reasoning	**Weeks: 31-33**
UNIT 12: Probabilities and Ratios	**Weeks: 34-36**

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

Grade 6 Standards:
SDAP 1.1** Compute the mean, median, and mode of data sets.
SDAP 3.3** 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 of an event not occurring.

Grade 7 Standards:
NS 1.3 Convert fractions to decimals and percents and use these representations in estimations, computations, and applications.
AF 1.1 Use variables and appropriate operations to write and expressions, an equations, an inequality, or a system of equations or inequalities that represents a verbal description (e.g. three less than a number, half as large as area A).
AF 4.1** Solve two-step linear equations and inequalities in one variable over the rational numbers, interpret the solution or solutions in the context from which they arose, and verify the reasonableness of the results.
MG 1.1 Compare weights, capacities, geometry measures, times, and temperatures within and between measurement systems (e.g. miles per hour and feet per second, cubic inches to cubic centimeters).
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 2.2   Estimate and compute the area of more complex or irregular two-dimensional figures by breaking the figures down into more basic geometric objects.
MG 3.2 Understand and use coordinate graphs to plot simple figures, determine lengths and areas related to them, and determine their image under translations and reflections
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 an the lengths of other line segments and, in some situations, empirically verify the Pythagorean theorem by direct measurement.
SDAP 1.1 Know various forms of display for data sets, including a stem-and-leaf plot or box-and-whisker plot; use the forms to display a single set of data or to compare two sets of data.
SDAP 1.2 Represent two numerical variables on a scatter plot and informally describe how the data points are distributed and any apparent relationship that exists between the two variables (e.g. between time spent on homework and grade level)
MR 3.3 Develop generalizations of the results obtained and the strategies used and apply them to new problem situations.

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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

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