



HIGH SCHOOL COURSE OUTLINE

Department	Mathematics			Course Title	Algebra 1-2 SDAIE		
Course Code	3011	Grade Level	9 -12	Course Length	2 semesters	Credits/Semester	5
Required for Graduation		Yes	Meets H.S. Grad Requirement		Yes	Elective Credit	
Prerequisites	A grade of “B” or better in previous mathematics course, ELL Levels 3 or 5 and/or at least a proficient score on the previous mathematics course CST						
Articulated with LBCC		No		Articulated with CSULB		No	
Meets UC “a-g” Requirement		Yes (c)		Meets NCAA Requirement		Yes	
Teacher Certification		BCLAD, BCC, CLAD, LDS, SB 1969 or SB 395					

COURSE DESCRIPTION:

Algebra SDAIE is designed for English Language Learners who are at the Intermediate and Early Advanced levels of oral, reading and writing in English. English Language Learners in this SDAIE course cover the same content and utilize the same basic textbook as their Fluent English Speaker counterparts. The course varies in the pacing, instructional methodology and supplemental materials used which are designed to provide depth vs. breadth of the content standards, more comprehensible input, and literacy development through the content area. Algebra is required for graduation from high school.

This course is an introduction to the language and applications of algebra, including development of the real number system, variables, mathematical expressions, linear equations, problem solving, inequalities, polynomials, special products and factoring, graphs, relations and functions, quadratic equations, rational and radical expressions, and basic statistics and probability. Algebra is required for graduation from high school.

GOALS: (Student needs the course is intended to meet)

Students will learn all of the California State Standards for Algebra. Symbolic reasoning and calculations with symbols are central in algebra. Through the study of algebra, the student will develop an understanding of the symbolic language of mathematics and the sciences. In addition, algebraic skills and concepts are developed and used in a wide variety of problem-solving situations.

Students communicate precisely about quantities, logical relationships, and unknown values through the use of signs, symbols, models, graphs, and mathematical vocabulary. Regular opportunities are provided for students to communicate through oral and written explanations of math concepts.

Students learn to apply mathematics to everyday life and develop an interest in pursuing advance studies in mathematics and in a wide array of mathematically related career choices.

CONTENT STANDARDS

- 1.0 Students identify and use the arithmetic properties of subsets of integers and rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable: (CST, PSAT)
- 2.0* Students understand and use such operations as taking the opposite, finding the reciprocal, taking a root, and raising to a fractional power. They understand and use the rules of exponents. (CAHSEE, CST, PSAT)
- 3.0 Students solve equations and inequalities involving absolute values. (CAHSEE, CST)
- 4.0* Students simplify expressions before solving linear equations and inequalities in one variable, such as $3(2x-5) + 4(x-2) = 12$. (CAHSEE, CST, PSAT)
- 5.0* Students solve multistep problems, including word problems, involving linear equations and linear inequalities in one variable and provide justification for each step. (CAHSEE, CST, PSAT)
- 6.0* Students graph a linear equation and compute the x - and y -intercepts (e.g., graph $2x + 6y = 4$). They are also able to sketch the region defined by linear inequality (e.g., they sketch the region defined by $2x + 6y < 4$). (CAHSEE, CST)
- 7.0* Students verify that a point lies on a line, given an equation of the line. Students are able to derive linear equations by using the point-slope formula. (CAHSEE, CST, PSAT)
- 8.0 Students understand the concepts of parallel lines and perpendicular lines and how those slopes are related. Students are able to find the equation of a line perpendicular to a given line that passes through a given point. (CAHSEE, CST, PSAT)
- 9.0* Students solve a system of two linear equations in two variables algebraically and are able to interpret the answer graphically. Students are able to solve a system of two linear inequalities in two variables and to sketch the solution sets. (CAHSEE, CST, PSAT)
- 10.0* Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques. (CAHSEE, CST, PSAT)
- 11.0 Students apply basic factoring techniques to second- and simple third-degree polynomials. These techniques include finding a common factor for all terms in a polynomial, recognizing the difference of two squares, and recognizing perfect squares of binomials. (CST, PSAT)
- 12.0* Students simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms. (CST)
- 13.0* Students add, subtract, multiply, and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems by using these techniques. (CST)
- 14.0* Students solve a quadratic equation by factoring or completing the square. (CST, PSAT)
- 15.0* Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems. (CAHSEE, CST, PSAT)
- 16.0 Students understand the concepts of a relation and a function, determine whether a given relation defines a function, and give pertinent information about given relations and functions. (CST, PSAT)
- 17.0 Students determine the domain of independent variables and the range of dependent variables defined by a graph, a set of ordered pairs, or a symbolic expression. (CST)
- 18.0 Students determine whether a relation defined by a graph, a set of ordered pairs, or a symbolic expression is a function and justify the conclusion. (CST)
- 19.0* Students know the quadratic formula and are familiar with its proof by completing the square. (CST)
- 20.0* Students use the quadratic formula to find the roots of a second-degree polynomial and to solve quadratic equations. (CST)
- 21.0* Students graph quadratic functions and know that their roots are the x -intercepts. (CST)
- 22.0 Students use the quadratic formula or factoring techniques or both to determine whether the graph of a quadratic function will intersect the x -axis in zero, one, or two points. (CST)
- 23.0* Students apply quadratic equations to physical problems, such as the motion of an object under the force of gravity. (CST)
- 24.0 Students use and know simple aspects of a logical argument: (CST, PSAT)
- 25.0 Students use properties of the number system to judge the validity of results, to justify each step of a procedure, and to prove or disprove statements: (CST, PSAT)

The * designates the key standards that comprise a minimum of 70% of the Content Standards Test.
CST – Standard assessed on the California Standards Test
CAHSEE – Standard assessed on the California High School Exit Exam
PSAT – Preliminary Scholastic Achievement Test

Academic Literacy in SDAIE Content-Area Classes for ELLs at Levels 3 and 5

The ELD Standards of reading, writing, listening and speaking describe the linguistic pathway that ELLs take to achieve academic literacy in English. SDAIE content area classes play an important role in developing and strengthening students' progress towards this goal. Students should be encouraged to expand their English skills, even though grammatical and vocabulary approximations will occur during this process.

When content-area information and materials have been made comprehensible through instruction in the SDAIE class, ELLs at each level will progress through the following phases of developing academic literacy in English. The students' degrees of literacy in their primary language will significantly affect the pace that students move through these levels.

ELL Level 3

Upon entering ELL Level 3, students are increasing their control of academic English proficiency about topics that have been explicitly taught to them and some topics that may be new to them. There will be wide gaps in vocabulary. ELLs progressing through this level will:

- Participate in group/class projects, discussions and presentations with simple sentences and complex sentences (with increasing accuracy and fluency when given modeling and constructive feedback)
- Use content area reading strategies (especially pre-reading, KWL, academic participation cards, anticipation guides, Reciprocal Teaching and Question/Answer Relationships) to analyze concepts from taught texts and other course reading materials. By the end of level 3, ELLs are able to comprehend most texts written at 4th grade level. Students continue to need extensive modeling and direct instruction, especially when encountering figurative language and sentences with numerous clauses.
- Respond to Curriculum Embedded Assessment prompts (read to them and clarified for them as needed) orally and with simple and complex sentence structures
- Use writing in a variety of ways such as, but not limited to, class note-taking, learning logs, interactive notebooks, response logs, and completing student handouts, homework, and class projects. Students continue to need extensive modeling and direct instruction, especially when writing at differing formality levels for a variety of audiences.
- Understand the need for using test-taking strategies (using taught vocabulary) on the required district/state assessments, such as, End of Course Exams (with alternate presentation and response), and STAR.

ELL Level 5

Upon entering ELL Level 5, students demonstrate a significant gap between their oral English fluency (high) and their English literacy proficiency (low), even though they have had many years of instruction in English. ELLs progressing through this level will:

- Participate in group/class projects, discussions and presentations with sentences that demonstrate conversational English proficiency
- Need to be taught how to use content area reading strategies (especially pre-reading, KWL, academic participation cards, anticipation guides, Reciprocal Teaching and Question/Answer Relationships) to analyze concepts from taught texts and other course reading materials. Students need extensive modeling, direct instruction, and oral discussions before, during and after reading.
- Respond to Curriculum Embedded Assessment prompts (clarified orally to them as needed). Students need extensive modeling, direct instruction, and oral discussions to move them beyond writing sentences that reflect only conversational English.
- Use writing in a variety of ways such as, but not limited to, class note-taking, learning logs, interactive notebooks, response logs, and completing student handouts, homework, and class projects. Students continue to need extensive modeling and direct instruction, especially when writing at differing formality levels for a variety of audiences.
- Understand the need for using test-taking strategies on the required district/state assessments, such as, End of Course Exams, and STAR.

STATE PERFORMANCE STANDARDS

The California State Board of Education has identified the following performance levels for the California Content Standards Test in Algebra. The objective of Long Beach Unified School District is to have all students achieve at or above the Proficient Performance Standard (Level). The table indicates the Scaled Score (SS) and estimated percent correct on the Content Standards Test.

	Far Below Basic	Below Basic	Basic	Proficient	Advanced Proficient
%	0% - 27%	28% - 41%	42% - 56%	57% - 78%	79% - 100%
# Correct	Less than 17	18 – 25	26 – 35	36 – 49	50 – 65

DISTRICT PERFORMANCE STANDARDS

The Long Beach Unified School District has common assessments and key assignments that are required for Algebra. The Performance Standard Criteria is shown in the table below. The goal is to have all students achieve at or above the Proficient Level and receive a C or better in the course.

Mathematics Performance Standard Criteria

Assignments	Far Below Basic (FBB)	Below Basic (BB)	Basic (B)	Proficient (P)	Advanced Proficient (AP)
Key Assignments: LBUSD practice exams for quarter 1, semester 1, quarter 3, and EOC	The student completes at least 25%; not all work is shown.	The student completes at least 50%; not all work is shown.	The student completes 65% - 79% showing all work.	The student completes 80% - 89% showing all work.	The student completes at least 90% showing all work.
Assessments	FBB	BB	B	P	AP
LBUSD Quarter 1 and Quarter 3 Exams	0% - 27%	28% - 41%	42% - 56%	57% - 78%	79% - 100%
Semester 1 Exam and End-Of-Course Exam					

OUTLINE OF CONTENT AND RECOMMENDED TIME ALLOTMENT:

Content sequencing and time allocations are only suggestions and may be adjusted to suit school site curriculum plans and student needs.

Symbols used in this document:

- # - # Refers to the Chapter and Section in the text: Burger, Edward B., et al. Holt California Algebra 1. Texas: Holt, Rinehart and Winston, 2008.
- () Indicates the number on the California Mathematics Content Standards for Algebra I

Basic Operations on the Rational Number System

California Content Standards		Adopted Textbook Correlation	Assessments <u>Algebra Assessment Portfolio Workbook</u>	Key Vocabulary and Recommended Aids	Time
Use rational number operations, apply order of operations, and evaluate expressions by substitution.	Add, subtract, multiply and divide integers and rational numbers (1.0)	1-2, 1-3	Pages 63, 64, 71, 72, 73	Key Vocabulary: Additive inverse Algebraic expression Analyze data Bimodal range Central tendency	2.5 Weeks
	Apply order of operations (1.0)	1 -7	Pages 63, 64	Base Difference Evaluate Exponent Grouping symbols Integers Less than More than Multiplicative inverse Power Product Quotient Rational Real numbers Reciprocal Set of data Substitute Sum Twice Variable Verbal expression Visuals & Demos Algebra Tiles Algeblocks Color Tiles Fraction Strips Fraction Circles Factor Trees Graph Paper Number Lines Two Color Chips Walk Number Lines	

* Key standards (*Mathematics Framework for California Public Schools*) comprise a minimum of 70% of the California Standards Test.
 CST Standard assessed on the California Standards Test
 CAHSEE Standard assessed on the California High School Exit Exam

Identify and Apply Properties of Number Systems to Algebra

California Content Standards		Adopted Textbook Correlation	Assessments <u>Algebra</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary and Recommended Aids	Time
Apply and recognize associative, commutative, and distributive properties	Apply commutative and associative properties (1.0) (25.0)	1 - 6	Pages 3, 8, 70	Key Vocabulary: Additive identity Additive inverse Associative Coefficient Commutative Distributive Equivalent expression Evaluate Inverse Identity Multiplicative identity Multiplicative inverse Multiplicative property of zero Visuals & Demos: Algebra Tiles Algeblocks Number Lines	2.5 Weeks
	Recognize and apply the distributive property (1.0) (25.0)	1 - 6			
	Apply identities and inverse properties (1.0) (25.0)	1 - 2 to 1 - 4			
	Apply absolute value and solve absolute value equations (3.0)	1 - 2 2 - 7	Pages 46, 84		

Solve Linear Equations

California Content Standards		Adopted Textbook Correlation	Assessments <u>Algebra</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary And Recommended Aids	Time
Solve equations for a given variable, using the four properties of equality, including	Use set notation to express solution sets	2 - 1		Key Vocabulary: Element Equation Inequality Intersection	4.5 Weeks
real world problems, and express solutions in set notation .	Use addition, subtraction, multiplication and division properties to solve equations (4.0) (5.0)	2 - 1 to 2 - 3	Pages 2, 5, 9, 11, 77, 84	Member Null set Replacement set Set-builder notation Solution set Union Coefficient Consecutive integers Literal equation Solve for a variable Mixture Principal Profit Rate Boundary line Compound inequality Domain Half plane Inequality Intersection / union Is greater than Is less than Range Replacement set	
	Solve for a given variable (4.0) (5.0)	2 - 6	Pages 10, 30		
	Apply algebraic methods to solve real word problems such as rate, work, and percent problems (5.0, 15.0)	2 - 3 to 2 - 6	Pages 8, 9, 10, 13	Visual & Demos: Algebra Tiles Algeblocks	

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 CAHSEE Standard assessed on the California High School Exit Exam

Graph Linear Equations

California Content Standards		Adopted Textbook Correlation	Assessments Algebra Assessment Portfolio Workbook	Key Vocabulary And Recommended Aids	Time
Graph numbers and sets of numbers, linear equations, understand the concepts of relation, function, domain and range.	Graph numbers and sets of numbers on a number line	1 – 2 3 – 1 to 3 - 4	Pages 46, 101, 102	Key Vocabulary: Real number line Real number Whole number Positive number Negative number Integer Opposite number Absolute value Graph Coordinate Domain/range Equation in standard form Solution X- and y-intercepts Slope-intercept form Slope Linear Function	3 Weeks
	Graph linear equations by point plotting (6.0)	5 – 1	Pages 79, 81, 87		
	Graph linear equations by using slope-intercept method and the intercept-intercept method (6.0)	5 – 2, 5 - 5	Pages 79, 80		
	Understand the concept of a relation and a function (16.0) (18.0)	4 - 2	Page 33		
	Find the range and domain of a function (17.0)	4 - 2	Pages 12, 13, 34, 35		
Find slope from a graph, given two points, find equations of lines in standard form given two points or slope and y-intercept, write equations of parallel and perpendicular lines through a given point, and fit a line to data.	Find the slope of a line from the graph (7.0)	5 - 3	Pages 4, 10	Slope Rise Run Parallel Perpendicular Slope-intercept form of a line Point-slope form Standard form of a line Opposite Reciprocal Scatter plot Positive and Negative correlation Line of best fit Visuals & Demos: Number Lines Coordinate Plane Graph Aerobics	3 Weeks
	Find the slope of a line given two points (8.0)	5 - 3	Pages 4, 10, 81, 82		
	Find the equation of a line in Standard Form given the slope and the y-intercept (7.0)	5 - 5	Pages 4, 81, 82		
	Find the equation of a line in Standard Form given two points (8.0)	5 - 6	Pages 5, 11, 82		
	Find the equation of a line in Standard Form parallel or perpendicular to a given line through a given point (8.0)	5 - 7	Pages 5, 81, 82		

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 CAHSEE Standard assessed on the California High School Exit Exam

Solve and Graph Linear Inequalities

California Content Standards		Adopted Textbook Correlation	Assessments <u>Algebra</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary And Recommended Aids	Time
Solve inequalities for a given variable, using the four properties of equality and inequality, including real world problems, and express solutions in set notation	Solve linear inequalities (6.0)	3 - 1 to 3 - 6 6 - 6	Pages 4, 5, 11, 12, 101, 102	Key Vocabulary: Inequality Intersection Union Compound inequality Domain Half plane Inequality Intersection / union Is greater than Is less than Range Replacement set Visual & Demos: Number Lines Coordinate Plane Graph Aerobics	4.5 Weeks
	Solve absolute value inequalities (3.0)	3 - 7	Page 103		
	Graph linear inequalities (6.0)	3 - 1 to 3 - 7	Pages 6, 11, 45		

Solve Systems of Linear Equations and Inequalities

Topics	California State Standards	Adopted Textbook Correlation	Assessments <u>Algebra</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary And Recommended Aids	Time
Solve systems of linear equations in two variables by graphing, substitution, and linear combination, and solve systems of linear inequalities.	Solve using the graphing method (9.0)	6 - 1	Pages 83, 86	Key Vocabulary: Systems of equations Intersecting lines Parallel lines Linear combination Substitution Visuals & Demos: Graph Paper	2
	Solve using the elimination or linear combination method (9.0)	6 - 3	Pages 5, 11, 83		
	Solve using the substitution method (9.0)	6 - 2	Pages 5, 12, 83		
	Solving systems of inequalities (9.0)	6 - 7	Pages 104, 105		

Perform Basic Operations on Polynomials

	California Content Standards	Adopted Textbook Correlation	Assessments <u>Algebra Assessment Portfolio Workbook</u>	Key Vocabulary and Recommended Aids	Time
Apply exponent rules, and use scientific notation. Add, subtract, and multiply polynomials	Apply rules of positive and negative exponents (2.0)	7 - 1, 7 - 3 to 7 - 5	Pages 1, 2, 3, 8, 12, 54, 55, 91, 92	Key Vocabulary: Polynomial Binomial Constants Difference of squares	2.5 Weeks
	Use scientific notation to solve problems	7 - 2			
	Add and subtract polynomials by combining similar terms (10.0)	7 - 6, 7 - 7	1, 9, 91	Power of a monomial Power of power Product of powers	
	Multiply polynomials (10.0)	7 - 8, 7 - 9	Pages 1, 2, 3, 12, 36, 37, 53	Visuals & Demos: Algebra Tiles Algeblocks	

Factor Polynomials

	California Content Standards	Adopted Textbook Correlation	Assessments <u>Algebra Assessment Portfolio Workbook</u>	Key Vocabulary And Recommended Aids	Time
Factor trinomials completely using the greatest common factor and other factoring patterns	Factor using the greatest common factor (11.0)	8 - 1, 8 - 2	Pages 1, 9, 93	Key Vocabulary: Composite Distributive property Factor Greatest common factor	2 Weeks
	Factor trinomials (11.0)	8 - 3, 8 - 4	Pages 3, 12, 93	Prime Difference of squares Perfect square Zero product property Quadratic equation	
	Factor completely by applying several different factor patterns (11.0)	8 - 5, 8 - 6	Pages 58, 93	Visuals & Demos: Factor Puzzles Factor Trees Color Tiles	

Solve and Graph Quadratics

California Content Standards		Adopted Textbook Correlation	Assessments Algebra Assessment Portfolio Workbook	Key Vocabulary And Recommended Aids	Time
Solve quadratic equations by factoring and using the quadratic formula. Graph quadratic expressions by point plotting, recognize the graph as a parabola, and recognize the x-intercepts as roots; apply the quadratic formula to physical problems; solve quadratic equations by completing the square; use the discriminant to determine the number of x-intercepts and solutions of a quadratic equation.	Solve quadratic equations by factoring (14.0)	9 - 5	Page 3 - 5, 13, 112, 113	Key Vocabulary: Zero product property Factoring Standard form of a quadratic equation	5 weeks
	Solve quadratic equations by using the quadratic formula (20.0)	9 - 8	Pages 13, 112, 113	Integral roots Quadratic formula Discriminant Roots, solutions, x-intercepts, zeroes	
	Graph quadratic expressions by point plotting, recognize the graph as a parabola and the x-intercepts as roots (20.0), (21.0), (22.0)	9 – 2 to 9 - 4	Pages 2, 112 -114	Parabola Vertex Maximum Minimum Axis of symmetry	
	Apply quadratic solutions to maximum, minimum problems	9 – 1 to 9 - 5		Axis of symmetry Minimum Maximum Quadratic equation Parabola	
	Apply the quadratic formula to physical problems(19.0), (23.0)	9 – 1 to 9 - 5	Pages 112, 113	Hypotenuse Leg Pythagorean theorem	
	Apply the Pythagorean Theorem And use the distance formula. (23.0)	9 - 6	Pages 4, 9, 13, 116	Visuals & Demos: Graph Aerobics Graph Paper	
	Solve quadratic equations by completing the square (14.0)	9 - 7	Page 59		
	Determine the number of x-intercepts, roots or solutions by using the discriminant of the quadratic equation	9 - 9			

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 CST Standard assessed on the California Standards Test
 CAHSEE Standard assessed on the California High School Exit Exam

Perform the Basic Operations on Algebraic Fractions

California Content Standards		Adopted Textbook Correlation	Assessments <u>Algebra</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary And Recommended Aids	Time
Add, subtract, multiply and divide algebraic expressions and simplify them in lowest form	Express fractions in lowest terms (12.0)	10 - 2	Pages 14, 94, 95	Key Vocabulary: Common factors Denominator Excluded values GCF Numerator Rational expression Simplest form Common denominator Dividend Divisor Fraction bar LCM (least common multiple) Least common denominator Product Quotient Unlike denominator Rational equations Extremes Means Proportions Visuals & Demos: Algebra Tiles Coins Dice Spinners	2.5 Weeks
	Add, subtract, multiply and divide algebraic expressions and simplify complex fractions (13.0)	10 – 2 to 10 - 5	Pages 5, 6, 38		
	Divide polynomials	10 - 6			
Solve rational equations	Solve rational equations (including proportions) (15.0)	10 – 2, 10 - 7	Pages 4, 9, 40, 96		
	Apply algebra techniques to solve rate, work and mixture problems	10 - 8			

Perform Basic Operations with Radicals and Solve Equations

California Content Standards		Adopted Textbook Correlation	Assessments <u>Algebra</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary And Recommended Aids	Time
Work with algebraic expressions containing real numbers. Find square roots of real numbers; simplify, multiply, divide, add, and subtract radicals and solve equations containing radicals. apply the	Find the square root of a real number (2.0)	11 - 1	Page 8	Key Vocabulary: Square root Perfect square Radical sign Principal square root Negative square root Irrational number Radicand Simplest radical form Visuals & Demos Product property Quotient property Like radicals Radical expression Radical equation Extraneous roots Visuals & Demos: Graph Paper	2 Weeks
	Simplify, multiply, divide, add, and subtract radicals (1.0) (2.0)	11 – 2 to 11 - 4	Pages 3, 6, 8, 41-44		
	Solve equations containing radicals	11 – 1, 11 - 5	Pages 6, 109 – 111		

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APPLICATION OF COURSE CONTENT

Career Connection:

Related Major Skills & Characteristics - Problem Solving , Organizational Skills, Numerical Computation, Ability to Analyze & Interpret Data, Critical Thinking, Computer Literacy, Logical Thinking, Team Skills Efficient, Systemizing Skills, Advanced Quantitative Skills, Testing Skills

Related Career Titles – Students who major in mathematics will be prepared for any of the following careers.

*Accountant *Contract Administrator *Information Scientist *Actuary *Cost Estimator/Analyst *Inventory Control Specialist *Aerospace Engineer *Cryptographer/Cryptologist *Investment Banker *Air Traffic Controller *Data Control Administrator *ISO 2000 Specialist *Applications Programmer *Data Processing Manager *Market Research Analyst *Applied Science Technologist *Database Manager
*Mathematician *Artificial Intelligence Programmer *Demographer *Media Buyer *Astronomer
*Econometrician *Meteorologist *Banking/Credit/ Investment Mgr *Economist *Mortgage Researcher
*Biometrician/ Biostatistician *EDP Auditor *Network Programmer *Commodity Manager *Employee Relations Specialist *Numerical Analyst *Compensation/Benefits Administrator *Engineer *Operations Research Analyst *Computer Consultant *Engineering Lab Technician *Physicist *Computer Engineer
*Environmental Technologist *Pollution Meteorologist *Computer Facilities Mgr *Estate Planner
*Production Manager *Computer Installation *External Auditor *Production Support Specialist *Computer Marketing/Sales Rep *Financial Auditor *Psychometrician *Computer Programmer *Financial Consultant
*Public Health Statistician *Computer Scientist *Financial Manager *Purchasing/Contract Agent *Computer-Aided Design Tech. *Hydro Geologist *Quality Assurance Analyst *Consumer Loan/Credit Officer
*Hydrologist *Rate Analyst *Cartographer *Software Engineer *Teacher: Science/Math/Computers *Research Analyst *Software Support Specialist *Technical Support Rep. *Risk & Insurance Specialist *Statistician
*Technical Writer *Risk Analyst *Systems Analyst *Transportation Planner *Robotics Programmer *Systems Engineer *Treasury Management Specialist *Satellite Communications Specialist *Systems Programmer
*Underwriter *Software Development Specialist *Urban Planner *Value Engineer *Weight Analyst

Service Learning – Students who are Advanced Proficient on the Content Standards Tests or those who are earning an A in the course, can participate in after school tutoring programs to assist other students in learning mathematics. All hours can be credited towards the Service Learning requirement.

METHODS: A variety of instructional strategies will be utilized to accommodate all learning styles including, but not limited to:

Lesson Design & Delivery: Teachers will incorporate these components of lesson design during direct instruction and inquiry activities. The order of components is flexible, depending on the teacher's vision for the individual lesson. For instance, the objective and purpose, while present in the teacher's lesson plan, are not made known to the students at the beginning of an inquiry lesson.

<p>Essential Elements of Effective Instruction Model for Lesson Design Using Task Analysis</p>	<p>Anticipatory Set Objective Standard Reference Purpose Input Modeling Check for Understanding Guided Practice Closure Independent Practice</p>
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Some components may occur once in a lesson, but others will recur many times. Checking for understanding occurs continually; input, modeling, guided practice and closure may occur several times. There may even be more than one anticipatory set when more than one content piece is introduced.

Active Participation: Teachers will incorporate the principles of active participation and specific strategies to ensure consistent, simultaneous involvement of the minds of all learners in the classroom. Teachers should include both covert and overt active participation strategies, incorporating cooperative learning structures and brain research. Some of the possible active participation strategies include:

COVERT	OVERT (Oral)	OVERT (Written)	OVERT (Gestures)
• Recall	• Pair/Share	• Restate in Journals / Notes	• Hand Signals
• Imagine	• Idea Wave	• Response Boards	• Model with Manipulatives
• Observe	• Choral Response	• Graphic Organizers	• Stand up/ Sit down
• Consider	• Give One, Get One	• Folded Paper	• Point to Examples
	• "Foggiest" point	• Ticket Out of Class	
	• Socratic Seminar		
	• Cooperative Discussion Groups (i.e. Talking Chips, Gambit Chips)		

Literacy and Differentiation Strategies

Learning styles and learning challenges of your students may be addressed by implementing combinations of the following:

<u>Reading Strategies in Mathematics</u>	<u>SDAIE Strategies for English Learners</u>	<u>Differentiation for Advanced Learners</u>
<ul style="list-style-type: none"> ▪ Learning Logs ▪ Pre-teaching ▪ Vocabulary ▪ Pre-reading ▪ Text Structures ▪ Trail Markers ▪ Reciprocal Teaching ▪ Functional Text ▪ Anticipation Guide 	<ul style="list-style-type: none"> ▪ Tapping/Building Prior Knowledge (Graphic Organizers, Schema) ▪ Grouping Strategies ▪ Multiple Intelligences ▪ Adapt the Text ▪ Interactive Learning (Manipulatives, Visuals) ▪ Acquisition Levels ▪ Language Sensitivity ▪ Lower the Affective Filter (including Processing Time) ▪ Home/School Connection (including Cultural Aspects) 	<ul style="list-style-type: none"> ▪ Curriculum Compacting ▪ Tiered Assignments ▪ Flexible Grouping ▪ Acceleration ▪ Depth and Complexity ▪ Independent Study

MATERIALS USED IN TEACHING THE COURSE: In addition to the basic text (***mandatory information – Title, Author, Copyright Date and Publisher***), a variety of instructional tools will be used to meet the needs of all students

Basic Text:

Holt California Algebra 1, Burger, Edward B., et. Al, 2008; Holt, Rinehart and Winston

Supplemental materials:

- Assessment Portfolio Student Workbooks
- Algebra Power Video for Integers
- Holt Algebra Focus on California Standards: Intervention Workbook
- Holt Algebra Homework and Practice Workbook
- Holt Algebra Know-It Notebook
- Holt Algebra Review for Mastery Workbook
- Holt Algebra Spanish Focus on California Standards: Intervention
- Holt Algebra Spanish Focus on California Standards: Intervention Workbook
- Holt Algebra Spanish Homework and Practice Workbook
- Holt Algebra Spanish Know-It Notebook
- Holt Algebra Spanish Review for Mastery Workbook

Support for English Language Learners:

- Hands on activities and projects
(Algeblocks, Hands on Equations or Algebra Tiles available from ETA/Cuisenaire)
- Supplemental audio/visual content materials
- Computer resources available through software and the Internet (Larsons Algebra I by Great Source)
- Posters and models

Related Career Resources

- There are many web sites that will help with career selection such as Eguidance.com, BRIDGES.com, and icouldbe.org. The software package COIN JR also has career information. Video tapes such as the Futures with Jamie Escalante - School to Career shows how math is used in various careers (FASE productions 800-404-FASE). Other videos are Career Futures. Call the Career/Tech Ed Office (562-989-7872 x 291) for more information on careers.

EVALUATION: Student achievement in this course will be measured using multiple assessment tools including but not limited to chapter tests, cumulative tests (quarter tests, semester 1 test, and End-Of-Course Exam), quizzes, homework, classwork, notebooks, and projects.

Textbook	Diagnose	Monitor	Evaluate
District Developed Assessments	Practice EOC Exam from previous math course	Practice Exams for Quarter 1, Quarter 2 or Semester 1, Quarter 3, and End-of-Course	Quarter 1 and 3 test Semester 1 test End-Of-Course Exam
Holt Algebra 1	Are You Ready? Strategies for Success	Warm Up Questioning Strategies Check It Out Think and Discuss Write About It Journal Spiral Standards Review College Entrance Exam Practice	Lesson Quiz Alternative Assessment Ready To Go On? Chapter Test Mastering the Standards Cumulative Assessment Concept Connection

Scoring Guide for Written Response/Projects

Score	Description
4	The student response thoroughly accomplishes the task. <ul style="list-style-type: none"> • Shows thorough understanding and use of the central mathematical ideas(s) • Includes appropriate and accurate mathematical computations • Presents mathematical knowledge and ideas clearly and skillfully, using combinations of mathematical symbols and/or visual means as supporting evidence
3	The student response substantially accomplishes the task. <ul style="list-style-type: none"> • Shows an essential grasp of the central mathematical idea(s) • Includes appropriate and generally correct mathematical computations • Presents mathematical knowledge and ideas clearly with supporting evidence
2	The student response partially accomplishes the task. <ul style="list-style-type: none"> • Shows a limited grasp of the central mathematical ideas(s) • May include incomplete and/or misdirected mathematical computations • Presents mathematical knowledge and ideas in an unclear manner or without supporting evidence
1	The student response makes little or no progress toward accomplishing the task. <ul style="list-style-type: none"> • Shows little or no grasp of the central mathematical idea(s) • Includes mathematical computations that are incorrect or inappropriate • Presents mathematical knowledge and ideas in a barely (if at all) comprehensible manner

Grading Policy: A common grading policy ensures consistency between schools and classrooms across the district.

Suggested Percent of Grade

Classwork/Homework (10%)	15% - 20%
Notes/Projects	5%
Chapter Tests	35% - 40%
Quizzes	25% - 30%
Cumulative Tests/End-Of-Course Exam	10% - 15%

Standard Grading Scale

A =	90% - 100%
B =	80% - 89%
C =	70% - 79%
D =	60% - 69%
F =	Below 60%

Submitted by: Becky Afghani

School/Office: Math Office

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