



### HIGH SCHOOL COURSE OUTLINE

|                                   |                                                                                          |                    |                                    |                               |                |                         |   |
|-----------------------------------|------------------------------------------------------------------------------------------|--------------------|------------------------------------|-------------------------------|----------------|-------------------------|---|
| <b>Department</b>                 | Mathematics                                                                              |                    |                                    | <b>Course Title</b>           | Algebra AB-SDC |                         |   |
| <b>Course Code</b>                | 5741                                                                                     | <b>Grade Level</b> | 9 -12                              | <b>Course Length</b>          | 2 semesters    | <b>Credits/Semester</b> | 5 |
| <b>Required for Graduation</b>    |                                                                                          | Yes                | <b>Meets H.S. Grad Requirement</b> |                               | Yes            | <b>Elective Credit</b>  |   |
| <b>Prerequisites</b>              | Current placement in a Special Day Class (SDC) / Special Education program based on IEP. |                    |                                    |                               |                |                         |   |
| <b>Articulated with LBCC</b>      |                                                                                          | No                 |                                    | <b>Articulated with CSULB</b> |                | No                      |   |
| <b>Meets UC “a-g” Requirement</b> |                                                                                          | Yes ( c )          |                                    | <b>Meets NCAA Requirement</b> |                | Yes                     |   |

*\*\*This course fulfills one year of the mathematics graduation requirement. However, both years of the sequence (Algebra AB and Algebra CD) must be completed to fulfill the Algebra graduation requirement and the “a-g” requirement.*

### COURSE DESCRIPTION

This year-long course is the first half of the Algebra 1-2 course. It provides an introduction to the language and applications of algebra, including development of the real number system, variables, mathematical expressions, linear equations, problem solving and inequalities. Students must complete the sequence of Algebra CD to receive credit for the Algebra 1-2 course.

Algebra AB SDC mathematics is designed specifically for the needs of students with mild/moderate disabilities who are at the beginning, early, and intermediate levels of listening, speaking, reading, and writing proficiency. Students in this course cover the essential content and utilize the same basic textbook as their general education counterparts supplemented with content-parallel materials at a simplified reading level. Additionally, primary language materials for ELL students will be provided, when available and as needed, to facilitate the preview and review of essential content. The course delivery varies in pacing, instructional methodology, and supplemental materials. It is designed to provide depth versus breadth of the content standards, and provide more modified content, comprehensible input, primary language support, and literacy development in the content area.

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

Standards taught in this course will be selected from 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.

## Academic Literacy in SDC Content-Area Classes

Completion of content courses is a District requirement for students in Special Day Classes to receive a high school diploma. It is assumed that students enrolled in this course will have varied literacy needs. Therefore, small group instruction according to literacy level is recommended.

The following are stages of literacy development and instructional components that will help teachers determine the appropriate pathway for developing literacy. The students' degrees of literacy will significantly affect the pace that students move through these phases.

### ***Emergent (Kinder- 2<sup>nd</sup> grade literacy level)***

Students have beginning literacy skills.

A student who exhibits some of the following behaviors may be considered an emergent reader:

- decoding cvc, cvvc, cvce words
- reads and writes 0-200 sight words
- answers basic, literal comprehension questions (i.e, who, where)
- writes using inventive or phonetic spelling, basic sight words
- writes using simple sentences
- begins most sentences with the same pattern (I..., My dog...)
- uses few adjectives
- writing is off topic or strays

Students progressing through this level will:

- participate in modified group/class projects, discussions and oral presentations with non-verbal responses (e.g., gestures, drawings, graphic organizers) and/or single words or phrases with assistance (e.g., word walls, language structure walls).
- begin to participate orally in some content area reading strategies (especially pre-reading, KWL, and anticipation guides presented orally), with single words or phrases to analyze concepts from explicitly taught texts and other course reading materials.
- respond to Curriculum Embedded Assessment prompts (read to them and clarified for them) non-verbally (e.g., graphic organizers with drawings) and/or orally with single words or phrases.
- begin to use the alphabet to write in teacher-guided learning logs, selected homework and interactive notebooks, and to organize and record expository information on pictures, lists, charts and tables using single words or phrases.
- understand the need for using modified test-taking strategies (using previously taught vocabulary) on the required district/state assessments, such as, End of Course Exams (with alternate presentation and response), and STAR.

### **Early (2<sup>nd</sup>-3<sup>rd</sup> grade literacy level)**

Students have little or no academic proficiency and varying levels of academic literacy skills and concepts.

A student who exhibits some of the following behaviors may be considered an early reader:

- reads cvc, cvvc, cvce words
- decodes blends, digraphs, multisyllabic words
- reads and writes 200-300 sight words
- answers literal comprehension questions (i.e., why, how) and is beginning to consciously use comprehension strategies (predicting, rereading, summarizing, etc.)
- writes using correct cvc, cvvc, cvce spelling, sight words, attempts multi-syllabic words

- writes using simple sentences and attempts some complex sentences
- is beginning to use descriptive language
- writing is simple, on topic

Students progressing through this level will:

- participate in group/class projects, discussions and presentations with non-verbal responses (e.g., gestures, drawings, graphic organizers, role-playing) and/or oral or written single words, phrases and simple sentences with assistance (i.e., using the academic participation cards).
- participate orally in some content area reading strategies (especially pre-reading, KWL, academic participation cards, anticipation guides) or write using single words, phrases and/or simple sentences to analyze concepts from texts and other course reading materials.
- respond to Curriculum Embedded Assessment prompts (read to them and clarified for them) non-verbally (e.g., graphic organizers with drawings) and/or orally with single words, phrases and simple sentences in an outline format.
- use writing in a variety of ways such as, but not limited to, guided class note-taking, learning logs, interactive notebooks, representing information on pictures, lists, charts and tables using single words, phrases or simple sentences, and completing student handouts, selected homework, and modified class projects.
- 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.

**Intermediate (4<sup>th</sup> and 5<sup>th</sup> grade literacy level)**

Students have some academic proficiency about topics that have been explicitly taught to them.

A student who exhibits some of the following behaviors may be considered an intermediate reader:

- reads cvc, cvvc, cvce words, blends, and diagraphs
- decodes multisyllabic words
- reads and writes 400-500 sight words
- answers literal and inferential comprehension questions and consciously uses comprehension strategies (predicting, rereading, summarizing, etc.)
- writes using correct cvc, cvvc, cvce spelling, sight words, most multi-syllabic words
- writes using both simple and complex sentences
- uses descriptive language
- writing is on topic and interesting

Students progressing through this level will:

- participate in group/class projects, discussions and presentations with simple sentences and many attempts at more complex sentences.
- 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.
- respond to Curriculum Embedded Assessment prompts (read to them and clarified for them) orally and with simple and some complex sentence structures in at least three paragraphs.
- 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.
- 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.

\*\*Should you have a student who is functioning higher than the above levels (i.e., fluent), it is suggested that you hold an IEP and discuss alternate options such as RSP placement or mainstreaming for content areas instruction.

## **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

## 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:<br>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<br><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                                    | <b>Key Vocabulary:</b><br>Additive inverse<br>Algebraic expression<br>Analyze data<br>Bimodal range<br>Central tendency<br>Base<br>Difference<br>Evaluate<br>Exponent<br>Grouping symbols<br>Integers<br>Less than<br>More than<br>Multiplicative inverse<br>Power<br>Product<br>Quotient<br>Rational<br>Real numbers<br>Reciprocal<br>Set of data<br>Substitute<br>Sum<br>Twice<br>Variable<br>Verbal expression<br><br><b>Visuals &amp; Demos</b><br>Algebra Tiles<br>Algeblocks<br>Color Tiles<br>Fraction Strips<br>Fraction Circles<br>Factor Trees<br>Graph Paper<br>Number Lines<br>Two Color Chips<br>Walk Number Lines | 3 Weeks |
|                                                                                                      | Apply order of operations (1.0)                                        | 1 -7                         | Pages 63, 64                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |

\* 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<br><u>Algebra</u><br><u>Assessment</u><br><u>Portfolio</u><br><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                                                                            | <b>Key Vocabulary:</b><br>Additive identity<br>Additive inverse<br>Associative<br>Coefficient<br>Commutative<br>Distributive<br>Equivalent expression<br>Evaluate<br>Inverse<br>Identity<br>Irrational Number<br>Multiplicative identity<br>Multiplicative inverse<br>Multiplicative property of zero<br><br><b>Visuals &amp; Demos:</b><br>Algebra Tiles<br>Algeblocks<br>Number Lines | 3 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<br>2 - 7               | Pages 46, 84                                                                              |                                                                                                                                                                                                                                                                                                                                                                                         |         |

## Solve Linear Equations

| California Content Standards                                                                                                                        |                                                                                                  | Adopted Textbook Correlation | Assessments<br><u>Algebra</u><br><u>Assessment</u><br><u>Portfolio</u><br><u>Workbook</u> | Key Vocabulary and Recommended Aids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Time      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Solve equations for a given variable, using the four properties of equality, including real world problems, and express solutions in set notation . | Use set notation to express solution sets                                                        | 2 - 1                        |                                                                                           | <b>Key Vocabulary:</b><br>Element<br>Equation<br>Inequality<br>Intersection<br>Member<br>Null set<br>Replacement set<br>Set-builder notation<br>Solution set<br>Union<br>Coefficient<br>Consecutive integers<br>Literal equation<br>Solve for a variable<br>Mixture<br>Principal<br>Profit<br>Rate<br>Boundary line<br>Compound inequality<br>Domain<br>Half plane<br>Inequality<br>Intersection / union<br>Is greater than<br>Is less than<br>Range<br>Replacement set<br><br><b>Visual &amp; Demos:</b><br>Algebra Tiles<br>Algeblocks | 4.5 Weeks |
|                                                                                                                                                     | 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                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |
|                                                                                                                                                     | 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                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |

\* 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

## Graph Linear Equations

| California Content Standards                                                                                                                                                                                                      |                                                                                                                    | Adopted Textbook Correlation | Assessments<br><u>Algebra</u><br><u>Assessment</u><br><u>Portfolio</u><br><u>Workbook</u> | 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<br>3 - 1 to 3 - 4      | Pages 46, 101, 102                                                                        | <b>Key Vocabulary:</b><br>Real number line<br>Real number<br>Whole number<br>Positive number<br>Negative number<br>Integer<br>Opposite number<br>Absolute value<br>Graph<br>Coordinate<br>Domain/range<br>Equation in standard form<br>Solution<br>X- and y-intercepts<br>Slope-intercept form<br>Slope<br>Linear<br>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<br>Rise<br>Run<br>Parallel<br>Perpendicular<br>Slope-intercept form of a line<br>Point-slope form<br>Standard form of a line<br>Opposite<br>Reciprocal<br><br>Scatter plot<br>Positive and Negative correlation<br>Line of best fit<br><br><b>Visuals &amp; Demos:</b><br>Number Lines<br>Coordinate Plane<br>Graph Aerobics | 5 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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 CST Standard assessed on the California Standards Test  
 CAHSEE Standard assessed on the California High School Exit Exam

## Solve and Graph Linear Inequalities

| California Content Standards                                                                                                                                        |                                         | Adopted Textbook Correlation | Assessments<br><u>Algebra</u><br><u>Assessment</u><br><u>Portfolio</u><br><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<br>6 - 6      | Pages 4, 5, 11, 12, 101, 102                                                              | <b>Key Vocabulary:</b><br>Inequality<br>Intersection<br>Union<br>Compound inequality<br>Domain<br>Half plane<br>Inequality<br>Intersection / union<br>Is greater than<br>Is less than<br>Range<br>Replacement set<br><br><b>Visual &amp; Demos:</b><br>Number Lines<br>Coordinate Plane<br>Graph Aerobics | 5.5 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<br><u>Algebra</u><br><u>Assessment</u><br><u>Portfolio</u><br><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                                                                              | <b>Key Vocabulary:</b><br>Systems of equations<br>Intersecting lines<br>Parallel lines<br>Linear combination<br>Substitution<br><br><b>Visuals &amp; Demos:</b><br>Graph Paper | 6 weeks |
|                                                                                                                                                 | 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                                                                            |                                                                                                                                                                                |         |

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

## Perform Basic Operations with Exponents

|                                                   | California Content Standards                                  | Adopted Textbook Correlation | Assessments<br><u>Algebra</u><br><u>Assessment</u><br><u>Portfolio</u><br><u>Workbook</u> | Key Vocabulary and Recommended Aids                                                                                                                    | Time      |
|---------------------------------------------------|---------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Apply exponent rules, and use scientific notation | Apply rules of positive and negative exponents (2.0)          | 7 - 1, 7 - 4                 | Pages 1, 2, 3, 8, 12, 54, 55, 91, 92                                                      | <b>Key Vocabulary:</b><br>Fractional exponent<br>Index<br>Integer exponent<br>Negative exponent<br>Positive exponent<br>Radical<br>Scientific notation | 3.5 Weeks |
|                                                   | Use scientific notation to solve problems (2.0)               | 7 - 2                        |                                                                                           |                                                                                                                                                        |           |
|                                                   | Use multiplication and division properties of exponents (2.0) | 7 - 3, 7 - 4                 |                                                                                           |                                                                                                                                                        |           |
|                                                   | Use fractional exponents (2.0)                                | 7 - 5                        |                                                                                           |                                                                                                                                                        |           |

**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><b>Essential Elements of Effective Instruction</b><br/>Model for Lesson Design Using Task Analysis</p> | <p>Anticipatory Set<br/>Objective<br/>Standard Reference<br/>Purpose<br/>Input<br/>Modeling<br/>Check for Understanding<br/>Guided Practice<br/>Closure<br/>Independent Practice</p> |
|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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:

| <b><u>Reading Strategies in Mathematics</u></b>                                                                                                                                                                                                                                    | <b><u>SDAIE Strategies for English Learners</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                  | <b><u>Differentiation for Struggling Learners</u></b>                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>▪ Learning Logs</li> <li>▪ Pre-teaching</li> <li>▪ Vocabulary</li> <li>▪ Pre-reading</li> <li>▪ Text Structures</li> <li>▪ Trail Markers</li> <li>▪ Reciprocal Teaching</li> <li>▪ Functional Text</li> <li>▪ Anticipation Guide</li> </ul> | <ul style="list-style-type: none"> <li>▪ Tapping/Building Prior Knowledge (Graphic Organizers, Schema)</li> <li>▪ Grouping Strategies</li> <li>▪ Multiple Intelligences</li> <li>▪ Adapt the Text</li> <li>▪ Interactive Learning (Manipulatives, Visuals)</li> <li>▪ Acquisition Levels</li> <li>▪ Language Sensitivity</li> <li>▪ Lower the Affective Filter (including Processing Time)</li> <li>▪ Home/School Connection (including Cultural Aspects)</li> </ul> | <ul style="list-style-type: none"> <li>▪ Pre-teaching content</li> <li>▪ Re-teaching content</li> <li>▪ Use of manipulatives</li> <li>▪ Assistive technologies (e.g. talking calculators, District Math Curriculum Office intranet resources)</li> </ul> |

**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

**Recommended Supplemental Text:**

AGS Algebra Textbook; 1998 American Guidance Service, Inc.

**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<br>Semester 1 test<br>End-Of-Course Exam                                                                                      |
| Holt Algebra 1                 | Are You Ready?<br>Strategies for Success    | Warm Up<br>Questioning Strategies<br>Check It Out<br>Think and Discuss<br>Write About It<br>Journal<br>Spiral Standards Review<br>College Entrance Exam Practice | Lesson Quiz<br>Alternative Assessment<br>Ready To Go On?<br>Chapter Test<br>Mastering the Standards<br>Cumulative Assessment<br>Concept Connection |

### Scoring Guide for Written Response/Projects

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

**Special Education Accommodations/Modifications:** Students must participate in assessments using the accommodations/modifications documented on their IEP. Accommodations/modifications for classroom and district assessment should be closely linked to the same accommodations that are given in classroom instruction. Refer to the table below to determine if a variation is considered an accommodation or a modification:

| Accommodation                                                                                             | Modification                                                                                |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Does <b>NOT</b> fundamentally alter or lower the standard or expectation of the course, standard, or test | Fundamentally alters or lowers the standard or expectation of the course, standard, or test |
| May <b>NOT</b> be noted on progress reports, report cards, transcripts*                                   | May be reported on progress reports, report cards, transcripts*                             |

\*Legal References:

*Rehabilitation Act of 1973 (Section 504)*  
*Americans with Disabilities Act of 1990, 2004 (Title II)*  
*Individuals with Disabilities Education Act (Part B)*

**Common accommodations and modifications used in math are:**

**Accommodations:**

- Flexible seating (e.g. seated near instruction)
- Enlarged font
- Breaking the material into smaller sections (e.g. dividing worksheets into sections)
- Mask to cover a row of problems
- Oral dictation of problems
- Modified format (e.g. horizontal vs. vertical form)
- Reduce distracters (e.g. other students, phone calls, window seating, etc.)
- Student generated supports (e.g. counting on fingers, touch points, student-drawn visual aids)
- Manipulatives (e.g. grades 1-2 physical counters, teacher-provided number line)
- Math facts tables

**Modificaitons**

- Calculator – Students should use a calculator if memorization or computation of math facts is problematic. If the student's limited ability in computation and/or memorization of math facts is holding him/her back from learning other content, skills and concepts, a calculator should be used to compensate for that processing problem. *Please note: the use of a calculator on State assessments, including the CAHSEE, may affect the student's score report.*

**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**

|            |            |
|------------|------------|
| <b>A =</b> | 90% - 100% |
| <b>B =</b> | 80% - 89%  |
| <b>C =</b> | 70% - 79%  |
| <b>D =</b> | 60% - 69%  |
| <b>F =</b> | Below 60%  |

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School/Office: Math Office/Special Education Curriculum Office

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