



MIDDLE SCHOOL COURSE OUTLINE

<b>Department</b>	Mathematics	<b>Course Code</b>	3103
<b>Course Title</b>	Mathematics 6 SDAIE Primary Language Support		
<b>Abbreviation</b>	Math 6 SDA/PLS	<b>Grade Level</b>	6
<b>Course Length</b>	1 year	<b>Co-requisites</b>	ELD English 1 or 2
<b>Teacher Certification</b>	BCLAD / BCC or CLAD, LDS, SB1969 or SB 395 with bilingual aide		

**COURSE DESCRIPTION:**

Sixth grade SDAIE mathematics with primary language support is designed specifically for the needs of English Language Learners (ELLs) who are at the Beginning, Early Intermediate, and Intermediate levels of listening, speaking, reading, and writing proficiency in English. Students in this course cover the essential content and utilize the same basic textbook as their Fluent English Speaker counterparts supplemented with content-parallel English materials at a simplified reading level. Additionally, primary language materials will be provided, when available, 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 comprehensible input, primary language support, and literacy development in the content area.

The foundation for this course is the State Math Standards. The course reviews and completes the study of whole numbers, decimals and fractions. Concepts of algebra, discrete mathematics, functions and patterns, geometry, logic, numbers, probability and statistics are included. Attention is given to manipulatives, proportional relationships, multiple representations, patterns and generalizations, real-world applications and problem solving strategies.

**GOALS:**

Students will learn all of the California State Standards for Grade Six. By the end of grade six, students have mastered the four arithmetic operations with whole numbers, positive fractions, positive decimals, and positive and negative integers; they accurately compute and solve problems. They apply their knowledge to statistics and probability. Students understand the concepts of mean, median, and mode of data sets and how to calculate the range. They analyze data and sampling processes for possible bias and misleading conclusions; they use addition and multiplication of fractions routinely to calculate the probabilities for compound events. Students conceptually understand and work with ratios and proportions; they compute percentages (e.g., tax, tips, interest). Students know about  $\pi$  and the formulas for the circumference and area of a circle. They use letters for numbers in formulas involving geometric shapes and in ratios to represent an unknown part of an expression. They solve one-step linear equations.

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:**

### **Number Sense**

- 1.0\* Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages. (CST)
- 2.0\* Students calculate and solve problems involving addition, subtraction, multiplication, and division. (CST)

### **Algebra and Functions**

- 1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results. (CST)
- 2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions. (CST)
- 3.0 Students investigate geometric patterns and describe them algebraically. (CST)

### **Measurement and Geometry**

- 1.0 Students deepen their understanding of the measurement of plane and solid shapes and use this understanding to solve problems. (CST)
- 2.0 Students identify and describe the properties of two-dimensional figures. (CST)

### **Statistics, Data Analysis, and Probability**

- 1.0 Students compute and analyze statistical measurements for data sets. (CAHSEE, CST)
- 2.0 Students use data samples of a population and describe the characteristics and limitations of the samples. (CST, CAHSEE)
- 3.0 Students determine theoretical and experimental probabilities and use these to make predictions about events. (CST, CAHSEE)

### **Mathematical Reasoning**

- 1.0 Students make decisions about how to approach problems.
- 2.0 Students use strategies, skills, and concepts in finding solutions.
- 3.0 Students move beyond a particular problem by generalizing to other situations.

\* 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

## **Academic Literacy in SDAIE Content-Area Classes for ELLs at Levels 1, 2**

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.

### **ELD Level 1**

Upon entering ELD Level 1, students have little or no academic English proficiency and varying levels of academic literacy skills and concepts in their first language. ELLs 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 single words, phrases and simple sentences with assistance (e.g., using the academic participation cards)
- Participate orally in some content area reading strategies (especially pre-reading, KWL, academic participation cards, anticipation guides) with single words, phrases and/or simple sentences to analyze concepts from taught texts and other course reading materials
- Respond to Curriculum Embedded Assessment prompts (read to them and clarified for them) nonverbally (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), STAR and CAT 6.

### **ELD Level 2**

Upon entering ELD Level 2, students have some academic English proficiency about topics that have been explicitly taught to them. ELLs 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), STAR and CAT 6.

**PERFORMANCE STANDARDS**

The California State Board of Education has identified the following performance levels for the Grade 6 California Content Standards Test. The objective of Long Beach Unified School District is to have all students achieve at or above the Proficient Performance Standard (Level).

Grade 6	Far Below Basic	Below Basic	Basic	Proficient	Advanced Proficient
%	0% - 28%	29% - 45%	46% - 63%	64% - 83%	84% - 100%
# Correct	Less than 18	19 - 29	30 - 41	42 - 54	55 - 65

The Long Beach Unified School District has common assessments and assignments that are required for grade six. The Performance Standard Criteria is shown in the table below. The objective 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, Quarter 2, 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
Standards Based Assessments	0% - 28%	29% - 45%	46% - 63%	64% - 83%	84% - 100%
LBUSD Quarter 1, Quarter 2, and Quarter 3 Exams					
End-Of-Course Exam					

Assessment	Not Proficient 1	Partial Proficient 2	Proficient 3	Advanced Proficient 4
Integer Tests	Less than 80%	80% - 92% 56 of 70 Correct Completed in ≤ 15 mins.	93% - 96% 65 of 70 Correct Completed in ≤ 10 mins.	97% - 100% 68 of 70 Correct Completed in ≤ 5 mins.

## OUTLINE OF CONTENT AND RECOMMENDED TIME ALLOTMENT:

For more detailed information on the context and the benchmarks to assess, refer to the Mathematics Content Standards document. Content time allocations are only suggestions and may be adjusted to suit school site curriculum plans and student needs.

### Number Sense

California Content Standards		Adopted Textbook Correlation	Assessments Grade 6 Assessment Portfolio Student Workbook	Key Vocabulary and Recommended Aids	Time	
1.0* Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:	1.1* Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line. (CST)	Holt Course 1 Ch. 3-4, 3-5, 3-6	p. 97	<b>KEY VOCABULARY:</b> Accuracy Base Composite Decimal Divisibility Equal Error Estimate Exponent Factor Fraction GCF Greater than Grouping symbols Integer LCM Less than Mixed number Multiple Order of operations Percent Place value Prime Proportion Ratio Rational numbers Reciprocal Scientific notation Square root  <b>VISUALS &amp; DEMOS:</b> Algeblocks Algebra tiles Base-ten blocks Color tiles Factor trees Fraction circles Fraction squares Graph paper Ladder method Number lines Overhead calculator Walk-on number line	6 weeks	
	1.2* Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations ( $a/b$ , $a$ to $b$ , $a:b$ ). (CST)	Holt Course 1 Ch. 5-1, 5-2, 5-3				
	1.3* Use proportions to solve problems (e.g., determine the value of $N$ if $4/7 = N/21$ , find the length of a side of a polygon similar to a known polygon). Use cross-multiplication as a method for solving such problems, understanding it as the multiplication of both sides of an equation by a multiplicative inverse. (CST)	Holt Course 1 Ch. 5-4, 5-5, 5-6, 5-7, 5-8, 6-4, 6-5, 7-6, 8-7				
	1.4* Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips. (CST)	Holt Course 1 Ch. 6-3, 6-4, 6-5, 6-6, 6-7				
2.0* Students calculate and solve problems involving addition, subtraction, multiplication, and division:	2.1 Solve problems involving addition, subtraction, multiplication, and division of positive fractions and explain why a particular operation was used for a given situation. (CST)	Holt Course 1 Ch. 4-2, 4-3, 4-4, 4-5, 4-6	p. 97		<b>VISUALS &amp; DEMOS:</b> Algeblocks Algebra tiles Base-ten blocks Color tiles Factor trees Fraction circles Fraction squares Graph paper Ladder method Number lines Overhead calculator Walk-on number line	8 weeks
	2.2 Explain the meaning of multiplication and division of positive fractions and perform the calculations (e.g., $5/8 \div 15/16 = 5/8 \times 16/15 = 2/3$ ). (CST)	Holt Course 1 Ch. 4-4, 4-5, 4-6				
	2.3* Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations that use positive and negative integers and combinations of these operations. (CST)	Holt Course 1 Ch. 2-2, 2-3, 2-4, 2-5				
	2.4* Determine the least common multiple and the greatest common divisor of whole numbers; use them to solve problems with fractions (e.g., to find a common denominator to add two fractions or to find the reduced form for a fraction). (CST)	Holt Course 1 Ch. 3-2, 3-3, 3-4, 3-5, 3-6, 4-2, 4-3, 4-4, 4-5, 4-6				

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 CAHSEE Standard assessed on the California High School Exit Exam

## Algebra and Functions

California Content Standards		Adopted Textbook Correlation	Assessments <u>Grade 6 Assessment Portfolio Student Workbook</u>	Key Vocabulary and Recommended Aids	Time
1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results:	1.1* Write and solve one-step linear equations in one variable. (CST)	Holt Course 1 Ch. 1-8, 1-9, 1-10, 1-11, 2-5, 4-6, 4-10, 6-5, 6-7	p. 61	<b>KEY VOCABULARY:</b> Area Associative property Axes Base Circumference Commutative property Coordinate plane Diameter Distribute Distributive property Equal Equation Evaluate Exponent Expression Formula Function Greater than Greater than or equal to Grouping symbols Inequality Input Inverse operation Is not equal to Justify Length Less than Less than or equal to Order of operations Ordered pair Origin Output Pattern Perimeter Pi Power Property of equality Quadrant Radical Radius Rule Scale Simplify Square root Substitution Variable Width	6 weeks
	1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables. (CST)	Holt Course 1 Ch. 1-5, 1-6, 2-2, 2-3			
	1.3 Apply algebraic order of operations and the commutative, associative, and distributive properties to evaluate expressions; and justify each step in the process. (CST)	Holt Course 1 Ch. 1-3, 1-4, 1-5			
	1.4 Solve problems manually by using the correct order of operations or by using a scientific calculator. (CST)	Holt Course 1 Ch. 1-3			
2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions:	2.1 Convert one unit of measurement to another (e.g., from feet to miles, from centimeters to inches). (CST)	Holt Course 1 Ch. 4-9, 5-5	p. 61	Less than Less than or equal to Order of operations Ordered pair Origin Output Pattern Perimeter Pi Power Property of equality Quadrant Radical Radius Rule Scale Simplify Square root Substitution Variable Width <b>VISUALS &amp; DEMOS:</b> Algeblocks Algebra tiles Graph paper Number lines Overhead calculator Pattern blocks Polygon models Rulers Walk-on coordinate grid	2 weeks
	2.2* Demonstrate an understanding that rate is a measure of one quantity per unit value of another quantity. (CST)	Holt Course 1 Ch. 5-2, 5-4			
	2.3 Solve problems involving rates, average speed, distance, and time. (CST)	Holt Course 1 Ch. 5-2, 5-4			
3.0 Students investigate geometric patterns and describe them algebraically:	3.1 Use variables in expressions describing geometric quantities (e.g., $P = 2w + 2l$ , $A = 1/2 bh$ , $C = \pi d$ - the formulas for the perimeter of a rectangle, the area of a triangle, and the circumference of a circle, respectively). (CST)	Holt Course 1 Ch. 10-1, 10-2, 10-3, 10-4, 10-5, 10-8, 10-9, 10-10	p. 61	<b>VISUALS &amp; DEMOS:</b> Algeblocks Algebra tiles Graph paper Number lines Overhead calculator Pattern blocks Polygon models Rulers Walk-on coordinate grid	2 weeks
	3.2 Express in symbolic form simple relationships arising from geometry. (CST)	Holt Course 1 Ch. 10-1, 10-2, 10-3, 10-4, 10-5, 10-8, 10-9, 10-10			

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## Measurement and Geometry

California Content Standards		Adopted Textbook Correlation	Assessments <u>Grade 6 Assessment Portfolio Student Workbook</u>	Key Vocabulary and Recommended Aids	Time	
1.0 Students deepen their understanding of the measurement of plane and solid shapes and use this understanding to solve problems:	1.1* Understand the concept of a constant such as pi; know the formulas for the circumference and area of a circle. (CST)	Holt Course 1 Ch. 10-2, 10-5	p. 85	<b>KEY VOCABULARY:</b> Acute triangle Adjacent angle Angle Area Base Circumference Classify Complementary angles Cubic units Diameter Dimension Equilateral triangle Height Interior angle Intersecting lines Isosceles triangle Obuse triangle Parallel lines Parallelogram Perpendicular lines Pi Plane Polyhedron Prism Protractor Quadrilateral Radius Rectangle Rhombus Right triangle Scalene triangle Square Square units Supplementary angles Trapezoid Triangle sum property Vertical angles Volume	3 weeks	
	1.2 Know common estimates of $\pi$ (3.14; 22/7) and use these values to estimate and calculate the circumference and the area of circles; compare with actual measurements. (CST)	Holt Course 1 Ch. 10-2, 10-5				
	1.3 Know and use the formulas for the volume of triangular prisms and cylinders (area of base $\times$ height); compare these formulas and explain the similarity between them and the formula for the volume of a rectangular solid. (CST)	Holt Course 1 Ch. 10-8, 10-9				
2.0 Students identify and describe the properties of two-dimensional figures:	2.1 Identify angles as vertical, adjacent, complementary, or supplementary and provide descriptions of these terms. (CST)	Holt Course 1 Ch. 9-3, 9-4, 9-7	p. 73			2 weeks
	2.2* Use the properties of complementary and supplementary angles and the sum of the angles of a triangle to solve problems involving an unknown angle. (CST)	Holt Course 1 Ch. 9-4, 9-7				
	2.3 Draw quadrilaterals and triangles from given information about them (e.g., a quadrilateral having equal sides but no right angles, a right isosceles triangle). (CST)	Holt Course 1 Ch. 9-6, 9-8				
				<b>VISUALS &amp; DEMOS:</b> 3-D models Color tiles Compasses Cubic-inch blocks Dot paper Geoboards Graph paper Paper circles Paper triangles Pattern blocks Polygon models Protractors Rulers String		

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## Statistics, Data Analysis, and Probability- Grade 6

California Content Standards		Adopted Textbook Correlation	Assessments <u>Grade 6</u> <u>Assessment</u> <u>Portfolio</u> <u>Student</u> <u>Workbook</u>	Key Vocabulary and Recommended Aids	Time
1.0 Students compute and analyze statistical measurements for data sets:	1.1 Compute the range, mean, median, and mode of data sets. (CAHSEE, CST)	Holt Course 1 Ch. 7-1, 7-2, 7-3		<b>KEY VOCABULARY:</b> Biased Central tendency Claim Conclusion Dependent events Experimental probability Independent events Mean Median Mode Outcome Outlier Population Probability Random sample Range Sample Sampling error Survey Theoretical probability Tree diagram Validity	1.5 weeks
	1.2 Understand how additional data added to data sets may affect these computations of measures of central tendency. (CST)	Holt Course 1 Ch. 7-2			
	1.3 Understand how the inclusion or exclusion of outliers affects measures of central tendency. (CST)	Holt Course 1 Ch. 7-2, 7-3			
	1.4 Know why a specific measure of central tendency (mean, median, mode) provides the most useful information in a given context.	Holt Course 1 Ch. 7-3			
2.0 Students use data samples of a population and describe the characteristics and limitations of the samples:	2.1 Compare different samples of a population with the data from the entire population and identify a situation in which it makes sense to use a sample.	Holt Course 1 Ch. 7-6		<b>VISUALS &amp; DEMOS:</b> Baseball cards Coins, dice spinners Graph paper Newspaper data Overhead calculator	2.5 weeks
	2.2* Identify different ways of selecting a sample (e.g., convenience sampling, responses to a survey, random sampling) and which method makes a sample more representative for a population. (CST)	Holt Course 1 Ch. 7-7			
	2.3* Analyze data displays and explain why the way in which the question was asked might have influenced the results obtained and why the way in which the results were displayed might have influenced the conclusions reached.	Holt Course 1 Ch. 7-4, 7-5, 7-8			
	2.4* Identify data that represent sampling errors and explain why the sample (and the display) might be biased.	Holt Course 1 Ch. 7-8			
	2.5* Identify claims based on statistical data and, in simple cases, evaluate the validity of the claims. (CAHSEE, CST)	Holt Course 1 Ch. 7-4, 7-5, 7-6, 7-8			
3.0 Students determine theoretical and experimental probabilities and use these to make predictions about events:	3.1* Represent all possible outcomes for compound events in an organized way (e.g., tables, grids, tree diagrams) and express the theoretical probability of each outcome. (CAHSEE, CST)	Holt Course 1 Ch. 8-4, 8-5			2 weeks
	3.2 Use data to estimate the probability of future events (e.g., batting averages or number of accidents per mile driven).	Holt Course 1 Ch. 8-2, 8-4, 8-7			
	3.3* Represent probabilities as ratios, proportions, decimals between 0 and 1, and percentages between 0 and 100 and verify that the probabilities computed are reasonable; know that if P is the probability of an event, 1-P is the probability of an event not occurring. (CAHSEE, CST)	Holt Course 1 Ch. 8-1, 8-2, 8-3, 8-4, 8-5, 8-6, 8-7			
	3.4 Understand that the probability of either of two disjoint events occurring is the sum of the two individual probabilities and that the probability of one event following another, in independent trials, is the product of the two probabilities. (CST)	Holt Course 1 Ch. 8-5, 8-6			
	3.5* Understand the difference between independent and dependent events. (CAHSEE, CST)	Holt Course 1 Ch. 8-6			

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## Mathematical Reasoning

California Content Standards		Adopted Textbook Correlation	Assessments <u>Grade 6 Assessment Portfolio Student Workbook</u>	Key Vocabulary and Recommended Aids	Time
1.0 Students make decisions about how to approach problems:	1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.	Holt Course 1 Mathematical Reasoning occurs throughout text	Mathematical Reasoning is embedded throughout	<b>KEY VOCABULARY:</b> Degree of accuracy Estimation Graph Irrelevant Mathematical conjecture Missing information Prioritizing Reasonable Relevant Sequencing	Mathematical Reasoning is embedded throughout
	1.2 Formulate and justify mathematical conjectures based on a general description of the mathematical question or problem posed.	Holt Course 1 Mathematical Reasoning occurs throughout text			
	1.3 Determine when and how to break a problem into simpler parts.	Holt Course 1 Mathematical Reasoning occurs throughout text			
2.0 Students use strategies, skills, and concepts in finding solutions:	2.1 Use estimation to verify the reasonableness of calculated results.	Holt Course 1 Mathematical Reasoning occurs throughout text	Mathematical Reasoning is embedded throughout		Mathematical Reasoning is embedded throughout
	2.2 Apply strategies and results from simpler problems to more complex problems.	Holt Course 1 Mathematical Reasoning occurs throughout text			
	2.3 Estimate unknown quantities graphically and solve for them by using logical reasoning and arithmetic and algebraic techniques.	Holt Course 1 Mathematical Reasoning occurs throughout text			
	2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	Holt Course 1 Mathematical Reasoning occurs throughout text			
	2.5 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.	Holt Course 1 Mathematical Reasoning occurs throughout text			
	2.6 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.	Holt Course 1 Mathematical Reasoning occurs throughout text			
	2.7 Make precise calculations and check the validity of the results from the context of the problem.	Holt Course 1 Mathematical Reasoning occurs throughout text			
3.0 Students move beyond a particular problem by generalizing to other situations:	3.1 Evaluate the reasonableness of the solution in the context of the original situation.	Holt Course 1 Mathematical Reasoning occurs throughout text	Mathematical Reasoning is embedded throughout		Mathematical Reasoning is embedded throughout
	3.2 Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.	Holt Course 1 Mathematical Reasoning occurs throughout text			
	3.3 Develop generalizations of the results obtained and the strategies used and apply them in new problem situations.	Holt Course 1 Mathematical Reasoning occurs throughout text			

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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 Manager \*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.

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

<p><b><u>Reading Strategies in Mathematics</u></b></p> <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>	<p><b><u>SDAIE Strategies for English Learners</u></b></p> <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>	<p><i>Differentiation for Advanced Learners</i></p> <ul style="list-style-type: none"> <li>▪ Curriculum Compacting</li> <li>▪ Tiered Assignments</li> <li>▪ Flexible Grouping</li> <li>▪ Acceleration</li> <li>▪ Depth and Complexity</li> <li>▪ Independent Study</li> </ul>
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**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 Mathematics Course 1: Numbers to Algebra; Bennett et. Al.; 2008; Holt, Rinehart and Winston

**Supplemental Materials**

- Assessment Portfolio Student Workbooks
- Algebra Power Video for Integers
- Holt Course 1 Focus on California Standards: Intervention Workbook
- Holt Course 1 Homework and Practice Workbook
- Holt Course 1 Know-It Notebook
- Holt Course 1 Review for Mastery Workbook

**Primary Language Preview/Review Resources:**

- Holt Course 1: Numbers to Algebra – Spanish Student Edition
- Holt Course 1 Spanish Focus on California Standards: Intervention Workbook
- Holt Course 1 Spanish Homework and Practice Workbook
- Holt Course 1 Spanish Know-It Notebook
- Holt Course 1 Spanish Review for Mastery Workbook

**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:**

Assessments include informal (daily math warm-ups, journals, notes, quizzes), authentic (open-ended questions performance tasks) and formal assessments (chapter tests, District Math Facts Tests, standardized tests (STAR) ). A variety of assessment scoring formats should include multiple choice, short answer, rubrics and scoring guides.

Source	Diagnosis	Monitor	Evaluate
District Developed Assessments	Practice End of Course Exam	Integer Tests Practice Exams for Quarter 1, Quarter 2, and Quarter 3 Standards Based Assessments	Quarter 1, Quarter 2, and Quarter 3 Exams End-of-Course Exam
Holt Mathematics Course 1 (Grade 6)	Are You Ready? - Chapter Readiness Quiz (text) Pre-Course Review Diagnostic Tests	Spiral Standards Review (text) Study Guide: Review (text) Focus on California Standards: Benchmark Tests (CD-ROM/online) Mastering the Standards Cumulative Reviews (text)	Chapter Tests (Assessment Resources) • Formal Assessment • Alternative Assessment Test Generator (CD-ROM) Lesson Quizzes (teacher's edition) Ready To Go On? – Weekly Assessments (text) Chapter Test (text)

**Scoring Guide for Written Response/Projects**

<b>Score</b>	<b>Description</b>
<b>4</b>	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>
<b>3</b>	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>
<b>2</b>	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>
<b>1</b>	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>

**GRADING POLICY:** A common grading policy ensures consistency between schools and classrooms across the district.

**Suggested Percent of Grade**

Assessment:	75%
• Chapter Tests	
• Quizzes	
• Standards Based Assessments	
• End-of-Course Exam 5% (Last Quarter)	
Homework:	10%
Cornell Notes:	5%
Other (Classwork/Projects):	10%

**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%

Submitted by: Becky Afghani  
 School/Office: Math Office  
 Revised Date: 9/08