



MIDDLE SCHOOL COURSE OUTLINE

Department	Mathematics	Course Code	3103
Course Title	Mathematics 6 SDAIE Primary Language Support		
Abbreviation	Math 6 SDA/PLS	Grade Level	6
Course Length	1 year	Co-requisites	ELD English 1 or 2
Teacher Certification	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 π 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.

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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%	80% - 100%
# Correct	Less than 18	19 – 29	30 – 41	42 – 54	55 - 65

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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. Performance level is determined by the average of the Assessments or Assignments.

Mathematics Performance Standard Criteria

Assessment/ Assignments	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.
Graded Student Work	Average is a 1 or less than 60%	Average is a 2 or 60% - 69%	Average is a 3 or 70% - 84%	Average is a 4 or 85% - 100%
Standards Based Assessment	Less than 60%	60% - 69%	70% - 84%	85% - 100%
Written Response/ OEM	1-2	3	4	5-6
End-of-Course Exam	Less than 45%	45% - 59%	60% - 84%	85% - 100%

Mathematics Standard Performance

Performance Level for each unit is determined by the average of the Graded Student Work, Standards Based Test and Open-Ended Math Score. Students record information in the Portfolio during the school year and at the end of the year complete the Overall Standards Performance Graph.

Performance Level	4				
	3.5				
	3				
	2.5				
	2				
	1.5				
	1				
	0.5				
	0				
		Algebra and Functions	Geometry	Measurement	Number Sense

The Mathematical Reasoning standard is embedded within items in other strands

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.

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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)	McDougal Littell Course 1 Ch. 1.5, 2.6, 2.7, 2.8, 4.1, 4.8	p. 97 OEM 620 OEM 623	KEY VOCABULARY: 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 VISUALS & DEMOS: 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)	McDougal Littell Course 1 Ch. 6.1, 6.5, 7.1				
	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)	McDougal Littell Course 1 Ch. 6.2, 6.3, 6.4, 6.5				
	1.4* Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips. (CST)	McDougal Littell Course 1 Ch. 7.1, 7.2, 7.3, 7.4, 7.6, 7.7				
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)	McDougal Littell Course 1 Ch. 3.1, 3.2, 3.3, 3.4, 3.5	p. 97 OEM 624		KEY VOCABULARY: 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 VISUALS & DEMOS: 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)	McDougal Littell Course 1 Ch. 3.4, 3.5				
	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)	McDougal Littell Course 1 Ch. 4.2, 4.3, 4.4, 4.5, 4.6				
	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)	McDougal Littell Course 1 Ch. 2.2, 2.4, 2.5, 2.6, 3.1, 3.2				

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Algebra and Functions

California Content Standards		Adopted Textbook Correlation	Assessments Grade 6 Assessment Portfolio Student Workbook	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)	McDougal Littell Course 1 Ch. 5.2, 5.3, 5.4, 5.5, 5.6, 5.7	p. 61 OEM 603 OEM 616 OEM 622	KEY VOCABULARY: 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)	McDougal Littell Course 1 Ch. 1.2, 3.6, 4.5, 5.1, 7.6			
	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)	McDougal Littell Course 1 Ch. 1.3, 1.4, 3.6, 4.7			
	1.4 Solve problems manually by using the correct order of operations or by using a scientific calculator. (CST)	McDougal Littell Course 1 Ch. 1.4, 4.2			
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)	McDougal Littell Course 1 Ch. 3.7, 9.2, 9.4	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	2 weeks
	2.2* Demonstrate an understanding that rate is a measure of one quantity per unit value of another quantity. (CST)	McDougal Littell Course 1 Ch. 3.8			
	2.3 Solve problems involving rates, average speed, distance, and time. (CST)	McDougal Littell Course 1 Ch. 1.8, 6.3			
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)	McDougal Littell Course 1 Ch. 1.7, 8.4, 8.6, 8.7, 8.8	p. 61 OEM 614	VISUALS & DEMOS: 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)	McDougal Littell Course 1 Ch. 6.4, 8.4, 9.6			

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Measurement and Geometry

California Content Standards		Adopted Textbook Correlation	Assessments Grade 6 Assessment Portfolio Student Workbook	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)	McDougal Littell Course 1 Ch. 8.7, 8.8	p. 85 OEM 612 OEM 615	KEY VOCABULARY: 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 π (3.14; 22/7) and use these values to estimate and calculate the circumference and the area of circles; compare with actual measurements. (CST)	McDougal Littell Course 1 Ch. 8.7, 8.8, 9.6			
	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)	McDougal Littell Course 1 Ch. 9.2, 9.3, 9.4			
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)	McDougal Littell Course 1 Ch. 8.1	p. 73 OEM 608 OEM 609 OEM 611	VISUALS & DEMOS: 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	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)	McDougal Littell Course 1 Ch. 8.1, 8.2			
	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)	McDougal Littell Course 1 Ch. 8.3, 8.5, 8.6			

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Statistics, Data Analysis, and Probability- Grade 6

California Content Standards		Adopted Textbook Correlation	Assessments Grade 6 Assessment Portfolio Student Workbook	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)	McDougal Littell Course 1 Ch. 1.6, 4.6, 10.1, 10.3	OEM 609	KEY VOCABULARY: 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)	McDougal Littell Course 1 Ch. 10.1			
	1.3 Understand how the inclusion or exclusion of outliers affects measures of central tendency. (CST)	McDougal Littell Course 1 Ch. 10.1			
	1.4 Know why a specific measure of central tendency (mean, median, mode) provides the most useful information in a given context.	McDougal Littell Course 1 Ch. 10.1			
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.	McDougal Littell Course 1 Ch. 10.7	OEM 617 OEM 618	VISUALS & DEMOS: 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)	McDougal Littell Course 1 Ch. 10.7			
	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.	McDougal Littell Course 1 Ch. 7.5, 10.2, 10.3, 10.4, 10.5, 10.6, 10.8			
	2.4* Identify data that represent sampling errors and explain why the sample (and the display) might be biased.	McDougal Littell Course 1 Ch. 10.8			
	2.5* Identify claims based on statistical data and, in simple cases, evaluate the validity of the claims. (CAHSEE, CST)	McDougal Littell Course 1 Ch. 10.5, 10.6, 10.8			
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)	McDougal Littell Course 1 Ch. 11.1, 11.2, 11.4	OEM 617 OEM 618		2 weeks
	3.2 Use data to estimate the probability of future events (e.g., batting averages or number of accidents per mile driven).	McDougal Littell Course 1 Ch. 11.6			
	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)	McDougal Littell Course 1 Ch. 6.6, 11.1, 11.5			
	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)	McDougal Littell Course 1 Ch. 11.3, 11.4			
	3.5* Understand the difference between independent and dependent events. (CAHSEE, CST)	McDougal Littell Course 1 Ch. 11.2			

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Mathematical Reasoning

California Content Standards		Adopted Textbook Correlation	Assessments Grade 6 Assessment Portfolio Student Workbook	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.	McDougal Littell Course 1 Mathematical Reasoning occurs throughout text	Mathematical Reasoning is embedded throughout all of the OEMs and the Standards Based Assessments	KEY VOCABULARY: 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.	McDougal Littell Course 1 Mathematical Reasoning occurs throughout text				
	1.3 Determine when and how to break a problem into simpler parts.	McDougal Littell 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.	McDougal Littell Course 1 Mathematical Reasoning occurs throughout text	Mathematical Reasoning is embedded throughout all of the OEMs and the Standards Based Assessments		KEY VOCABULARY: Degree of accuracy Estimation Graph Irrelevant Mathematical conjecture Missing information Prioritizing Reasonable Relevant Sequencing	Mathematical Reasoning is embedded throughout
	2.2 Apply strategies and results from simpler problems to more complex problems.	McDougal Littell 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.	McDougal Littell 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.	McDougal Littell 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.	McDougal Littell 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.	McDougal Littell 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.	McDougal Littell 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.	McDougal Littell Course 1 Mathematical Reasoning occurs throughout text	Mathematical Reasoning is embedded throughout all of the OEMs and the Standards Based Assessments	KEY VOCABULARY: Degree of accuracy Estimation Graph Irrelevant Mathematical conjecture Missing information Prioritizing Reasonable Relevant Sequencing		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.	McDougal Littell 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.	McDougal Littell 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 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

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

Lesson Design & Delivery:

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

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

Active Participation:

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

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

Literacy and Differentiation Strategies

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

Reading Strategies in Math

- Learning Logs
- Pre-teaching
- Vocabulary
- Pre-reading
- Text Structures
- Trail Markers
- Reciprocal Teaching
- Functional Text
- Anticipation Guides

SDAIE Strategies for English Learners

- Tapping/Building Prior Knowledge (Graphic Organizers, Schema)
- Grouping Strategies
- Multiple Intelligences
- Adapt the Text
- Interactive Learning (Manipulatives, Visuals)
- Acquisition Levels
- Language Sensitivity
- Lower the Affective Filter (including Processing Time)
- Home/School Connection (including Cultural Aspects)

Differentiation for Advanced Learners

- Curriculum Compacting
- Tiered Assignments
- Flexible Grouping
- Acceleration
- Depth and Complexity
- Independent Study

Primary Language Support

- Preview/Review Grouping
- Parallel Texts
- Cognates

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: McDougal Littell Mathematics Concepts and Skills, Course 1; Larson; 2001; McDougal-Littell

Supplemental Materials

- Assessment Portfolio Student Workbooks
- Algebra Power Video for Integers
- McDougal Littell Multi-Language Glossary
- McDougal Littell English/Spanish Transparencies

Primary Language Preview/Review Resources:

- [Passaporte a las matematicas, libro 2, McDougal Littell](#)
- McDougal Littell [Course 1 Practice Workbook-Spanish Edition](#)

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, District Open-Ended Math Test, standardized tests (STAR)). A variety of assessment scoring formats should include multiple choice, short answer, rubrics and scoring guides.

Textbook	Diagnosis	Monitor	Evaluate
District Developed Assessments	Practice Exam 1 and 2	Integer Tests Standards Based Assessments Open-Ended Math	End-of-Course Exam
McDougal Littell Mathematics Concepts and Skills Course 1 (Grade 6)	Chapter Readiness Quiz (text) Pre-Course Review Diagnostic Tests (CA Standards Key Concepts Book)	Multiple Choice Practice (text) Mixed Review (text) Chapter Summary and Review (text) Reviewing the Basics (text) Daily Cumulative Review (Chapter Resource Books) Cumulative Reviews (text)	Chapter Tests (Assessment Book) <ul style="list-style-type: none"> • Formal Assessment • Alternative Assessment Test Generator (CD-ROM) Mid-Chapter Test (text) Chapter Test (text)

Scoring Guide for Written Response/Open-Ended Mathematics

Score	Description
4	The student response thoroughly accomplishes the task. <ul style="list-style-type: none"> • Shows thorough understanding and use of the central mathematical ideas(s) • Includes appropriate and accurate mathematical computations • Presents mathematical knowledge and ideas clearly and skillfully, using combinations of mathematical symbols and/or visual means as supporting evidence
3	The student response substantially accomplishes the task. <ul style="list-style-type: none"> • Shows an essential grasp of the central mathematical idea(s) • Includes appropriate and generally correct mathematical computations • Presents mathematical knowledge and ideas clearly with supporting evidence
2	The student response partially accomplishes the task. <ul style="list-style-type: none"> • Shows a limited grasp of the central mathematical ideas(s) • May include incomplete and/or misdirected mathematical computations • Presents mathematical knowledge and ideas in an unclear manner or without supporting evidence

1	<p>The student response makes little or no progress toward accomplishing the task.</p> <ul style="list-style-type: none">• Shows little or no grasp of the central mathematical idea(s)• Includes mathematical computations that are incorrect or inappropriate• Presents mathematical knowledge and ideas in a barely (if at all) comprehensible manner
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Portfolio Components

Component	Description	Purpose
Cornell Notes	This is a student-created study guide of organized notes which can be used to study for the End-of-Course Exam. Math vocabulary for new concepts and processes is correctly defined, illustrated, and written in students' own words.	Students must learn to develop communication skills which include creating and using notes for reference during the year. The notes should also be used to study for comprehensive exams.
Integer Tests	Integer tests will be given throughout the year and the highest score for each test will be recorded. Students must meet the percent correct and the amount of time allowed for each category.	Mastery of integers is critical to students' success in Algebra. Students must pass the High School Exit Exam where the use of calculators is not permitted.
Grade Student Work	Select examples of individual student work such as tests, quizzes and projects. Calculate the mean of the samples and convert to a four point or percent scoring system.	Student work examples demonstrate growth toward understanding of mathematics standards.
Standards Based Assessment	The Standards Based Assessments are located in the Assessment Portfolio Student Workbook. These tests should be completed before the End-of-Course Exam.	Students take common summative tests to assess proficiency level on individual Math Standards. These tests are indicators of students' depth of understanding in each standard
Written Response/ Open-Ended Math	There are three written response per standard which students should complete. The best score on the written response for each standard is recorded in the portfolio. The written response questions should be completed individually by the student.	Students who are able to write about their thinking and understanding of math concepts have a deeper understanding of math that will enable them to do well on tests like the Golden State and Advanced Placement Exams.
End-of-Course Exam	A comprehensive exam will be given at the end of the year. The test is not timed and calculators are not allowed.	Students must learn the rigors of taking comprehensive exams in preparation for the California High School Exit Exam and other college entrance exams.

Math 6 Portfolio Performance Standards

The assessment portfolio is a communication tool for students to take ownership for their own learning. It allows parents and teacher to follow the development of students' progress towards reaching the standards. It provides students with multiple opportunities to show growth. It is important that all work for the portfolio is completed independently by the student. Students record their own information in the portfolio including the averaging of performance levels and graphing progress towards meeting standards. Students should create a bar graph indicating the level of achievement of each assessment or assignment.

Units	Not Proficient 1	Partial Proficient 2	Proficient 3	Advanced Proficient 4
Cornell Notes				
Algebra and Functions				
• Graded Student Work				
• Standards Based Assessment				
• OEM 603				
• OEM 616				
• OEM 622				
Geometry				
• Graded Student Work				
• Standards Based Assessment				
• OEM 608				
• OEM 609				
• OEM 611				
Measurement				
• Graded Student Work				
• Standards Based Assessment				
• OEM 612				
• OEM 614				
• OEM 615				
Number Sense				
• Grade Student Work				
• Standards Based Assessment				
• OEM 620				
• OEM 623				
• OEM 624				
Statistics, Data Analysis, and Probability				
• Graded Student Work				
• Standards Based Assessment				
• OEM 617				
• OEM 618				
• OEM 619				
Integers				
• Addition				
• Subtraction				
• Multiplication				
• Division				
End-of-Course Exam				

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

Suggested Percent of Grade

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

Standard Grading Scale

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

Submitted by: Dixie Dawson
School/Office: Math Office
Revised Date: 5/03 (2)