

CHINO VALLEY UNIFIED SCHOOL DISTRICT
INSTRUCTIONAL GUIDE

ALGEBRA INTERVENTION

Course Number	5959
Department	Mathematics
Prerequisites	Scoring in the Far Below Basic or Below Basic Level on the California Standards Test in Mathematics and concurrently enrolled in Algebra I or Beginning Algebra A or Beginning Algebra B and/or has received a grade of "D" or "F" in Algebra I and/or Teacher Recommendation
Length of Course	Two (2) semesters/One (1) year
Grade Level	9-12
Credit	5 units per semester/10 total credits/Elective Credit (No math credit is given for this course)
Repeatable	Not repeatable for credit
Meets A-G Requirements	No
Board Approved	March 16, 2006

Description of Course – Algebra Intervention is a developmental course that is to be taken concurrently with Algebra I. The course reviews previously taught standards and is designed to build background skills and provide additional instruction time in the main concepts presented in the Algebra I course. The course is backwards-mapped from the Algebra standards identified as essential for passing the course and includes critical skills from several previous grade levels. This course is aligned to the California State Content Standards in Mathematics.

Rationale for Course – Algebra Intervention is a fundamental math tool designed to support students who may have completed a regular series of math courses leading to Algebra but remain at risk of not passing Algebra I. Students will be taught skills necessary to achieve success in required coursework through a specific sequence designed to review algebra readiness as it relates to passing the required Algebra course and passing District and state assessments.

Subject: Mathematics
Course: Algebra Intervention
Strand: Number Sense
Grade: 8 - 12


STAR-California Standards Test Emphasis
 High School Exit Exam, . Y = Yes
 S = Standard is a supporting standard for standards that are tested
 Essential Skill (National Level) Y = Yes
 Curriculum Survey
 Priority
 Heart of the Program
 California Key Standard

HSEE
 ES
 CS
 P

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Content Standard: Grade 3: Number Sense 1.0 Students understand the place value of whole numbers.	Prerequisites - Understand place value in whole numbers to 1,000 - Count, read, and write whole numbers to 1,000 - Use words, models, and expanded forms to represent numbers to 1,000 - Compare and order whole numbers to 1,000	CST 1.1 Y 1.2 Y 1.3 Y 1.4 Y 1.5 Y	HSEE	ES 1.3 Y 1.5 Y
Performance Indicators: 1.1 Count, read, and write whole numbers to 10,000. 1.2 Compare and order whole numbers to 10,000. 1.3 Identify the place value for each digit in numbers to 10,000. 1.4 Round off numbers to 10,000 to the nearest ten, hundred, and thousand. 1.5 Use expanded notation to represent numbers.		Vocabulary: digit: symbols used to write numbers expanded notation: addition problem containing the values of each digit of a number place value: the position of a digit within a number value: result of multiplying the digit times its place value		

Standardized Assessment Sample: 1. Which of the following has the greatest value? A. 457 B. 547 C. 574 D. 475 2. What is 6,783 rounded to the nearest hundred? A. 6,000 B. 6,700 C. 6,780 D. 6,800 3. The estimated cost of a used car is eight thousand, five dollars. What is this number in standard form? A. 8,500 B. 8,050 C. 8,505 D. 8,005 4. The six in 9,264 is in which place? A. ones place B. tens place C. hundreds place D. thousands place	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Section 1.1 Technology Resources: <u>Websites:</u> www.classzone.com (McDougal Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.clmn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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 California Key Standard

Content Standard: Grade 4: Number Sense 1.0 Students understand the place value of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers.	Prerequisites - Count, read, and write whole numbers to 10,000. - Compare and order whole numbers to 10,000. - Identify the place value for each digit in numbers to 10,000. - Round off numbers to 10,000 to the nearest ten, hundred, and thousand. - Use expanded notation to represent numbers.	<table> <tr> <th>CST</th><th>HSEE</th><th>ES</th></tr> <tr> <td>1.1 Y</td><td>1.1 S</td><td>1.1 Y</td></tr> <tr> <td>1.2 Y</td><td>1.2 S</td><td>1.2 Y</td></tr> <tr> <td>1.3 Y</td><td></td><td>1.3 Y</td></tr> <tr> <td>1.5 Y</td><td></td><td>1.4 Y</td></tr> <tr> <td>1.6 Y</td><td>1.6 S</td><td></td></tr> <tr> <td>1.7 Y</td><td>1.7 S</td><td></td></tr> <tr> <td>1.8 Y</td><td>1.8 S</td><td>1.8 Y</td></tr> <tr> <td>1.9 Y</td><td>1.9 S</td><td>1.9 Y</td></tr> </table>	CST	HSEE	ES	1.1 Y	1.1 S	1.1 Y	1.2 Y	1.2 S	1.2 Y	1.3 Y		1.3 Y	1.5 Y		1.4 Y	1.6 Y	1.6 S		1.7 Y	1.7 S		1.8 Y	1.8 S	1.8 Y	1.9 Y	1.9 S	1.9 Y
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1.7 Y	1.7 S																												
1.8 Y	1.8 S	1.8 Y																											
1.9 Y	1.9 S	1.9 Y																											
Performance Indicators: 1.1 Read and write whole numbers in the millions. 1.2 Order and compare whole numbers and decimals to two decimal places. 1.3 Round whole numbers through the millions to the nearest ten, hundred, thousand, ten thousand, or hundred thousand. 1.4 Decide when a rounded solution is called for and explain why such a solution may be appropriate. 1.5 Explain different interpretations of fractions, for example, parts of a whole, parts of a set, and division of whole numbers by whole numbers; explain equivalents of fractions. 1.6 Write tenths and hundredths in decimal and fraction notations and know the fraction and decimal equivalents for halves and fourths. 1.7 Write the fraction represented by a drawing of parts of a figure; represent a given fraction by using drawings; and relate a fraction to a simple decimal on a number line. 1.8 Use concepts of negative numbers. 1.9 Identify on a number line the relative position of positive fractions, positive mixed numbers, and positive decimals to two decimal places.		Vocabulary: accuracy: to much rounding loses accuracy bar graph: used to display data with frequency on the vertical axis denominator: bottom number in a fraction frequency: represents counts of items in a category inequality: $<$, $\geq$, $>$, $\leq$ is greater than: $>$ is less than: $<$ numerator: top number in a fraction rounding: used to estimate; used next smallest value signed numbers: numbers with positive or negative values																											

Standardized Assessment Sample: - Which of these is the number 7,007,012? A. seven million, seven hundred, twelve B. seven million, seven thousand, twelve C. seven thousand, seven hundred, twelve D. seven billion, seven million, twelve - The estimated cost to build an office building is eight hundred forty thousand dolls. What is this number in standard form? A. \$840 B. \$8,400 C. \$84,000 D. \$840,000 - Which of the following has the greatest value? A. 24.1 B. 0.79 C. 8.46 D. 9.35 - The numbers in the pattern decrease by the same amount each time. What are the next three numbers in this pattern? 20, 16, 12, 8, 4, _____, _____, _____ A. 0, -4, -8 B. 0, -2, -4 C. 0, 4, 8 D. 0, 2, 4 - Which fraction means the same as 0.29? A. $\frac{29}{10}$ B. $\frac{29}{100}$ C. $\frac{29}{1000}$ D. $\frac{29}{1}$	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 1.2, 1.3, 1.5, 1.7, and 3.1 Technology Resources: <u>Websites:</u> www.classzone.com (McDougall Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.cirn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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Content Standard: Grade 4: Number Sense 2.0 Students extend their use and understanding of whole numbers to the addition and subtraction of simple decimals.	Prerequisites - Find the sum or difference of two numbers between 1 and 10,000. - Memorize the multiplication table for number between 1 and 10. - Solve simple problems involving addition or subtraction of one-digit numbers. - Understand place value for each digit 1 numbers to 1,000.	CST 2.1 Y 2.2 Y	HSEE 2.1 S	ES
Performance Indicators: 2.1 Estimate and compute the sum or difference of whole numbers and positive decimals to two places. 2.2 Round two-place decimals to one decimal or the nearest whole number and judge the reasonableness of the rounded answer.	Vocabulary: divisibility: a number is divisible by another number when it can be divided evenly by the number factor: numbers that divide evenly into other numbers multiple: result of multiplying a given number by a non-zero whole number product: multiplication sum: addition			

Standardized Assessment Sample: - What is 17.38 rounded to the nearest tenth? A. 20 B. 17 C. 17.3 D. 17.4 $16.85 - 8.32 = ?$ A. 25.17 B. 9.83 C. 8.36 D. 8.52 $4857 + 2604 = ?$ A. 2253 B. 6461 C. 7453 D. 7461 $49.26 - 12.05 = ?$ A. 36.71 B. 37.71 C. 37.21 D. 36.21	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Section 2.6 Technology Resources: <u>Websites:</u> www.classzone.com (McDougall Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.cirn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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Content Standard: Grade 4: Number Sense 3.0 Students solve problems involving addition, subtraction, multiplication, and division of whole numbers and understand the meaning among the operations.	Prerequisites - Find the sum or difference of two numbers between 1 and 10,000. - Memorize the multiplication table for number between 1 and 10. - Solve simple problems involving addition or subtraction of one-digit numbers. - Understand place value for each digit 1 numbers to 1,000.	CST 3.1 Y 3.2 Y 3.3 Y 3.4 Y	HSEE 3.1 S 3.2 S 3.3 S 3.4 S	ES 3.1 Y 3.2 Y 3.3 Y 3.4 Y
Performance Indicators: 3.1 Demonstrate an understanding of, and the ability to use, standard algorithms for the addition and subtraction of multidigit numbers. 3.2 Demonstrate an understanding of, and the ability to use, standard algorithms for multiplying a multidigit number by a two-digit number and for dividing a multidigit number by a one-digit number; use relationships between them to simplify computations and to check results. 3.3 Solve problems involving multiplication of multidigit numbers by two-digit numbers. 3.4 Solve problems involving division of multidigit numbers by one-digit numbers.	Vocabulary: No new vocabulary			

Standardized Assessment Sample: 1. $5894 - 2608 = ?$ A. 3276 B. 3286 C. 3294 D. 3296 2. $267 \div 6 = ?$ A. 43 B. 43 R3 C. 44 D. 44 R3 3. There are 58 cases of tissue in the warehouse. If there are 24 boxes of tissue in each case, how many boxes of tissue are in the warehouse? A. 1392 B. 1362 C. 1292 D. 1262 4. There are 9 rows of seats in a theater. Each row has the same number of seats. If there is a total of 162 seats, how many seats in each row? A. 17 B. 18 C. 19 D. 20	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 4.1 and 4.4 Technology Resources: <u>Websites:</u> www.classzone.com (McDougal Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.clrn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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Content Standard: Grade 5: Number Sense 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers.	Prerequisites • Order and compare whole numbers and decimals to two decimal places. • Round whole numbers through the millions to the nearest ten, hundred, thousand, ten thousand, or hundred thousand. • Explain different interpretations of fractions, for example, parts of a whole, parts of a set, and division of whole numbers by whole numbers; explain equivalents of fractions. • Write tenths and hundredths in decimal and fraction notations and know the fraction and decimal equivalents for halves and fourths. • Use concepts of negative numbers. • Identify on a number line the relative position of positive fractions, positive mixed numbers, and positive decimals to two decimal places	CST 1.1 Y 1.2 Y 1.3 Y 1.4 Y 1.5 Y	HSEE 1.1 S 1.2 S 1.3 S 1.4 S 1.5 S	ES 1.2 Y 1.4 Y 1.5 Y
Performance Indicators: 1.1 Estimate, round, and manipulate very large and very small numbers. 1.2 Interpret percents as part of a hundred; find decimal and percent equivalence for common fractions and explain why they represent the same value; compute a given percent of a whole number. 1.3 Understand and compute positive powers of nonnegative integer; compute examples as repeated multiplication. 1.4 Determine the prime factors of all numbers through 50 and write the numbers as the product of their prime factors by using exponents to show multiples of a factor. 1.5 Identify and represent on a number line decimals, fractions, mixed numbers, and positive and negative integers.	Vocabulary: absolute value: the distance a number is from zero base: number being multiplied composite: a number with more than two factors exponent: tells how many times to use the base as a factor integers: positive and negative whole numbers and zero origin: zero on a number line prime: a number that has exactly two factors- one and itself prime factorization: every composite number can be written as a product of prime numbers			

Standardized Assessment Sample: - What is 3080.287 rounded to the nearest ten? A. 3080 B. 3100 C. 3080.29 D. 3080.3 - What is 40% of 250? A. 50 B. 100 C. 150 D. 200 - What is $\frac{3}{8}$ written as a percent? A. 26.7% B. 30% C. 37.5% D. 50% $7^3 = ?$ A. $7 + 7 + 7$ B. $7 \times 7 \times 7$ C. $7 + 7 + 7 + 7 + 7 + 7$ D. $7 \times 7 \times 7 \times 7 \times 7 \times 7 \times 7$ - What is the prime factorization of 90? A. $2^4 \times 5$ B. $4^2 \times 5$ C. $3^2 \times 5$ D. $3^2 \times 10$	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 1.6, 2.5, 2.7, 2.8, 7.1, and 7.3 Technology Resources: <u>Websites:</u> www.classzone.com (McDougal Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.clrn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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 Heart of the Program
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Content Standard: Grade 5: Number Sense 2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals.	Prerequisites - Estimate and compute the sum or difference of whole numbers and positive decimals to two places. - Round two-place decimals to one decimal or the nearest whole and judge the reasonableness of the rounded answer.	CST 2.1 Y 2.2 Y 2.3 Y 2.4 Y 2.5 Y	HSEE 2.1 S 2.2 S 2.3 S 2.4 S 2.5 S	ES 2.1 Y 2.2 Y 2.3 Y
Performance Indicators: 2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the answer. 2.2 Demonstrate proficiency with division, including division with positive decimals and long division with multidigit divisions. 2.3 Solve simple problems, including ones arising in concrete situations, involving the addition and subtraction of fractions and mixed numbers, and express answers in the simplest form. 2.4 Understand the concept of multiplication and division of fractions. 2.5 Compute and perform simple multiplication and division of fractions and apply these procedures to solving problems.	Vocabulary: Additive Identity : $a + 0 = a$ Associative Property of Addition: $(a + b) + c = a + (b + c)$ common denominator: fractions with the same denominator Commutative Property of Addition: $a + b = b + a$ equivalent fractions: two or more fractions that have the same value LCM: least common multiple; smallest number that has two numbers as its multiple; same as LCD – least common denominator rational number: a number that can be expressed as a ratio of two numbers			

Standardized Assessment Sample: 1. $11.3 \times 2.7 = ?$ A. 29.31 B. 29.51 C. 30.31 D. 30.51 2. James bought 9 pounds of ground beef. He saved \$8.37 by using a store coupon. How much did he save per pound of ground beef? A. \$0.89 B. \$0.93 C. \$1.08 D. \$75.33 3. $15.12 \div 2.4 = ?$ A. 0.513 B. 0.63 C. 5.13 D. 6.3 4. $2\frac{1}{3} + 4\frac{1}{2} = ?$ A. $6\frac{1}{6}$ B. $6\frac{1}{5}$ C. $6\frac{2}{5}$ D. $6\frac{5}{6}$	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 6.1, 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, and 7.4
	Technology Resources: <u>Websites:</u> www.classzone.com (McDougal Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.clrn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato

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Priority

Heart of the Program

California Key Standard

Y = Yes

Y = Yes

Content Standard: Grade 6: 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.	Prerequisites - Estimate, round, and manipulate very large and very small numbers. - Interpret percents as part of a hundred; find decimal and percent equivalence for common fractions and explain why they represent the same value; compute a given percent of a whole number. - Understand and compute positive powers of nonnegative integer; compute examples as repeated multiplication. - Determine the prime factors of all numbers through 50 and write the numbers as the product of their prime factors by using exponents to show multiples of a factor. - Identify and represent on a number line decimals, fractions, mixed numbers, and positive and negative integers.	CST 1.1 Y 1.2 Y 1.3 Y 1.4 Y	HSEE 1.1 S 1.2 S 1.3 S 1.4 S	ES 1.1 Y 1.2 Y 1.3 Y 1.4 Y
Performance Indicators: 1.1 Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line. 1.2 Interpret and use ratios in different contexts. 1.3 Use proportions to solve problems. 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. 1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.	Vocabulary: cross-products: $\frac{a}{b} = \frac{c}{d}$ if and only if $ad = bc$ equivalent fractions: two or more fractions that have the same value percent: per one hundred proportion: two equivalent fractions set equal to each other; two equal ratios			

Standardized Assessment Sample: - Which list of numbers is ordered from least to greatest? A. $\frac{1}{4}, 2\frac{1}{4}, 0.4, 0.04$ B. $0.04, 0.4, 2\frac{1}{4}, \frac{1}{4}$ C. $0.04, 0.4, \frac{1}{4}, 2\frac{1}{4}$ D. $0.04, \frac{1}{4}, 0.4, 2\frac{1}{4}$ - The weekly milk order for the corner store includes 80 gallons of low-fat milk and 30 gallons of chocolate milk. What is the ratio of the number of low-fat gallons to chocolate gallons for the corner store's weekly milk order? A. 3:1 B. 5:1 C. 5:3 D. 8:3 - A student read 14,000 pages from 8 books. Which proportion could be solved to find x, the expected number of pages from 30 books? A. $\frac{8}{14,000} = \frac{x}{30}$ B. $\frac{8}{30} = \frac{30}{14,000}$ C. $\frac{30}{14,000} = \frac{x}{8}$ D. $\frac{30}{14,000} = \frac{8}{x}$ - The vice president of sales took a client out to lunch. If the lunch was \$44 and she gave a 20% tip, how much money did she spend on lunch? A. \$8.80 B. \$35.20 C. \$52.80 D. \$53.80	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 2.3, 2.4, 3.2, and 10.6 Technology Resources: <u>Websites:</u> www.classzone.com (McDougal Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.clrn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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Content Standard: Grade 6: Number Sense 2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division.	Prerequisites • Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the answer. • Demonstrate proficiency with division, including division with positive decimals and long division with multidigit divisions. • Solve simple problems, including ones arising in concrete situations, involving the addition and subtraction of fractions and mixed numbers, and express answers in the simplest form. • Understand the concept of multiplication and division of fractions. • Compute and perform simple multiplication and division of fractions and apply these procedures to solving problems.	CST 2.1 Y 2.2 Y 2.3 Y 2.4 Y	HSEE 2.3 Y 2.4 Y	ES 2.3 Y 2.4 Y
Performance Indicators: 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. 2.2 Explain the meaning of multiplication and division of positive fractions and perform the calculations. 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. 2.4 Determine the least common multiple and the greatest common divisor of whole numbers and use them to solve problems with fractions.	Vocabulary: GCF: greatest common factor of two numbers – largest factor that is the same for two numbers; used to reduce fractions			

Standardized Assessment Sample: - What is $\frac{10}{11} \times \frac{11}{12}$? A. $\frac{5}{6}$ B. $\frac{21}{23}$ C. $1\frac{1}{120}$ D. 2 - A group of hikers climbed from Salt Flats (elevation -55 feet) to Talon Bluff (elevation 620 feet). What is the difference in elevation between Talon Bluff and Salt Flats? A. 565 feet B. 575 feet C. 665 feet D. 675 feet $12 \div -3 = ?$ A. 9 B. 4 C. $-\frac{1}{4}$ D. -4 $\frac{3}{8} + \frac{1}{12} = ?$ A. $\frac{1}{5}$ B. $\frac{1}{6}$ C. $\frac{11}{24}$ D. $\frac{11}{48}$	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 3.3 and 3.4 Technology Resources: <u>Websites:</u> www.classzone.com (McDougall Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.cirn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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Content Standard: Grade 7: Number Sense 1.0	Prerequisites	CST	HSEE	ES
Students know the properties of, and compute with, rational numbers expressed in a variety of ways. Performance Indicators: 1.1 Read, write, and compare rational numbers in scientific notation (positive and negative powers of 10) with approximate numbers using scientific notation. 1.2 Add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers. 1.3 Convert fractions to decimals and percents and use these representations in estimations, computations, and applications. 1.4 Differentiate between rational and irrational numbers. 1.5 Know that every rational number is either a terminating or repeating decimal and be able to convert terminating decimals into reduced fractions. 1.6 Calculate the percentage of increases and decreases of a quantity. 1.7 Solve problems that involve discounts, markups, commissions, and profit and compute simple and compound interest.	• Read and write decimals. • Compare and order decimals. • Write fractions and mixed numbers as terminating or repeating decimals. • Interpret percents as part of a hundred. • Write ratios with denominators of 100 as percents. • Write decimals as percents. • Write percents as decimals. • Use proportions to solve problems. • Calculate percentages of quantities. • Use specific characteristics of numbers, such as multiples, factors, and primes.	1.1 Y 1.2 Y 1.3 Y 1.4 Y 1.5 Y 1.6 Y 1.7 Y	1.1 Y 1.2 Y 1.3 Y 1.6 Y 1.7 Y	1.2 Y 1.4 Y 1.5 Y 1.7 Y
		Vocabulary: dividend: number being divided divisor: number being divided into another number remainder: remaining portion of a division problem when the divisor does is not a factor of the dividend repeating decimal: fraction that when converted to a decimal continues on in a specific pattern $\left(\frac{1}{3} = 0.3333\overline{3} \right)$ terminating decimal: fraction that when converted to a decimal has a specific value $\left(\frac{4}{5} = 0.8 \right)$		

Standardized Assessment Sample: - Write the following as a power of 10 or as a product of a whole number and a power of 10: A. 10,000 B. Ten billion C. 6,000,000 D. 3 hundred thousand - Write the prime factorization of the following numbers: A. 840 B. 396 C. 605 D. 1,859 - Change to a decimal: A. $\frac{7}{8}$ B. $\frac{7}{11}$ - Change to a fraction: A. 0.27 B. 0.272727 - Joe borrows \$800 at 10% interest compounded every six months. How much interest will there be in four (4) years? - The radius of the earth's orbit is 150,000,000,000 meters. What is this in scientific notation? - Which of the following expressions results in a negative numbers? A. $(-7) + (-3)$ B. $(-3) + 7$ C. $3 + 7$ D. $3 + (-7) + 11$ - Some students attend school for 180 of the 365 days in a year. About what percentage of the year do the students attend school? - The cost of an afternoon movie ticket last year was \$5.00. This year an afternoon movie ticket costs \$7.00. What is the percent of increase of the movie ticket from last year to this year?	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 2.1, 3.6, 4.5, 4.7, 5.1, 5.2, 5.3, 5.4, 6.10, 6.11, 8.1, 8.4, 8.7, 8.9, 8.10, 8.11, 9.1, 9.2, 9.3, 9.4, 10.2, 10.3, 10.4, 10.7, 10.8 Technology Resources: <u>Websites:</u> www.classzone.com (McDougall Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.cirn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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Subject: Mathematics
Course: Algebra Intervention
Strand: Number Sense
Grade: 8 - 12

★ STAR-California Standards Test Emphasis (High, Medium, Low)	
HSEE	High School Exit Exam
	Y= Yes
ES	S = Standard is a supporting standard for standards that are tested
CS	Essential Skill (National Level)
P	Curriculum Survey
	Y = Yes
	Priority
♥ Heart of the Program California Key Standard	
	☐

Content Standard: Grade 7: Number Sense 2.0 Students use exponents, powers, and roots and use exponents on working with fractions.	Prerequisites • Add, subtract, multiply, and divide decimals. • Add, subtract, multiply, and divide fractions that have like and unlike denominators. • Use estimation to check the reasonableness of an answer. • Write a fraction in simplest form. • Write improper fractions as mixed numbers. • Write mixed numbers as improper fractions. • Determine when a fraction is in simplest form. • Determine least common multiple and greatest common divisor of whole numbers.	CST 2.1 Y 2.2 Y 2.3 Y 2.4 Y 2.5 Y	HSEE 2.1 Y 2.2 Y 2.3 Y 2.4 Y 2.5 Y	ES 2.2 Y 2.3 Y 2.5 Y
Performance Indicators: 2.1 Understand negative whole-number exponents. Multiply and divide expressions involving exponents with a common base. 2.2 Add and subtract fractions by using factoring to find common denominators. 2.3 Multiply, divide, and simplify rational numbers by using exponent rules. 2.4 Use the inverse relationship between raising to a power and extracting the root of a perfect square integer; for an integer that is not square, determine without a calculator the two integers between which its square root lies and explain why. 2.5 The meaning of the absolute value of a number; interpret the absolute value as the distance of the number from zero on a number line; and determine the absolute value of real numbers.	Vocabulary: irrational number: non-terminating, non-repeating number $\left(\frac{22}{7}\right)$ perfect square number: whole numbers that have whole numbers as the square root (1, 4, 9, 16,...) square root: a number that when multiplied times itself equals the number you started with $(\sqrt{36} = 6)$ squaring (squared): to multiply a number times itself			

Standardized Assessment Sample: - Complete the sequence: $2^4 = 16$; $2^3 = 8$; $2^2 = 4$; $2^1 = 2$; $2^0 = 1$; $2^{-1} = ?$; $2^{-2} = ?$ - Simplify: A. $\frac{2}{28} + \frac{1}{49}$ B. $\frac{-5}{63} + \left(\frac{-7}{99}\right)$ C. $\left(\frac{42}{22}\right)\left(\frac{75}{63}\right)$ - Find the length of an edge of a square which has an area of 81 square centimeters. - Simplify: A. $\frac{10^{-2}}{10^{-4}}$ B. $(3^8)^2$ - If $x = 16$, what is the value of x? - The square root of 170 is between: A. 12 and 13 B. 13 and 14 C. 14 and 15 D. 15 and 16 E. 16 and 17	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 2.4 and 7.5 Technology Resources: <u>Websites:</u> www.classzone.com (McDougal Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.cln.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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Subject: Mathematics
Course: Algebra Intervention
Strand: Algebra and Functions
Grade: 8 - 12

★ STAR-California Standards Test Emphasis
 (High, Medium, Low) Y= Yes
 HSEE High School Exit Exam
 S = Standard is a supporting standard for standards that are tested
 ES Essential Skill (National Level) Y = Yes
 CS Curriculum Survey
 P Priority
 ♥ Heart of the Program
 California Key Standard

Content Standard: Grade 5: Algebra and Functions 1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results.	Prerequisites • Use letters, boxes, or other symbols to stand for any number in simple expressions or equations. • Interpret and evaluate mathematical expressions that use parentheses. • Use parenthesis to indicate which operation to perform first when writing expressions containing more than two terms and different operations.	CST 1.1 Y 1.2 Y 1.3 Y 1.4 Y 1.5 Y HSEE 1.1 S 1.2 S 1.3 S 1.4 S 1.5 S ES 1.2 Y 1.4 Y 1.5 Y
Performance Indicators: 1.1 Use information taken from a graph or equation to answer questions about a problem situation. 1.2 Use a letter to represent an unknown number; write and evaluate simple algebraic expressions in one variable by substitution. 1.3 Know and use the distributive property in equations and expressions with variables. 1.4 Identify and graph ordered pairs in the four quadrants of the coordinate plane. 1.5 Solve problems involving linear functions with integer values; write the equation; and graph the resulting ordered pair of integers on the grid.		Vocabulary: axes: two number lines - one placed horizontally and one placed vertically perpendicular to each other origin: intersection of the x- and y-axis; (0, 0); zero on both number lines quadrants: the axis split the graph into four regions, known as quadrants; numbered counter-clockwise as I, II, III, and IV rectangular coordinate system: made up of two perpendicular axes – horizontal and vertical number lines x-axis: horizontal axis (number line) y-axis: vertical axis (number line)

Standardized Assessment Sample: - Which situation could be described by the expression: $c + 2\frac{1}{2}$? - Lisa jogged c miles yesterday, and $2\frac{1}{2}$ miles farther today. - Lisa jogged c miles yesterday, and $2\frac{1}{2}$ miles fewer today. - Lisa jogged $2\frac{1}{2}$ miles yesterday, and c miles fewer today. - Lisa jogged $2\frac{1}{2}$ miles yesterday, and c times as far today. - If $N = 7$, what is the value of $-4 + (1 + N)^2$ 46 54 68 60 - What value for z makes this equation true: $8 \times 37 = (8 \times 30) + (8 \times z)$? 7 8 30 37 - Which equation could have been used to create this function table? <table> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>-9</td> <td>-2</td> </tr> <tr> <td>-2</td> <td>2</td> </tr> <tr> <td>4</td> <td>8</td> </tr> <tr> <td>11</td> <td>15</td> </tr> </tbody> </table> $y = \frac{x}{2}$ $y = 2x$ $y = x - 4$ $y = x + 4$	x	y	-9	-2	-2	2	4	8	11	15	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Section 1.8 Technology Resources: <u>Websites:</u> www.classzone.com (McDougall Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.cirn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
x	y										
-9	-2										
-2	2										
4	8										
11	15										

Subject: Mathematics
Course: Algebra Intervention
Strand: Algebra and Functions
Grade: 8 - 12

STAR-California Standards Test Emphasis (High, Medium, Low)	
★	HSEE
	Y= Yes
	S = Standard is a supporting standard for standards that are tested
	Essential Skill (National Level) Y = Yes
	Curriculum Survey
	Priority
	Heart of the Program
	California Key Standard

Content Standard: Grade 6: Algebra and Functions 1.0 Students write verbal expressions and sentences as algebraic expressions and equations; they evaluate algebraic expressions, solve linear equations, and graph and interpret their results.	Prerequisites • Use information taken from a graph or equation to answer questions about a problem situation. • Use a letter to represent an unknown number; write and evaluate simple algebraic expressions in one variable by substitution. • Know and use the distributive property in equations and expressions with variables. • Identify and graph ordered pairs in the four quadrants of the coordinate plane. • Solve problems involving linear functions with integer values; write the equation; and graph the resulting ordered pair of integers on the grid.	CST 1.1 Y 1.2 Y 1.3 Y 1.4 Y	HSEE 1.1 S 1.2 S 1.3 S 1.4 S	ES 1.1 Y
Performance Indicators: 1.1 Write and solve one-step linear equations in one variable. 1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables. 1.3 Apply algebraic order of operations and the commutative, associative, and distributive properties to evaluate expressions; and justify each step in the process. 1.4 Solve problems manually by using the correct order of operations or by using a scientific calculator.	Vocabulary: Distributive Property: $a(b + c) = ab + ac = (b + c)a$ expression: an incomplete sentence; an algebraic expression contains numbers, variables, math operations, and grouping symbols equation: two expressions set equal to one another (has an equal sign) evaluate: an expression is evaluated by replacing the variable with a number and then completing the math in the expression substitution: replacing the variable with a specific number variable: a symbol, usually a letter, used to represent one or more numbers			

Standardized Assessment Sample: - What value of k makes the following equation $k \div 3 = 36$ true? A. 108 B. 98 C. 39 D. 12 - The Smith family went on a vacation. They started with \$2000. If they spent \$150 each day, which expression represents how much money they had after x days? A. $1850x$ B. $2000 - 150x$ C. $150x$ D. $2000 + 150x$ - A telephone company charges \$0.79 per minute for cellular calls to Canada and \$1.49 per minute for cellular calls to Western Europe. Which expression gives the total cost in dollars for x minutes of cellular calls to Canada and y minutes of cellular calls to Western Europe? A. $\\$0.79x + \\$1.49y$ B. $\\$0.79x - \\$1.49y$ C. $\\$2.19(x + y)$ D. $\\$2.19xy$ - The steps Johann took to evaluate the expression $3m - 3 \div 3$ when $m = 8$ are shown below: $3m - 3 \div 3 \text{ when } m = 8$ $3 \times 8 = 24$ $24 - 3 = 21$ $21 \div 3 = 7$ What should Johann have done differently in order to evaluate the expression? A. divided $(24 - 3)$ by (24×3) B. divided $(24 - 3)$ by $(24 - 3)$ C. subtracted $(3 \div 3)$ from 24 D. subtracted 3 from $(24 \div 3)$	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 4.10, 4.11, 6.13, 7.7, and 9.7 Technology Resources: <u>Websites:</u> www.classzone.com (McDougall Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.clrn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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Subject: Mathematics
Course: Algebra Intervention
Strand: Algebra and Functions
Grade: 8 - 12

★ STAR-California Standards Test Emphasis (High, Medium , Low) HSEE High School Exit Exam ES S = Standard is a supporting standard for standards that are tested CS Essential Skill (National Level) P Curriculum Survey ♥ Priority Heart of the Program California Key Standard		Y = Yes
Y = Yes Y = Yes Y = Yes Y = Yes		

Content Standard: Grade 7: Algebra and Functions 1.0 Students express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs.		Prerequisites - Know how to simplify using the order of operations. - Write and evaluate algebraic expressions, given the values of up to three variables. - Write and solve one-step linear equations in one variable.		CST 1.1 Y 1.2 Y 1.3 Y 1.4 Y 1.5 Y	HSEE 1.1 Y 1.2 Y 1.5 Y	ES 1.3 Y
Performance Indicators: 1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A). 1.2 The correct order of operations to evaluate algebraic expressions such as $3(2x + 5)^2$. 1.3 Simplify numerical expressions by applying properties of rational numbers (e.g., identity, inverse, distributive, associative, commutative) and justify the process used. 1.4 Use algebraic terminology (e.g., variable, equation, term, coefficient, inequality, expression, constant) correctly. 1.5 Represent quantitative relationships graphically and interpret the meaning of a specific part of a graph in the situation represented by the graph.		Vocabulary: Additive Identity: $a + 0 = a$ Addition Property of Opposites: $a + (-a) = 0$ coefficient: the number that multiplies the variable constant: a number by itself like terms: terms with the same variable and exponent translate: to exchange English words into math expressions or equations or to exchange math expressions or equations into English words order of operations: PEMDAS: <u>P</u> arenthesis; <u>E</u> xponents; <u>M</u> ultiplication or <u>D</u> ivision (left to right); then <u>A</u> ddition or <u>S</u> ubtraction (left to right)				

Standardized Assessment Sample: - Write each of the following verbal statements as algebraic expressions: - The square of a number, y, is increased by the sum of twice the number, y, and three. - The product of one-half of a number, w, and four is decreased by the quotient of a number, w, and -4. - Given $x = -2$ and $y = 5$, evaluate: $x^2 + 2x - 3$ $\frac{y(xy - 7)}{10}$ - Name the property illustrated by each of the following: $5(m + -m) = 5(0)$ $12(y + -y) = (y + -y)12$ $3(x + -x) = 3x + -3x$ $4(w + -w) = 4(-w + w)$ $6\left[y\left(\frac{1}{y}\right)\right] = 6(1)$ - Which one of the following inequalities represents the statement "A number, x, decreased by thirteen is less than or equal to thirty-nine."? $13 - x \geq 39$ $13 - x \leq 39$ $x - 13 \leq 39$ $x - 13 < 39$	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 4.2, 4.6, 4.8, 4.9, 5.5, 5.6, 5.7, 5.9, 6.5, 6.12, 7.2, 7.6, 7.8, 8.2, 8.6, 8.8, 9.5, 9.6, and 9.9 Technology Resources: <u>Websites:</u> www.classzone.com (McDougall Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.cln.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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Subject: Mathematics
Course: Algebra Intervention
Strand: Algebra and Functions
Grade: 8 - 12

★

HSEE

ES

CS

P

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STAR-California Standards Test Emphasis
(High, Medium, Low)

High School Exit Exam Y= Yes

S = Standard is a supporting standard for standards that are tested

Essential Skill (National Level) Y = Yes

Curriculum Survey

Priority

Heart of the Program
California Key Standard

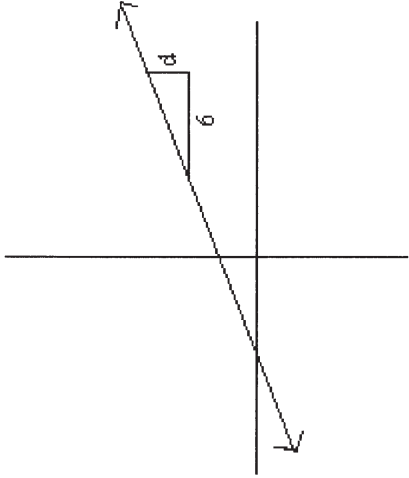
Content Standard: Grade 7: Algebra and Functions 2.0 Students interpret and evaluate expressions involving integer powers and simple roots.	Prerequisites - Simplify algebraic expressions using order of operations. - Evaluate algebraic expressions, given specific values of the variables. - Add, subtract, multiply, and divide positive and negative numbers.	CST 2.1 Y 2.2 Y	HSEE 2.1 Y 2.2 Y	ES
Performance Indicators: 2.1 Interpret positive whole-number powers as repeated multiplication and negative whole-number powers as repeated division or multiplication by the multiplicative inverse. Simplify and evaluate expressions that include exponents. 2.2 Multiply and divide monomials; extend the process of taking powers and extracting roots to monomials when the latter results in a monomial with an integer exponent.		Vocabulary: base: number being multiplied times itself exponent: used to indicate how many times a number is multiplied times itself power: exponent value		

Standardized Assessment Sample: - Simplify: $(6a^4bc)(7ab^3c)$ - Factor completely: $42x^2y^3z$ - Simplify: $\sqrt{16x^4}$ A. $4\sqrt{x^2}$ B. $4x^2$ C. $8x^2$ D. $16x^2$	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 8.3 and 8.5 Technology Resources: <u>Websites:</u> www.classzone.com (McDougall Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.clm.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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Subject: Mathematics
Course: Algebra Intervention
Strand: Algebra and Functions
Grade: 8 - 12

★ STAR-California Standards Test Emphasis
 (High, Medium, Low)
 HSEE High School Exit Exam Y= Yes
 ES S = Standard is a supporting standard for standards that are tested
 CS Essential Skill (National Level) Y = Yes
 P Curriculum Survey
 Priority
 ♥ Heart of the Program
☐ California Key Standard

Content Standard: Grade 7: Algebra and Functions 3.0 Students graph and interpret linear and some nonlinear functions.	Prerequisites • Understand the rectangular coordinate system. • Understand that the x-axis is the horizontal axis and the y-axis is the vertical axis. • Plot coordinates on the rectangular axis.	<table> <tr> <th>CST</th><th>HSEE</th><th>ES</th></tr> <tr> <td>3.1 Y</td><td>3.1 Y</td><td></td></tr> <tr> <td>3.2 Y</td><td></td><td></td></tr> <tr> <td>3.3 Y</td><td>3.3 Y</td><td>3.3 Y</td></tr> <tr> <td>3.4 Y</td><td>3.4 Y</td><td>3.4 Y</td></tr> </table>	CST	HSEE	ES	3.1 Y	3.1 Y		3.2 Y			3.3 Y	3.3 Y	3.3 Y	3.4 Y	3.4 Y	3.4 Y
CST	HSEE	ES															
3.1 Y	3.1 Y																
3.2 Y																	
3.3 Y	3.3 Y	3.3 Y															
3.4 Y	3.4 Y	3.4 Y															
Performance Indicators: 3.1 Graph functions of the form $y = nx^2$ and $y = nx^3$ and use in solving problems. 3.2 Plot the values from the volumes of three-dimensional shapes for various values of the edge lengths (e.g., cubes with varying edge lengths or a triangle prism with a fixed height and an equilateral triangle base of varying lengths). 3.3 Graph linear functions, noting that the vertical change (change in y- value) per unit of horizontal change (change in x- value) is always the same and know that the ratio ("rise over run") is called the slope of a graph. 3.4 Plot the values of quantities whose ratios are always the same (e.g., cost to the number of an item, feet to inches, circumference to diameter of a circle). Fit a line to the plot and understand that the slope of the line equals the quantities.		Vocabulary: linear equation: n equation whose graph is a straight line ordered pair: usually (x, y); indicates the value of two numbers that make the equation true; indicates position on a coordinate graph slope: $\frac{\text{rise}}{\text{run}} = \frac{\text{vertical change}}{\text{horizontal change}} = \frac{\text{change in } y}{\text{change in } x}$; $m = \frac{y_2 - y_1}{x_2 - x_1}$															

Standardized Assessment Sample: 1. If $y = 4x^2$, and $x = -3$, then $y =$? 2. If $y = 2x^3$, complete the following table: <table border="1"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr><td>-3</td><td></td></tr> <tr><td>-2</td><td></td></tr> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>3</td><td></td></tr> </tbody> </table> 3. The slope of the line below is $\frac{2}{3}$. What is the value of 'd'? A. 3 B. 4 C. 6 D. 9 	x	y	-3		-2		0		1		3		Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Sections 5.8, 9.10, and 9.11 Technology Resources: <u>Websites:</u> www.classzone.com (McDougal Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.clm.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
x	y												
-3													
-2													
0													
1													
3													

Subject: Mathematics
Course: Algebra Intervention
Strand: Algebra and Functions
Grade: 8 - 12

★ HSEE ES CS P ♥ ☐		STAR-California Standards Test Emphasis (High, Medium, Low) High School Exit Exam Y= Yes S = Standard is a supporting standard for standards that are tested Essential Skill (National Level) Y = Yes Curriculum Survey Priority Heart of the Program California Key Standard	
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Content Standard: Grade 7: Algebra and Functions 4.0 Students solve simple linear equations and inequalities over the rational numbers.	Prerequisites • Know and be able to use order of operations. • Add, subtract, multiply, and divide positive and negative numbers. • Use a variable for an unknown quantity. • Write and evaluate simple algebraic expressions in one variable by substitution. • Know and use the distributive property in equations and expressions with variables,	CST 4.1 Y 4.2 Y	HSEE 4.1 Y 4.2 Y	ES 4.1 Y 4.2 Y
Performance Indicators: 4.1 Solve two-step linear equations and inequalities in one variable over the rational numbers, interpret the solution or solutions in the context from which they arose, and verify the reasonableness of the results. 4.2 Solve multi-step problems involving rate, average speed, distance, and time or a direct variation.		Vocabulary: isolate: use mathematical operations to get the variable on one side of the equation by itself opposite: opposite of 5 is (-5); opposite of (-10) is 10 reciprocal: one divided by the number; reciprocal of 2 is $\frac{1}{2}$; reciprocal of $\frac{3}{5}$ is $\frac{5}{3}$		

Standardized Assessment Sample: - In the inequality $2x + \\$20,000 \geq \\$50,000$, x represents the living expenses of a college student. Which phrase most accurately describes the student's living expenses? - at least \$15,000 - at most \$15,000 - less than \$15,000 - more than \$15,000 - The diameter of a tree trunk varies directly with the age of the tree. A 45-year old tree has a trunk diameter of 18 inches. What is the age of a tree with a trunk diameter of 20 inches? - Solve for m: $2m - 3 = 7$ -5 -2 2 5	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Section 9.8 Technology Resources: <u>Websites:</u> www.classzone.com (McDougall Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.cirn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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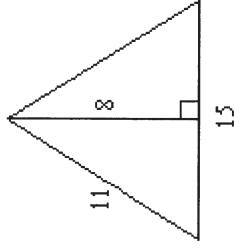
Subject: Mathematics
Course: Algebra Intervention
Strand: Measurement and Geometry
Grade: 8 - 12

STAR-California Standards Test Emphasis (High, Medium, Low)	
★	HSEE
High School Exit Exam	
S = Standard is a supporting standard for standards that are tested	
Essential Skill (National Level)	
Curriculum Survey	
Priority	
Heart of the Program	
California Key Standard	
▼	☐

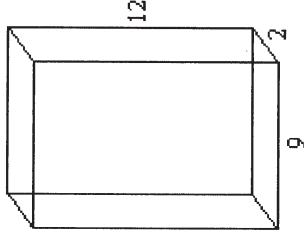
Content Standard: Grade 7: Measurement and Geometry 2.0	Prerequisites	CST	HSEE	ES
Students compute the perimeter, area, and volume of common geometric objects and use the results to find the measures of less common objects. They know how perimeter, area, and volume are affected by changes in scale. Performance Indicators: 2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders. 2.2 Estimate and compute the area of more complex or irregular two-and three-dimensional figures by breaking the figures down into more basic geometric objects. 2.3 Compute the length of the perimeter, the surface area of the faces, and the volume of a three-dimensional object built from rectangular solids. Understand that when the lengths of all dimensions are multiplied by a scale factor, the surface area is multiplied by the square of the scale factor and the volume is multiplied by the cube of the scale factor. 2.4 Relate the changes in measurement with a change of scale to the units used (e.g., square inches, cubic feet) and to conversions between units (1 square foot = 144 square inches or $1 \text{ ft}^2 = [144 \text{ in}^2]$, 1 cubic inch is approximately 16.38 cubic centimeters or $1 \text{ in}^3 = [16.38 \text{ cm}^3]$).	- Measure angles using a protractor. - Draw angles of a given measure. - Identify the special features of polygons. - Identify and sketch polygons by description. - Decide if polygons are similar. - Use scale factors to find the dimensions of similar figures. - Know the definition of perimeter and circumference. - Understand the concept of a constant, such as π (pi). - Know common estimates of π $\left(3.14, \frac{22}{7} \right)$ - Identify angles as vertical, adjacent, complementary, and/or supplemental. - Know the sum of the angles of a triangle is 180°.	2.1 Y 2.2 Y 2.3 Y 2.4 Y	2.1 Y 2.2 Y 2.3 Y 2.4 Y	Vocabulary: parallelogram: four sided polygon with two pairs of parallel sides perimeter: length/distance around the exterior of a polygon polygon: geometric figure created by segments that do not cross each other except at vertices or corner points regular polygon: polygon with all sides are congruent (equal) and all angles are congruent (equal) rectangle: parallelogram with four right angles

Standardized Assessment Sample:

1. What is the area of the triangle at the left below?

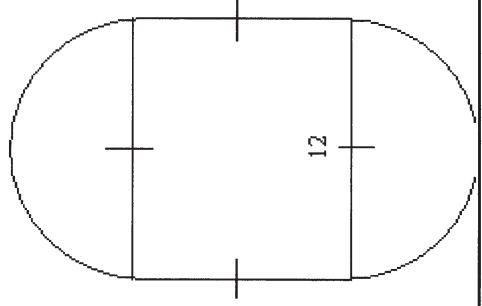


2. A cereal manufacturer needs a box that can hold twice as much as the box shown at the right above. Which of the following changes will result in the desired box? ($V = lwh$)



- A. Double the height only
- B. Double both the length and height
- C. Double both the length and width
- D. Double the length, width, and height

3. Compute the area of the figure below.



Instructional Resources:

Getting Ready for Algebra (San Diego County Office of Education)

Sections 4.3 and 7.9

Technology Resources:

Websites:

www.classzone.com (McDougal Littell website with additional practice and challenge problems specific to each lesson)

www.enc.org (Eisenhower National Clearinghouse)

www.clrn.org (California Learning Resource Network)

www.matti.usu.edu (National Library of Virtual Manipulatives)

www.ed.gov/free (Federal Resources for Educational Excellence)

www.mathforum.org (The Math Forum at Swarthmore College)

www.whyslopes.com (Appetizers and Lessons for Math and Reason)

www.exemplars.com (Standards-based Performance Assessment and Instruction)

Software:

Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato

Subject: Mathematics
Course: Algebra Intervention
Strand: Statistics, Data Analysis, and Probability
Grade: 8 - 12

STAR-California Standards Test Emphasis (High, Medium, Low)	
★ HSEE ES CS P	High School Exit Exam S = Standard is a supporting standard for standards that are tested Essential Skill (National Level) Curriculum Survey Priority
Y = Yes Y = Yes	
Heart of the Program California Key Standard	
☐	

Content Standard:	Prerequisites	CST	HSEE	ES
Grade 5: Statistics, Data Analysis, and Probability 1.0 Students display, analyze, compare, and interpret different data sets, including data sets of different sizes	- Organize, represent, and interpret numerical and categorical data and clearly communicate findings. - Be able to arrange a list of data in order from smallest to largest. - Interpret one-variable data graphs to answer questions about a situation.	1.1 Y 1.2 Y 1.4 Y 1.5 Y	1.1 S 1.2 S 1.4 S 1.5 S	1.4 Y 1.5 Y
Performance Indicators: 1.1 Know the concepts of mean, median, and mode; compute and compare simple examples to show that they may differ. 1.2 Organize and display single-variable data in appropriate graphs and representations and explain which types of graphs are appropriate for various data sets. 1.3 Use fractions and percentages to compare data sets of different sizes. 1.4 Identify ordered pairs of data from a graph and interpret the meaning of the data in terms of the situation depicted by the graph 1.5 Know how to write ordered pairs correctly; for example (x, y).		Vocabulary: x-axis: horizontal axis (number line) y-axis: vertical axis (number line)		

Standardized Assessment Sample: - What is the mode of this data set? {0, 1, 1, 2, 3, 3, 3, 5, 5, 6, 6} A. 1 B. 3 C. 5 and 6 D. 6 - Sharyn scored the following number of points in 5 dart games. 88, 96, 112, 135, 144 What is the median of these numbers? A. 56 B. 88 C. 112 D. 115 - Regina's piano teacher kept this record of Regina's progress on a song she is memorizing.	Piano Practice <table border="1"> <caption>Piano Practice Data</caption> <thead> <tr> <th>Number of Days</th> <th>Percent</th> </tr> </thead> <tbody> <tr><td>2</td><td>25</td></tr> <tr><td>3</td><td>28</td></tr> <tr><td>4</td><td>30</td></tr> <tr><td>5</td><td>32</td></tr> <tr><td>6</td><td>50</td></tr> <tr><td>7</td><td>60</td></tr> <tr><td>8</td><td>65</td></tr> <tr><td>9</td><td>68</td></tr> <tr><td>10</td><td>75</td></tr> <tr><td>11</td><td>80</td></tr> <tr><td>12</td><td>85</td></tr> </tbody> </table> How many days of practice did it take for Regina to memorize half of the song? A. 4 B. 5 C. 6 D. 8	Number of Days	Percent	2	25	3	28	4	30	5	32	6	50	7	60	8	65	9	68	10	75	11	80	12	85
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Grade: 8 - 12

★ STAR-California Standards Test Emphasis (High, Medium, Low) High School Exit Exam Y= Yes S = Standard is a supporting standard for standards that are tested Essential Skill (National Level) Y = Yes Curriculum Survey Priority ♥ Heart of the Program California Key Standard	
HSEE	
ES	
CS	
P	
☐	

Content Standard: Grade 6: Statistics, Data Analysis, and Probability 1.0 Students compute and analyze statistical measurements for data sets.	Prerequisites • Know the concepts of mean, median, and mode; compute and compare simple examples to show that they may differ. • Organize and display single-variable data in appropriate graphs and representations and explain which types of graphs are appropriate for various data sets. • Use fractions and percentages to compare data sets of different sizes.	CST 1.1 Y 1.2 Y 1.3 Y	HSEE 1.1 Y 1.2 S 1.3 S	ES
Performance Indicators: 1.1 Compute the mean, median, and mode of data sets. 1.2 Understand how additional data added to data sets may effect these computations of measures of central tendency. 1.3 Understand how the inclusion or exclusion of outliers affects measures of central tendency. 1.4 Know why a specific measure of central tendency (mean, median, mode) provides the most useful information in a given context.		Vocabulary: mean: arithmetic mean – sum of the entries in the data set (numbers) divided by the number of entries in the data set median: in a data set with an odd number of entries in a data set, the middle number of the data set when arranged from smallest to largest. In a data set with an even number of entries in a data set, the mean of the middle two numbers of the data set when arranged from smallest to largest. mode: most frequently repeated number in a data set multi-modal: data set with more than one mode		

Standardized Assessment Sample: - Sam found the mean and median of this list of numbers: 1, 3, 3 If the number 6 were added to the list, then: - the mean would increase - the mean would decrease - the median would increase - the median would decrease - Six people work at a company. Their weekly salaries are shown below. If you had to report the average weekly salary for this company, which statistic would provide the most useful information? Weekly salaries: \$600, \$625, \$635, \$675, \$700, \$2250 - mean - median - mode - range - Janet's scores on eight quizzes are shown below. What is her mean score? $\{ 8, 8, 8, 8, 9, 9, 10, 10 \}$ 8 8.25 8.5 8.75	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Section 10.1 Technology Resources: <u>Websites:</u> www.classzone.com (McDougal Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.cilm.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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Subject: Mathematics
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HSEE	High School Exit Exam	Y=	Yes
S	S = Standard is a supporting standard for standards that are tested		
ES	Essential Skill (National Level)	Y =	Yes
CS	Curriculum Survey		
P	Priority		
♥	Heart of the Program		
☐	California Key Standard		

Content Standard: Grade 6: Statistics, Data Analysis, and Probability 3.0 Students determine theoretical and experimental probabilities and use these to make predictions about events.	Prerequisites		
	- Know how to represent all possible outcomes for a simple probability situation in an organized way. - Express outcomes of experimental probability situations verbally and numerically. - Make predictions about simple probability situations.		
Performance Indicators: 3.1 Represent all possible outcomes for compound events in an organized way and express the theoretical probability of each outcome. 3.2 Use data to estimate the probability of future events. 3.3 Represent probabilities as ratios, proportions, decimals between 0 and 1, and percentages between 0 and 100 and verify that the probabilities computes are reasonable; know that if P is the probability of an event, $1 - P$ is the probability of an event not occurring. 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. 3.5 Understand the difference between independent and dependent events.	CST 3.1 Y 3.3 Y 3.4 Y 3.5 Y	HSEE 3.1 Y 3.3 Y 3.5 Y	ES 3.1 Y 3.3 Y 3.5 Y
Vocabulary: actual results: experimental probability; results of actual trials (flips of a coin, spins, tosses) expected results: theoretical probability; long range results probability: number of desired outcomes divided by the total number of possible outcomes			

Standardized Assessment Sample: 1. Ms. Jones is going to choose one person from each of two lists below to represent the class in student council. List #1: Ann, Carlos, Lisa List #2: Dave, Mia Which set shows all the possible choices of the outcomes? A. {(Ann, Carlos), (Ann, Lisa)} B. {(Ann, Dave), (Ann, Mia)} C. {(Ann, Dave), (Carlos, Mia), (Lisa, Dave), (Lisa, Mia)} D. {(Ann, Dave), (Ann, Mia), (Carlos, Dave), (Carlos, Mia), (Lisa, Dave), (Lisa, Mia)} 2. The table shows how many t-shirts of each color Paul has in his closet. <table border="1"> <thead> <tr> <th>Color</th><th>Number of T-shirts</th></tr> </thead> <tbody> <tr> <td>Green</td><td>3</td></tr> <tr> <td>Red</td><td>4</td></tr> <tr> <td>White</td><td>5</td></tr> <tr> <td>Blue</td><td>8</td></tr> <tr> <td>Total</td><td>20</td></tr> </tbody> </table> If Paul chooses a t-shirt without looking, what is the probability that it will be blue? A. 4% B. 8% C. 40% D. 60%	Color	Number of T-shirts	Green	3	Red	4	White	5	Blue	8	Total	20	Instructional Resources: Getting Ready for Algebra (San Diego County Office of Education) Section 10.5 Technology Resources: <u>Websites:</u> www.classzone.com (McDougall Littell website with additional practice and challenge problems specific to each lesson) www.enc.org (Eisenhower National Clearinghouse) www.clrn.org (California Learning Resource Network) www.matti.usu.edu (National Library of Virtual Manipulatives) www.ed.gov/free (Federal Resources for Educational Excellence) www.mathforum.org (The Math Forum at Swarthmore College) www.whyslopes.com (Appetizers and Lessons for Math and Reason) www.exemplars.com (Standards-based Performance Assessment and Instruction) <u>Software:</u> Skills Connection, Accelerated Math, Geometer's Sketchpad, and Plato
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