

**EL DORADO UNION HIGH SCHOOL DISTRICT
Educational Services**

Course of Study Information Page

Course Title: Transitional Pre-Algebra #761	
Rationale: This course will offer incoming ninth graders, who are in special education for math, the opportunity to progress toward bringing their math skills closer to grade level before entering a mainstream Algebra class in 10 th grade.	
Course Description: The Pre-Algebra SDC class is a 2 semester class that focuses on pre-algebra math standards including basic facts mastery, basic operations with multiple digits, order of operations, graphing on the coordinate plane, multiples, factoring, exponents, negative numbers, decimals, fractions, percents, and linear measurement. Students completing these 12 standards should increase their possibility of successfully completing a mainstream Algebra or Pre-Algebra class in the 10 th grade.	
How Does This Course Align With or Meet State and District Content Standards? (Please attach a copy of the standards used) –	
Length of Course:	2 semesters
Grade Level:	9
Credit: <input checked="" type="checkbox"/> Number of units: 5 per semester <input checked="" type="checkbox"/> Meets graduation requirements if taken in 9 th grade only <input type="checkbox"/> Request for UC "a-f" requirements <input type="checkbox"/> College Prep <input type="checkbox"/> Elective <input type="checkbox"/> Vocational	
Prerequisites:	None (student must have current IEP)
Department(s):	Special Education
District Sites:	All
Board of Trustees Adoption Date:	January 22, 2002
Textbook(s)/Instructional Materials:	
Date Adopted by the Board of Trustees:	

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Course Goals:

1. Prepare students for Algebra in a mainstream class
2. Increase speed and accuracy with basic addition, subtraction, multiplication, and division facts (single and multiple digit numbers)
3. Develop experience and skills in the following areas: order of operations, graphing on the coordinate plane, multiples, factoring, exponents, negative numbers, decimals, fractions, percents, and linear measurement

Student Performance Objectives:

1. See attached

Instructional Units:

1. Basic Facts Mastery
2. Basic Operations with Multiple Digits
3. Order of Operations
4. Graphing on the Coordinate Plane
5. Multiples
6. Factoring
7. Exponents
8. Negative numbers
9. Decimals
10. Fractions
11. Percents
12. Linear Measurement

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UNIT #1: Basic Facts Mastery

GOALS ADDRESSED: 1, 2

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
1. Add 100 single digit problems in 6 minutes, with 90% accuracy 2. Subtract 100 problems in 6 minutes, with 90% accuracy (answers between 0 and 20) 3. Multiply 100 problems in 6 minutes, with 90% accuracy (up through 11x11) 4. Divide 100 problems in 6 minutes, with 90% accuracy (using divisors up through 11)	1. Games and activities that emphasize speed with all basic facts 2. Weekly timed tests with emphasis on improved speed while maintaining 90% accuracy 3. Frequent homework for drill and practice 4. Individual use of flash cards for specific problem areas with each student 5. In-class competitions to reinforce speed and accuracy 6. Teach "shortcuts" for learning patterns involved with specific numbers (number families, shortcut for multiplying by 9, etc.) 7. Teach skip counting and counting by specific numbers 8. Teach number patterns

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
2.0 (Grade 3) Students calculate and solve problems involving addition, subtraction, multiplication, and division 3.0 (Grade 4) Students solve problems involving addition, subtraction, multiplication, and division of whole numbers and understand the relationships among the operations

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UNIT #2: Basic Operations with Multiple Digits

GOALS ADDRESSED: 1, 2

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
1. Add multiple digit numbers, with and without regrouping 2. Subtract multiple digit numbers, with and without regrouping 3. Multiply multiple digit numbers 4. Divide multiple digit numbers, with and without remainders	1. Review these basic skills, including sequential steps 2. Assign frequent homework to drill and practice steps, especially in weak areas for specific students 3. Teach pneumatic strategies for remembering the steps involved in long division (D addy, M ommy, S ister, B rother for D ivide, M ultiply, S ubtract, B ring down) 4. Daily warm-ups to continually practice these skills 5. <u>Math Tiles</u> to practice these skills using a hands-on approach, specifically chosen to target weak skill areas for each student

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
2.2 (Grade 5) Demonstrate proficiency with division, including division with positive decimals and long division with multi-digit divisors

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UNIT #3: Order of Operations

GOALS ADDRESSED: 1, 3

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
1. Demonstrate correct order of operations <u>without</u> parenthesis or exponents 2. Demonstrate correct order of operations <u>with</u> parenthesis and exponents	1. Teach skill 2. Teach pneumatic strategy for memorizing the correct order of operations (P lease E xcuse M y D ear A unt S ally f or P arenthesis, E xponents, M ultiplication/ D ivision, A ddition/ S ubtraction) or " PEMDAS " 3. Practice skill with daily warm-ups and homework 4. <u>Math Tiles</u> to practice these skills using a hands-on approach

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
1.2 (Grade 4) Interpret and evaluate mathematical expressions that now use parentheses

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UNIT #4: Graphing on the Coordinate Plane

GOALS ADDRESSED: 1, 3

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
1. Plot points on a graph using an "X" and a "Y" axis, including negative numbers, using a graph that is represented by single number differences between each line (each line counts by 1) 2. Plot points on a graph using an "X" and a "Y" axis, including negative numbers, using a graph that is represented by multiple number differences between each line (each line counts by 2, 5, or 10, etc.)	1. Teach the skill 2. Daily warm-ups that include reviewing this skill 3. Practice using the skill by following point-plotting exercises to create a picture 4. Practice using the skill by creating pictures using point-plotting skills for their classmates, then having their classmates follow their instructions to plot the points to create the picture intended 5. Map reading, including longitude and latitude 6. <u>Battleship</u> game

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
1.4 (Grade 5) Identify and graph ordered pairs in the four quadrants of the coordinate plane

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UNIT #5: Multiples

GOALS ADDRESSED: 1, 2, 3

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
1. Identify multiples for any digit up to 12, being able to extend to 10 multiples of that digit	1. Skip counting 2. Games and activities related to this skill 3. Warm-up exercises for review 4. <u>Math Tiles</u> for a hands-on approach with this skill

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
3.1 (Grade 2) Use repeated addition, arrays, and counting by multiples to do multiplication

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UNIT #6: Factoring

GOALS ADDRESSED: 1, 2, 3

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
1. Identify factors of a given number, <u>not including</u> prime numbers 2. Identify factors of a given number, <u>including</u> prime numbers 3. Be able to complete the factorization of a number down to it's prime factors, using a "factor tree" approach	1. Finding all the divisors or factors of a number 2. Introduce the concept of "prime numbers" 3. Introduce the skill of using "factor trees" to identify all the prime factors of any number 4. Review skill through daily warm-ups and homework 5. <u>Math Tiles</u> to reinforce this skill using a hands-on approach

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
1.3 (Grade 5) Understand and compute positive integer powers of nonnegative integers; compute examples as repeated multiplication 1.4 (Grade 5) 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

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UNIT #7: Exponents

GOALS ADDRESSED: 1, 3

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
<ol style="list-style-type: none"> 1. Recognize the meaning of an exponent 2. Rewrite an exponential number into expanded form 3. Convert an expanded number into exponential form 	<ol style="list-style-type: none"> 1. Teach the concept of exponents as repeated multiplication 2. Teach the correct use of the exponent key on their calculators 3. Practice rewriting exponents into expanded form and vice-versa 4. Allow use of calculators to figure the value of exponential numbers 5. Practice through daily warm-ups and homework

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
<ol style="list-style-type: none"> 1.3 (Grade 5) Understand and compute positive integer powers of nonnegative integers; compute examples as repeated multiplication 1.4 (Grade 5) 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 2.1 (Grade 7) Understand negative whole-number exponents. Multiply and divide expressions involving exponents with a common base

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UNIT #8 : Negative Numbers

GOALS ADDRESSED: 1, 3

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
1. Be able to locate and name coordinates on a number line, including negative numbers 2. Be able to add and subtract integers, including negative integers 3. Be able to multiply integers, including negative integers 4. Be able to divide integers, including negative integers	1. Introduce negative numbers using the "football field" approach with positive integers being represented as gaining yardage and negative integers being represented as losses of yardage. Work through several scenarios of gain and losses with students recording results on their own symbolic football field 2. Complete 10 by 10 addition grid using integers between -10 and 10 3. Complete 10 by 10 multiplication grid using integers between -10 and 10 4. Teach use of calculator key for negative numbers 5. Practice through daily warm-ups and homework

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
1.8 (Grade 4) Use concepts of negative numbers

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UNIT #9: Decimals

GOALS ADDRESSED: 1, 3

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
<ol style="list-style-type: none"> 1. Identify the decimal positions and name their place value names 2. Read aloud a decimal number up to three decimal digits 3. Be able to add and subtract decimal numbers, keeping the decimal point lined up correctly 4. Be able to multiply decimal numbers and correctly place the decimal in the answer 5. Be able to divide using decimal numbers and correctly place the decimal in the answer 6. Be able to divide and correctly figure the remainder to the hundredth place 	<ol style="list-style-type: none"> 1. Teach decimal concepts using any manipulatives available, including <u>Decimal Squares Lessons and Overhead Activities</u> 2. <u>Math Tiles</u> for a hands-on approach with practicing adding and subtracting decimal numbers 3. Game, <u>Slugger</u>, for practice using decimal numbers to the thousandth place 4. Practice through daily warm-ups and homework 5. Variety of games available through <u>Decimal Squares</u> to reinforce all concepts related to decimals 6. Game, <u>Decimal Olympics</u>, for reinforcement of adding, subtracting, multiplying, and dividing decimal numbers 7. Game, "<u>24</u>", to practice and reinforce adding, subtracting, multiplying, and dividing with decimal numbers 8. Reinforcement and practice of skills using <u>Key to Decimals Series</u> workbooks

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
<p>2.0 (Grade 4) Students extend their use and understanding of whole numbers to the addition and subtraction of simple decimals</p> <p>2.2 (Grade 4) Round two-place decimals to one decimal or the nearest whole number and judge the reasonableness of the rounded answer</p>

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UNIT #10: Fractions

GOALS ADDRESSED: 1, 3

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
1. Make equivalent fractions 2. Multiply fractions 3. Divide fractions 4. Add and subtract fractions with common denominators 5. Add and subtract fractions with unlike denominators 6. Simplify fractions to lowest terms	1. Games and activities related to fractions to reinforce concepts including, <u>Pizza Party</u> , <u>Fraction Bingo</u> , <u>Pie in the Sky</u> , <u>Fraction Zone</u> , <u>One, "24" Game</u> , etc. 2. Use <u>Key to Fractions Series</u> workbooks to teach and reinforce skills and concepts 3. Practice through daily warm-ups and homework 4. <u>Math Tiles</u> for practice using a hands-on approach 5. Use <u>Cuisen-Aire Rods</u> and <u>Fraction Stax</u> for a manipulative level

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
1.5 (Grade 4) Explain different interpretations of fractions and explain equivalents of fractions 3.1 (Grade 3) Compare fractions to show equivalency and to add and subtract simple fractions 2.4 (Grade 6) Determine the least common multiple and the greatest common divisor of whole numbers; use them to solve problems with fractions

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UNIT #11: Percents

GOALS ADDRESSED: 1, 3

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
1. Be able to convert a decimal to a percent and vice-versa 2. Identify common percent numbers and use multiplication and division skills to compute approximate amounts for those common percentages (5%, 10%, 20%, 25%, 50%, 75%) 3. Be able to use calculator to figure percentages, with or without a specific % key 4. Approximate less common percent numbers by combining skills learned for common percent numbers (15% = 10% + 5% <u>or</u> 60% = 50% + 10%)	1. Use <u>Key to Percents Series</u> workbooks to introduce and reinforce concepts 2. Use any games and activities available to practice skills 3. Use real life scenarios, or <u>Let's Go Shopping, Budget, Credit Card</u> games to reinforce and practice skills 4. Teach use of calculator % key to figure percents 5. Practice with daily warm-ups and homework

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
1.2 (Grade 5) Interpret percents as a part of a hundred; find decimal and percent equivalents for common fractions and explain why they represent the same value; compute a given percent of a whole number

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UNIT #12: Linear Measurement

GOALS ADDRESSED: 1, 3

OBJECTIVES	SUGGESTED ACTIVITIES
The student will:	
1. Be able to identify marks on a ruler to 1/8 of an inch or to a centimeter	1. Practice using rulers and reading rulers
2. Be able to accurately measure an item to 1/8 of an inch or to a centimeter	2. Use <u>Key to Measurement Series</u> workbook for practice and reinforcement of concepts
3. Be able to convert inches to feet, and feet to yards and vice-versa	3. Use daily warm-ups and homework for reinforcement and practice

Content Area Standards (Please identify the source)
The students will demonstrate content proficiency by:
1.3 (Grade 2) Measure the length of an object to the nearest inch and/or centimeter