

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

Course of Study Information Page

Course Title: Ninth Grade Algebra Readiness	
Rationale: This course will offer incoming ninth graders, who are below grade level in math skills, the opportunity to progress toward bringing their math skills closer to grade level before entering high school.	
Course Description: The Algebra Readiness is a four week class for two hours per day. Students will work on 10 standards which, if completed, should increase the possibility of successfully completing Algebra in the ninth grade. For those students not completing all of the standards in the four week session, an individualized math lab will be held during the second four week session.	
Length of Course:	Four Weeks (Summer School)
Grade Level:	Incoming 9 th Grade Students
Credit: Number of units: 2.5 <input type="checkbox"/> Meets graduation requirements <input type="checkbox"/> Request for UC "a-f" requirements <input type="checkbox"/> College Prep <input checked="" type="checkbox"/> Elective <input type="checkbox"/> Vocational	
Prerequisites:	None
Department(s):	Mathematics
District Sites:	Summer School Site
Board of Trustees Adoption Date:	April 11, 2000

STANDARDS FOR SUMMER SCHOOL ALGEBRA READINESS PROGRAM

Standard #1: Multiplication

Students will be able to state the product of two numbers (numbers from 2 to 12) accurately. Students will demonstrate mastery of this standard by:

- Completing the multiplication grid in 6 minutes with 6 or fewer errors
- Giving 20 correct products in "Dice multiplication" in under 2 minutes

Standard #2: Patterns

Students will be able to continue patterns of numbers, letters, shapes, or symbols. Students will demonstrate mastery of this standard by:

- Pattern completion quiz

Standard #3: Graphing Ordered Pairs and Measurement

Students will be able to graph ordered pairs on a Cartesian plane. Students will be able to accurately measure a given line to the nearest one-eighth of an inch and to the nearest tenth of a centimeter, and a given angle to the nearest degree. Students will demonstrate mastery of this standard by:

- Successful completion of picture project using a minimum of 15 points
- Creating a picture project of their own using at a minimum 15 points
- Successful completion of a Measurement Quiz, consisting of 2 lines and 2 angles to be measured

Standard #4: Logic and Games

Students will be able to logically deduct a solution to a problem/situation from given information. Students will be able to follow directions or rules for a game. Students will demonstrate mastery of this standard by:

- Successful and explained deduction of a "Color Square Game" solution from given information
- Successful and explained deduction of a "Number Mastermind" solution from given information
- Successful completion of a game

Standard #5: Exponents

Students will be able to simplify numbers expressed in terms of exponents and vice-versa. Students will demonstrate mastery by:

- Successful completion of a 4 question exponents quiz.

Standard #6: Number Line Graphing and Adding Integers

Students will be able to locate positions on a number line or name locations of points. Students will also be able to add integers. Students will demonstrate mastery of this standard by:

- Correctly locate 5 numbers on a number line
- Correctly name coordinate of 5 points on a number line
- Correctly complete a 10 by 10 addition grid using numbers between -10 and 10

Standard #7: Multiplying Integers

Students will be able to multiply integers. Students will demonstrate mastery of this standard by:

- Completing a 10 by 10 multiplication grid using integers between -10 and 10

Standard #8: Order of Operations

Students will be able to simplify a mathematical expression containing a combination of addition, subtraction, multiplication, division, exponents, and parentheses using the correct order of operations. Students will demonstrate mastery of this standard by:

- Completing 25 squares on the 100 number grid using 4 of the same digit with any combination of operations and/or parentheses including exponents
- Successful completion of a 4 question Order of Operations Quiz

Standard #9: Factoring

Students will be able to use factoring to solve problems involving prime numbers, multiples, factors, and divisors. Students will demonstrate mastery by:

- Prime factoring 4 different numbers
- Finding all the factors or divisors of a number

Standard #10: Reading Comprehension for Problem Solving

Students will be able to answer questions based on information provided in a given problem. Students will demonstrate mastery by:

- Word problem multiple choice quiz
- Draw a diagram of a given problem

SUMMER SCHOOL ALGEBRA READINESS PROGRAM

Standard #1: Multiplication

OBJECTIVES: The student will be able to state the product of two numbers (numbers from 2 to 12) accurately.
WAYS TO DEMONSTRATE MASTERY: <ul style="list-style-type: none">• Completing the multiplication grid in 6 minutes with 6 or fewer errors• Giving 20 correct products in "Dice Multiplication" in under 2 minutes
SUGGESTED ACTIVITIES: <ul style="list-style-type: none">• Skip counting• Fill out multiplication grid in order• Counting arrays of coins, cans, chips, desks, etc.• Dice game (roll two pairs of dice, multiply sum of red pair times the sum of the green pair)

Standard #2: Patterns

OBJECTIVES: Students will be able to continue patterns of numbers, letters, shapes or symbols
WAYS TO DEMONSTRATE MASTERY: Pattern completion quiz
SUGGESTED ACTIVITIES: <ul style="list-style-type: none">• Letters• Numbers• Shapes or symbols• Block worksheet• Island worksheet• Punch worksheet

Standard #3: Graphing Ordered Pairs and Measurement

OBJECTIVES:

Students will be able to graph ordered pairs on a Cartesian plane.
Students will be able to accurately measure a given line to the nearest one-eighth of an inch and to the nearest tenth of a centimeter and a given angle to the nearest degree

WAYS TO DEMONSTRATE MASTERY:

- Successful completion of picture project using a minimum of 15 points
- Creating a picture project of their own using a minimum 15 points
- Successful completion of a Measurement Quiz, consisting of 2 lines and 2 angles to be measured

SUGGESTED ACTIVITIES:

- Maps
- Battleship
- Find Hurtle
- Graph many points, connect to form a picture
- Graph 3 or 4 points, connect to form shape, measure sides and angles
- Turtle geometry
- Target practice (estimate angle and distance to go from starting point to target)

Standard #4: Logic and Games

OBJECTIVES:

Students will be able to logically deduct a solution to a problem/situation from given information. Students will be able to follow directions or rules for a game.

WAYS TO DEMONSTRATE MASTERY:

- Successful and explained deduction of a “Color Square Game” solution from given information
- Successful and explained deduction of a “Number Mastermind” solution from given information
- Successful completion of a game

SUGGESTED ACTIVITIES:

- Color Square
- Number Mastermind
- 3-5-7 game
- 21 (number counting game)
- Tic-tac-toe, four in a row
- Sprouts

Standard #5: Exponents

OBJECTIVES:

Students will be able to simplify numbers expressed in terms of exponents and vice-versa.

WAYS TO DEMONSTRATE MASTERY:

Successful completion of a 4 question exponents quiz

SUGGESTED ACTIVITIES:

- Perfect squares
- Whirlpool game

Standard #6: Number Line Graphing and Adding Integers

OBJECTIVES:

Students will be able to locate positions on a number line or name locations of points.
Students will also be able to add integers.

WAYS TO DEMONSTRATE MASTERY:

- Correctly locate 5 numbers on number line
- Correctly name coordinate of 5 points on number line
- Correctly complete a 10 by 10 addition grid using numbers between -10 and 10

SUGGESTED ACTIVITIES:

- Direction game (start at zero on number line and move 6, -8, -2, 4, etc. Where do you end up?)
- Line worksheet

Standard #7: Multiplying Integers

OBJECTIVES:

Students will be able to multiply integers.

WAYS TO DEMONSTRATE MASTERY:

Completing a 10 by 10 multiplication grid using integers between -10 and 10

SUGGESTED ACTIVITIES:

- Use patterns and repeated addition to discover rules
- Use grid (use 10 numbers between -10 and 10)
- Number line game (start at 1 and multiply by -5, 2, -1, etc., each time determining your new location)
- Graphing game (graph a triangle using 3 ordered pairs, then multiply or add a directed number to each coordinate [or just the x-coordinates] and graph the new shape in its new location)

Standard #8: Order of Operations

OBJECTIVES:

Students will be able to simplify a mathematical expression containing a combination of addition, subtraction, multiplication, division, exponents, and parentheses using the correct order of operations.

WAYS TO DEMONSTRATE MASTERY:

- Completing 25 squares on the 100 number grid using 4 of the same digit, with any combination of operations and/or parentheses including exponents
- Successful completion of a 4 question Order of Operations Quiz

SUGGESTED ACTIVITIES:

- Four 4's
- 1999
- Dice game (roll 4 dice and use operations to form different values)

Standard #9: Factoring

OBJECTIVES:

Students will be able to use factoring to solve problems involving prime numbers, multiples, factors, and divisors.

WAYS TO DEMONSTRATE MASTERY:

- Prime factoring 4 different numbers
- Finding all the factors or divisors of a number

SUGGESTED ACTIVITIES:

- Find sides of rectangular array given area or actual array made from coins or chips
- Find all factors of numbers 1-30
- Prime factor numbers

Standard #10: Finding area (without using formulas)

OBJECTIVES:

Students will be able to approximate area by counting the number of squares.
Students will be able to find area of squares and rectangles using multiplication.

WAYS TO DEMONSTRATE MASTERY:

- Successful completion 4-question areas quiz.

SUGGESTED ACTIVITIES:

Approximate area by counting squares of shapes drawn on graphing paper.
Graph ordered pairs, connect the points, and find the area.