COURSE TITLE	
Practical Math	
DISTRICT COURSE NUMBER **(#0805)**	4-DIGIT STATE COURSE CODE (COMPLETED BY SILT) **2400**

Rationale:	This course will offer basic math skills to students who have a current IEP. These students are earning a Certificate of Graduation and are not required to pass the High School Exit Exam. These special education students need a wide variety of math skills for success in daily life during and after their high school career.
Course Description that will be in the Course Directory:	Students will improve their proficiency in basic computational and procedural skills, develop conceptual understanding, and become more adept at problem solving.
How Does this Course align with or meet State and District content standards?	Using the state framework, mathematics content of this course will be presented in five strands: Number Sense; Algebra and Functions; Measurement and Geometry; Statistics, Data Analysis and Probability; and Mathematical Reasoning. Due to the nature of the students' needs written in their Individual Educational Plans (IEP), this math course will focus on the statewide math standards from grades 1-5, but mostly grades 2-4. Emphasis will be on a strong foundation in basic skills using technology and simulations to promote mathematics learning.

NCLB Core Subjects:

Select up to two that apply:

- [ ] Arts
- [ ] Economics
- [ ] English
- [ ] Foreign Language
- [ ] Geography
- [ ] Civics and Government
- [ ] History
- [ ] Mathematics
- [ ] Reading / Language Arts
- [ ] Science
- [x] Not Core Subject

CDE CALPADS Course Descriptors:

(See Page 2 for Definitions)

CTE TECH PREP COURSE INDICATORS	CTE COURSE CONTENT CODE	INSTRUCTIONAL LEVEL CODE
[ ] Tech Prep (32) [ ] Tech Prep & ROP (33) [ ] ROP [x] N/A	[ ] CTE Introductory (01) [ ] CTE Concentrator (02) [ ] CTE Completer (03)	[x] Remedial (35) [ ] Honors UC-Certified (39) [ ] Honors Non UC-Certified (34) [ ] College (40) [ ] N/A

Length of Course:	[x] Year [ ] Semester
Grade Level(s):	[x] 9 [x] 10 [x] 11 [x] 12

Credit:

- [x] Number of units: **10**
- [ ] Meets graduation requirements
- [ ] Request for UC "a–g" requirements

- [ ] College Prep
- [x] Elective
- [ ] Career Technical

May be repeated for credit.

Prerequisites:	None
Department(s):	Special Education
District Sites:	EDHS, ORHS, PHS, UMHS
Board of Trustees COS Adoption Date:	May 17, 2011
Textbooks / Instructional Materials:	Momentum Math, PCI Education, Kaplan Learning Services, 2007 – 1st Edition, ISBN: #PCI3082

Funding Source:	General Funds
Board of Trustees Textbook Adoption Date:	June 21, 2011

Definitions

CALPADS	California Longitudinal Pupil Achievement Data System
CTE Technical Prep	A course within a CTE technical career pathway or program that has been articulated with a postsecondary education or through an apprenticeship program of at least 2 years following secondary instruction.
Instructional Level Code	Represents a nonstandard instructional level at which the content of a specific course is either above or below a 'standard' course instructional level. These levels may be identified by the actual level of instruction or identified by equating the course content and level of instruction with a state or nationally recognized advanced course of study, such as IB or AP.
Instructional Level Honors, UC Certified	Includes all AP courses.
Instructional Level Honors, non UC Certified	Requires Board approval.
Instructional Level College	Includes ACE courses. Equivalent to college course and content, but not an AP course. Not related to section, but to course.

EL DORADO UNION HIGH SCHOOL DISTRICT

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UNIT/STANDARD #: Unit #1: Number Sense

LEARNING OUTCOME: Students will deepen their understanding of place value and improve their skill with the four basic arithmetic operations using whole numbers, as well as with fractions, decimals, and positive and negative numbers.

LEARNING OUTCOME	INSTRUCTIONAL STRATEGIES	ASSESSMENTS	INTERVENTIONS
1. What students will learn, know, and be able to do? (Must be aligned to state content standards.) a. Add, subtract, multiply, and divide whole numbers with multiple digits using a calculator when necessary. b. Round whole numbers and decimal numbers to two decimal places. c. Compute and perform addition, subtraction, multiplication, and division of decimals, money, and fractions, using a calculator when necessary. d. Factor whole numbers. e. Determine the unit cost when given the total cost and number of units. f. Determine the best buy when given the total cost for two different sizes of a product. g. Understand the concept of negative numbers.	2. Instructional strategies that will be used to engage students. a. Games and activities that emphasize the four arithmetic operations involving whole numbers, decimals, fractions, and money b. Daily instruction to teach skills, and frequent practice to reinforce learning c. Teach pneumonic devices as strategies for learning formulas, multi-step processes, memorization of procedures d. Instruction in use of calculators to assist students in increasing speed e. Reinforcement systems based on real-life monetary rewards to authenticate learning of money concepts f. Individualized instruction to allow students to progress at a successful and rigorous pace	3. How will we know that students have learned? Include both Formative (for learning) and Summative (of learning) assessment examples. a. Skill assessments b. Chapter/Unit tests c. Diagnostic tests d. Alternate forms of assessment per student IEP needs e. Observations	4. What will we do if students don't learn? Reteach using manipulatives, visual representations, technology, supplemental curriculum and materials using different strategies, modalities, styles, peer tutoring, etc. 5. What will we do if students already know it? a. Move to next higher level of same standard or skill b. Reassess student skill level and place appropriately

Content Area Standards (Please identify the source)

The students will demonstrate mastery of the following content standards:

Unit 1: Number Sense:
(Grade 1: 1.5) Identify and know the value of coins and show different combinations of coins that equal the same value.
(Grade 2: 1.0) Understand the relationship between numbers, quantities, and place value in whole numbers up to 1,000.
(Grade 3: 1.0) Understand the place value of whole numbers.
(Grade 3: 1.4) Round off numbers to 10,000 to the nearest ten, hundred, and thousand.
(Grade 4: 1.0) Understand the place value of whole numbers and decimals to two decimal places and how whole numbers and decimals relate to simple fractions.
(Grade 4: 1.6) Write tenths and hundredths in decimal and fraction notations and know the fractions and decimal equivalents for halves and fourths.
(Grade 1: 2.4) Count by 2s, 5s, and 10s to 100.
(Grade 3: 2.0) Calculate and solve problems involving addition, subtraction, multiplication, and division.
(Grade 3: 2.1) Find the sum or difference of two whole numbers between 0 and 10,000.
(Grade 3: 2.7) Determine the unit cost when given the total cost and number of units.
(Grade 4: 2.2) Round two-place decimals to one decimal or the nearest whole number and judge the reasonableness of the rounded answer.
(Grade 5: 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.
(Grade 5: 2.5) Compute and perform simple multiplication and division of fractions and apply these procedures to solving problems.
(Grade 1: 3.0) Use estimation strategies in computation and problem solving that involve numbers that use the ones, tens, and hundreds places.
(Grade 2: 3.0) Model and solve simple problems involving multiplication and division.
(Grade 3: 3.1) Compare fractions represented by drawings or concrete materials to show equivalency and to add and subtract simple fractions in context.
(Grade 3: 3.2) Add and subtract simple fractions.
(Grade 3: 3.3) Solve problems involving addition, subtraction, multiplication, and division of money amounts in decimal notation and multiply and divide money amounts in decimal notation by using wholenumber multipliers and divisors.
(Grade 3: 3.4) Know and understand that fractions and decimals are two different representations of the same concept.
(Grade 4: 3.0) Solve problems involving addition, subtraction, multiplication, and division of whole numbers and understand the relationships among the operations.
(Grade 2: 4.1) Recognize, name, and compare unit fractions from 1/12 to ½.
(Grade 2: 4.3) Know that when all fractional parts are included, such as four-fourths, the result is equal to the whole and to one.
(Grade 4: 4.0) Know how to factor small whole numbers.
(Grade 4: 4.2) Know that numbers such as 2, 3, 5, 7, and 11 do not have any factors except 1 and themselves and that such numbers are called prime numbers.
(Grade 2: 5.0) Model and solve problems by representing, adding, and subtracting amounts of money.
(Grade 2: 5.1) Solve problems using combinations of coins and bills.
(Grade 2: 5.2) Know and use the decimal notation and the dollar and cent symbols for money.
(Grade 2: 6.0) Use estimation strategies in computation and problem solving that involve numbers that use the ones, tens, hundreds, and thousands places.
(Grade 2: 6.1) Recognize when an estimate is reasonable in measurements.

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UNIT/STANDARD #: Unit #2: Algebra and Functions

LEARNING OUTCOME: Students will use number sentences with operational symbols and expressions to solve problems. They will select appropriate Symbols, operations, and properties to represent, describe, simplify, and solve number relationships.

LEARNING OUTCOME	INSTRUCTIONAL STRATEGIES	ASSESSMENTS	INTERVENTIONS
1. What students will learn, know, and be able to do? (Must be aligned to state content standards.) a. Select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number relationships. b. Represent relationships of quantities in the form of equations or inequalities. c. Recognize and extend a linear pattern. d. Use parentheses correctly in solving equations. e. Use a letter to represent an unknown number. f. Classify and sort objects based on their properties.	2. Instructional strategies that will be used to engage students. a. Relate word problems to number sentences involving an unknown number b. Practice creating and extending linear patterns at concrete, connecting, and symbolic learning levels c. Daily instruction to teach skills, and frequent practice to reinforce learning d. Teach pneumonic devices as strategies for learning formulas, multi-step processes, memorization of procedures and formulas e. Instruction in use of calculators to assist students in multi-step problems	3. How will we know that students have learned? Include both Formative (for learning) and Summative (of learning) assessment examples. a. Skill assessments b. Chapter/Unit tests c. Diagnostic tests d. Alternate forms of assessment per student IEP needs e. Observations	4. What will we do if students don't learn? Reteach using manipulatives, visual representations, technology, supplemental curriculum and materials using different strategies, modalities, styles, peer tutoring, etc. 5. What will we do if students already know it? a. Move to next higher level of same standard or skill b. Reassess student skill level and place appropriately

Content Area Standards (Please identify the source)

The students will demonstrate mastery of the following content standards:

Unit 2: Algebra and Functions:
(Grade K: 1.1) Identify, sort, and classify objects by attribute and identify objects that do not belong to a particular group.
(Grade 1: 1.1) Write, solve, and create number sentences from problem situations that express relationships involving addition and subtraction.
(Grade 2: 1.1) Use the commutative and associative rules to simplify mental calculations and to check results.
(Grade 2: 11.3) Solve addition and subtraction problems by using data from simple charts, picture graphs, and number sentences.
(Grade 3: 1.0) Select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number relationships.
(Grade 3: 1.1) Represent relationships of quantities in the form of mathematical expressions, equations, or inequalities.
(Grade 3: 1.4) Express simple unit conversions in symbolic form.
(Grade 3: 2.1) Solve simple problems involving a functional relationship between two quantities (e.g., find the total cost of multiple items given the cost per unit).
(Grade 3: 2.2) Extend and recognize a linear pattern by its rules (e.g., the number of legs on a given number of horses may be calculated by counting by 4s or by multiplying the number of horses by 4).
(Grade 4: 1.0) Use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences.
(Grade 4: 1.2) Interpret and evaluate mathematical expressions that use parentheses.
(Grade 4: 1.4) Use and interpret formulas (e.g., area = length x width or A = lw) to answer questions about quantities and their relationships.
(Grade 4: 2.1) Know and understand that equals added to equals are equal.
(Grade 4; 2.2) Know and understand that equals multiplied by equals are equal.
(Grade 5: 1.0) Use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results.
(Grade 5: 1.2) Use a letter to represent an unknown number; write and evaluate simple algebraic expressions in one variable by substitution.
(Grade 5: 1.4) Identify and graph ordered pairs in the four quadrants of the coordinate plane.

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UNIT/STANDARD #: Unit #3: Measurement and Geometry

LEARNING OUTCOME: Students will know and use common measuring units to determine length and area and know and use formulas to determine the volume of simple geometric figures. They will measure, identify, and draw angles, perpendicular and parallel lines, rectangles, and triangles by using appropriate tools.

LEARNING OUTCOME	INSTRUCTIONAL STRATEGIES	ASSESSMENTS	INTERVENTIONS
1. What students will learn, know, and be able to do? (Must be aligned to state content standards.) a. Tell time to the nearest five minutes and know relationships of time. b. Choose the appropriate tools and units to estimate and measure length and weight of given objects. c. Measure the length of an object to the nearest ¼ inch or centimeter. d. Carry out simple unit conversions. e. Use the formulas for finding the perimeter or the area of rectangles, triangles, or squares. f. Identify lines that are horizontal, vertical, parallel, and perpendicular. g. Correctly use a straight-edge, ruler, protractor, and compass. h. Know the degrees commonly associated with ¼, ½, ¾, and full turns of angles. i. Give and follow directions about location. j. Determine the duration of intervals of time in hours.	2. Instructional strategies that will be used to engage students. a. Use time references frequently when discussing daily activities b. Estimate and measure lengths and weights, then reward students whose estimations get closer with future attempts c. Games involving giving and following directions about location d. Creating geometric designs based on degrees and shapes using straight-edges, protractors, and compasses	3. How will we know that students have learned? Include both Formative (for learning) and Summative (of learning) assessment examples. a. Skill assessments b. Chapter/Unit tests c. Diagnostic tests d. Alternate forms of assessment per student IEP needs e. Observations	4. What will we do if students don't learn? Reteach using manipulatives, visual representations, technology, supplemental curriculum and materials using different strategies, modalities, styles, peer tutoring, etc. 5. What will we do if students already know it? a. Move to next higher level of same standard or skill b. Reassess student skill level and place appropriately

Content Area Standards (Please identify the source)

The students will demonstrate mastery of the following content standards:

Unit 3: Measurement and Geometry:
(Grade 1: 1.2) Tell time to the nearest half hour and relate time to events (e.g., before/after, shorter/longer).
(Grade 1: 2.1) Identify, describe, and compare triangles, rectangles, squares, and circles, including the faces of three-dimensional objects.
(Grade 1: 2.3) Give and follow directions about location.
(Grade 2: 1.0) Understand that measurement is accomplished by identifying a unit of measure, iterating (repeating) that unit, and comparing it to the item to be measured.
(Grade 2: 1.3) Measure the length of an object to the nearest inch and/or centimeter.
(Grade 2: 1.4) Tell time to the nearest quarter hour and know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year).
(Grade 2: 1.5) Determine the duration of intervals of time in hours (e.g., 11:00 a.m. to 4:00 p.m.).
(Grade 3: 1.1) Choose the appropriate tools and units (metric and U.S.) and estimate and measure the length, liquid volume, and weight/mass of given objects.
(Grade 3: 1.2) Estimate or determine the area and volume of solid figures by covering them with squares or by counting the number of cubes that would fill them.
(Grade 3: 1.3) Find the perimeter of a polygon with integer sides.
(Grade 3: 1.4) Carry out simple unit conversions within a system of measurement (e.g., centimeters and meters, hours and minutes).
(Grade 4: 1.1) Measure the area of rectangular shapes by using appropriate units, such as square centimeter, square meter, square kilometer, square inch, square yard, or square mile.
(Grade 4: 1.4) Understand and use formulas to solve problems involving perimeters and areas of rectangles and squares. Use those formulas to find the areas of more complex figures by dividing the figures into basic shapes.
(Grade 4: 2.1) Draw the points corresponding to linear relationships on graph paper (e.g., draw 10 points on the graph of the equation $y = 3x$ and connect them by using a straight line).
(Grade 4: 3.1) Identify lines that are parallel and perpendicular.
(Grade 4: 3.2) Identify the radius and diameter of a circle.
(Grade 4: 3.5) Know the definitions of a right angle, an acute angle, and an obtuse angle. Understand that 90, 180, 270, and 360 degrees are associated, respectively, with ¼, ½, and ¾, and full turns.
(Grade 5: 1.3) Understand the concept of volume and use the appropriate units in common measuring systems (i.e., cubic centimeter, cubic meter, cubic inch, cubic yard) to compute the volume of rectangular solids. (Grade 5: 1.3)
(Grade 5: 2.1) Measure, identify, and draw angles, perpendicular and parallel lines, rectangles, and triangles by using appropriate tools (e.g., straight-edge, ruler, compass, protractor, drawing software).
(Grade 5: 2.2) Know that the sum of the angles of any triangle is 180 degrees and the sum of the angles of any quadrilateral is 360 degrees and use this information to solve problems.

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UNIT/STANDARD #: Unit #4: Statistics, Data Analysis, and Probability

LEARNING OUTCOME: Students will use grids, tables, graphs, and charts to record and analyze data. They will organize, represent, and interpret numerical and categorical data and clearly communicate their findings.

LEARNING OUTCOME	INSTRUCTIONAL STRATEGIES	ASSESSMENTS	INTERVENTIONS
1. What students will learn, know, and be able to do? (Must be aligned to state content standards.) a. Make predictions for simple probability situations. b. Use a graph, chart, or table to display the results of a survey or probability experiment. c. Demonstrate an understanding of patterns and how to extend them clearly justifying their results through explanations.	2. Instructional strategies that will be used to engage students. a. Use tables, charts, and graphs from the newspaper or create them from events in daily life to teach representation of numerical information symbolically b. Use questioning strategies to help students analyze mathematical information presented in the form of tables, charts, and graphs c. Reinforce patterning through concrete, connecting, and symbolic learning levels using colors, numbers, letters, etc. d. Probability experiments and activities with small groups or partners, then analyze the resulting data e. Technology that teaches probability and graphing	3. How will we know that students have learned? Include both Formative (for learning) and Summative (of learning) assessment examples. a. Skill assessments b. Chapter/Unit tests c. Diagnostic tests d. Alternate forms of assessment per student IEP needs e. Observations	4. What will we do if students don't learn? Reteach using manipulatives, visual representations, technology, supplemental curriculum and materials using different strategies, modalities, styles, peer tutoring, etc. 5. What will we do if students already know it? a. Move to next higher level of same standard or skill b. Reassess student skill level and place appropriately

Content Area Standards (Please identify the source)

The students will demonstrate mastery of the following content standards:

Unit #4: Statistics, Data Analysis, and Probability
(Grade 1: 1.1) Sort objects and data by common attributes and describe the categories.
(Grade 1: 1.2) Represent and compare data (e.g., largest, smallest, most often, least often) by using pictures, bar graphs, tally charts, and picture graphs.
(Grade 1: 2.1) Describe, extend, and explain ways to get to a next element in simple repeating patterns (e.g., rhythmic, numeric, color, and shape).
(Grade 2: 1.0) Collect numerical data and record, organize, display, and interpret the data on bar graphs and other representations.
(Grade 2: 2.1) Recognize, describe, and extend patterns and determine a next term in linear patterns (e.g., 4, 8, 12, . . .; the number of ears on one horse, two horses, three horses, four horses).
(Grade 2: 2.2) Solve problems involving simple number patterns.
(Grade 3: 1.2) Record the possible outcomes for a simple event (e.g., tossing a coin) and systematically keep track of the outcomes when the event is repeated many times.
(Grade 3: 1.3) Summarize and display the results of probability experiments in a clear and organized way (e.g., use a bar graph or a line plot).
(Grade 4: 1.0) Organize, represent, and interpret numerical and categorical data and clearly communicate their findings. (Grade 4: 1.0)
(Grade 4. 2.0) Make predictions for simple probability situations.
(Grade 5: 1.0) Display, analyze, compare, and interpret different data sets, including data sets of different sizes.
(Grade 5: 1.5) Know how to write ordered pairs correctly; for example, (x,y).

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UNIT/STANDARD #:   Unit #5: Mathematical Reasoning

LEARNING OUTCOME: Students will make decisions about how to approach problems. They will use strategies, skills, and concepts in finding solutions. Students will move beyond a particular problem by generalizing to other situations.

LEARNING OUTCOME	INSTRUCTIONAL STRATEGIES	ASSESSMENTS	INTERVENTIONS
1. What students will learn, know, and be able to do? (Must be aligned to state content standards.) a. Determine when and how to break a problem into simpler parts. b. Use estimation to verify the accuracy of calculated results. c. Develop generalizations of the results obtained and apply them in other circumstances. d. Apply strategies and results from simpler problems to more complex problems.	2. Instructional strategies that will be used to engage students. a. Model and explain thoroughly the thought process and steps involved in attaching and attempting a new problem b. Allow students to attempt strategies with simpler problems to develop their process and allow them to learn how to communicate through the steps, strategies, and mathematical thinking used c. Allow students to attempt more challenging problems at their own pace in a safe environment, with encouragement for their mathematical thinking, rather than for correct answers d. Technology can offer a wide variety of problem-solving situations that are reinforcing, motivating, and can be individualized	3. How will we know that students have learned? Include both Formative (for learning) and Summative (of learning) assessment examples. a. Skill assessments b. Chapter/Unit tests c. Diagnostic tests d. Alternate forms of assessment per student IEP needs e. Observations	4. What will we do if students don't learn? Reteach using manipulatives, visual representations, technology, supplemental curriculum and materials using different strategies, modalities, styles, peer tutoring, etc. 5. What will we do if students already know it? a. Move to next higher level of same standard or skill b. Reassess student skill level and place appropriately

Content Area Standards (Please identify the source)

The students will demonstrate mastery of the following content standards:

Unit #5: Mathematical Reasoning:
(Grade 3: 1.0) Make decisions about how to approach problems.
(Grade 3: 1.1) Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.
(Grade 3: 1.2) Determine when and how to break a problem into simpler parts.
(Grade 3: 2.0) Use strategies, skills, and concepts in finding solutions.
(Grade 3: 2.1) Use estimation to verify the reasonableness of calculated results.
(Grade 3: 2.2) Apply strategies and results from simpler problems to more complex problems.
(Grade 3: 2.3) Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.
(Grade 3: 2.4) Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.
(Grade 3: 2.5) Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.
(Grade 3: 2.6) Make precise calculations and check the validity of the results from the context of the problem.
(Grade 3: 3.0) Move beyond a particular problem by generalizing to other situations.
(Grade 3: 3.1) Evaluate the reasonableness of the solution in the context of the original situation.
(Grade 3: 3.2) Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.
(Grade 3: 3.3) Develop generalizations of the results obtained and apply them in other circumstances.