MATHEMATICS

Level 6.0 - 8.9 • (Intermediate High Basic Education)

Literacy Completion Point D

Student:_____ ID #: _____ Entry Date:_____

Institution: _____ Date Achieved:_____

Site: _____ Instructor(s): _____

Program Number: 9900000
Course Number: 9900001
CIP Number: 1532.010200

PLEASE CHECK CORRESPONDING BOX AS EACH STANDARD IS ACHIEVED.

STANDARD 30

☐ **Understand theories related to numbers**

Date:_____ Instructor:_____

The student will be able to:

30.01 Understand and apply basic number theory concepts; including, primes, composites, factors, and multiples.

30.02 Understand commutative and associative properties, e.g., 6 x 2 = 2 x 6; 1 + 3 + 4 = 3 + 1 + 4.

STANDARD 31

☐ **Demonstrate proficiency in solving problems involving geometry**

Date:_____ Instructor:_____

The student will be able to:

31.01 Understand the concepts of spatial relationships, symmetry, reflections, congruency, and similarity.

31.02 Recognize and apply geometric formulas for perimeter and area of squares, rectangles and triangles, and cubes and rectangular solids.

31.03 Represent and apply a variety of strategies and geometric properties and formulas for 2 - and 3 - dimensional shapes to solve real-world and mathematical problems.

STANDARD 32

☐ **Demonstrate proficiency in number sense, concepts, and operations involving fractions**

Date:_____ Instructor:_____

The student will be able to:

32.01 Associate fractions to their respective spoken names, written names, and numerals.

32.02 Locate fractions on a number line.

32.03 Understand the relative size of fractions.

32.04 Identify concrete and symbolic representations of fractions in real-world situations.

32.05 Add whole numbers, fractions, and mixed numbers with and without common denominators.

32.06 Subtract whole numbers, fractions, and mixed numbers with or without regrouping.

32.07 Multiply common fractions, mixed numbers, and whole numbers.

32.08 Divide fractions.

32.09 Divide whole numbers, fractions, and mixed numbers.

32.10 Perform multiple operations using common fractions, mixed numbers, and whole numbers.

32.11 Select the appropriate operation to solve specific problems involving fractions.

32.12 Solve real-world problems involving fractions.

STANDARD 33

☐ **Demonstrate proficiency in number sense, concepts, and operations involving decimals**

Date:_____ Instructor:_____

The student will be able to:

33.01 Locate decimals on a number line.

33.02 Order a sequence of decimal numbers from smallest to largest.

33.03 Multiply a decimal by a whole number and another decimal.

33.04 Divide a decimal by a whole number and a decimal.

33.05 Divide a whole number by a decimal.

33.06 Convert mixed numbers to decimals or fractions.

33.07 Select the appropriate operation to solve specific problems involving decimals.

33.08 Solve real-world problems involving decimals.

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STANDARD 34

☐ **Demonstrate proficiency in the mastery of number sense, concepts, and operations involving ratios and proportions**

Date:_____ Instructor:_____

The student will be able to:

34.01 Associate ratios to their respective spoken names, written names, and numerals.
34.02 Understand the concept of ratio and proportion.
34.03 Identify concrete and symbolic representations of ratios in real-world situations.
34.04 Understand that ratios can be represented in other equivalent forms.
34.05 Select when to solve specific problems by using ratios or proportions.
34.06 Solve real-world problems involving ratios and proportions.
34.07 Demonstrate the process of cross-multiplying to solve proportion.

STANDARD 35

☐ **Demonstrate proficiency in the mastery of number sense, concepts, and operations involving percents**

Date:_____ Instructor:_____

The student will be able to:

35.01 Associate percents to their respective spoken names, written names, and numerals.
35.02 Understand the relative size of percents.
35.03 Identify concrete and symbolic representations of percents in real-world situations.
35.04 Understand that percents can be represented in a variety of equivalent forms.
35.05 Convert between fractions, decimals, and percents.
35.06 Find a percent of a number.
35.07 Find what percent one number is of another.
35.08 Find the total when a percent is given.
35.09 Solve real-world problems involving percents.
35.10 Determine sales tax on a purchase when given the tax rate.

STANDARD 36

☐ **Demonstrate proficiency in number sense, concepts, and operations involving integers**

Date:_____ Instructor:_____

The student will be able to:

36.01 Associate integers to their respective spoken names, written names, and numerals.
36.02 Identify concrete and symbolic representations of integers to real world situations, e.g., temperature.
36.03 Locate integers on a number line.
36.04 Understand the relative size of integers.
36.05 Add, subtract, multiply, and divide integers.
36.06 Solve simple problems by applying the algebraic order of operations.
36.07 Select the appropriate operation to solve specific problems involving integers.
36.08 Solve real-world problems involving integers.
36.09 Find squares of numbers 1 – 20.
36.10 Find square roots of perfect squares.
36.11 Write algebraic expressions, e.g., 2x; 2m – 10.
36.12 Solve one-step equations involving any of the mathematical operations, e.g., x + 9 – 27; x/4 = 3; x – (-4) = 2.

STANDARD 37

☐ **Demonstrate proficiency in number sense, concepts, and operations involving geometry**

Date:_____ Instructor:_____

The student will be able to:

37.01 Recognize and understand the basic properties of the following geometric shapes in two and three dimensions: circle, square, rectangle, triangle, parallelogram, pentagon, cube, rectangular solid, pyramid, cone, and cylinder.
37.02 Recognize types of angles (acute, obtuse, straight, and right).
37.03 Recognize types of triangles (equilateral, right, scalene, and isosceles).
37.04 Know the number of degrees in a triangle and a quadrilateral.
37.05 Use appropriate geometric vocabulary (parallel, perpendicular, similar, and congruent) to write a description of a figure or a picture composed of geometric figures.
37.06 Recognize and apply geometric formulas for perimeter, area, and circumference.
37.07 Recognize and apply geometric formulas for volume of three-dimensional shapes including cubes, rectangular solids, and cylinders.
37.08 Represent and apply a variety of strategies and geometric properties and formulas for 2- and 3-dimensional shapes to solve real-world and mathematical problems.

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STANDARD 38

☐ **Use estimation skills to problem solve and compute**

Date:_____ Instructor:_____

The student will be able to:

38.01 Use estimation strategies to predict results and to check the reasonableness of data.

38.02 Use estimates to solve real-world problems of length, perimeter, area, mass, volume, and capacity.

38.03 Use estimates to solve real-world problems of money, time, and temperature.

38.04 Use rounding techniques to estimate the solution to a real-world addition or subtraction measurement problem; then determine the actual result.

38.05 Use a variety of strategies estimating lengths, widths, time intervals, and money, and compare them to actual measurements.

38.06 Solve real-world and mathematical problems with the help of estimating measurements, e.g., length, time, weight and mass, temperature, money, perimeter, area, and volume in either the customary* system or in the metric system.

*Customary refers to the system of measurement used in the United States.

STANDARD 39

☐ **Demonstrate proficiency in measuring quantities and solving problems related to measurement**

Date:_____ Instructor:_____

The student will be able to:

39.01 Identify the customary* measures most appropriate for a given situation.

39.02 Convert within the customary* system of measures for length, weight, or capacity, e.g., yards, feet, inches, tons, pounds, ounces, cups, pints, quarts, or gallons.

39.03 Solve linear measurement problems with inches, feet, or yards.

39.04 Solve capacity problems with cups, pints, quarts, or gallons.

39.05 Solve mass/weight problems with ounces, pounds, or tons.

39.06 Identify metric units of measure for length, weight/mass, or capacity (meter, gram, or liter) most appropriate for a given situation.

39.07 Associate prefixes used in the metric system with the decimal equivalents (kilo, deci, centi, and milli).

39.08 Convert within the metric system measures from one prefix to another.

39.09 Solve problems involving units of measure, and convert answers to a larger or smaller unit within either the metric or customary systems*.

39.10 Select and use appropriate instruments, technology, and techniques to measure quantities in order to achieve specified degrees of accuracy in a problem situation.

*Customary refers to the system of measurement used in the United States.

STANDARD 40

☐ **Understand and apply theories related to numbers**

Date:_____ Instructor:_____

The student will be able to:

40.01 Use number concepts including primes, factors, and multiples to build number sequences.

40.02 Use place value concepts of grouping based on powers of 10 (10, 100, 1,000, 10,000, 100,000, and 1,000,000).

40.03 Understand the structure of number systems other than the decimal number system (Roman number system).

STANDARD 41

☐ **Interpret data from graphs, charts, and maps**

Date:_____ Instructor:_____

The student will be able to:

41.01 Interpret and compare data from pictographs, circle graphs, bar graphs, and line graphs.

41.02 Use data from charts and tables to solve real-world problems, e.g., determine tax on purchases using a sales tax table or calculate tax from a withholding tax schedule or income tax schedule.

41.03 Understand and apply the concepts of mean and median.

41.04 Use a scale to measure distance on a map.

41.05 Use given information and a time zone map to calculate arrival time according to a given time zone.

41.06 Use a map showing time zones to determine the time in one location given the specified time in another.

STANDARD 42

☐ **Demonstrate proficiency in consumer math skills**

Date:_____ Instructor:_____

The student will be able to:

42.01 Calculate and compare the unit prices for different sizes of food containers and for different brands using a calculator or pencil and paper.

42.02 Use the sales tax rate to calculate sales tax and total cost of a purchase.

42.03 Compute discounts and sale prices.

42.04 Interpret interest and interest-earning savings plans.

42.05 Use the required percentage down payment rate and the total purchase price to calculate the actual amount of down payment and balance to be financed on long-term purchases.

42.06 Calculate a checkbook balance from a recorded register using a calculator or paper and pencil.

42.07 Interpret bank statements and computer-generated banking receipts.

Administrator:_____ Instructor: _____

Signatures verify achievement of LITERACY COMPLETION POINT D Effective: _____/_____/_____