

MATHEMATICS

Level 6.0 - 8.9 • (Functional)

Student: _____	ID # _____	Entry Date: _____
Institution: _____	Date Achieved: _____	
Site: _____	Instructor(s): _____	

PLEASE CHECK CORRESPONDING BOX AS EACH STANDARD IS ACHIEVED.

STANDARD 34

The student demonstrates proficiency in number sense, concepts, and operations involving fractions.

Date: _____ Instructor: _____

Benchmarks:

- 34.1 Associating verbal names, written word names, and standard numerals with fractions;
- 34.2 Locating fractions on a number line;
- 34.3 Understanding the relative size of fractions;
- 34.4 Identifying concrete and symbolic representations of fractions in real-world situations;
- 34.5 Adding whole numbers, fractions, and mixed numbers with and without common denominators;
- 34.6 Subtracting whole numbers, fractions, and mixed numbers with no regrouping;
- 34.7 Subtracting whole numbers, fractions, and mixed numbers with regrouping;
- 34.8 Multiplying common mixed fractions, mixed numbers, and whole numbers;
- 34.9 Dividing fractions;
- 34.10 Dividing whole numbers, fractions, and mixed numbers;
- 34.11 Performing multiple operations using common fractions, mixed numbers, and whole numbers;
- 34.12 Selecting the appropriate operation to solve specific problems involving fractions;
- 34.13 Solving real-world problems involving fractions.

STANDARD 35

The student demonstrates proficiency in number sense, concepts, and operations involving decimals.

Date: _____ Instructor: _____

Benchmarks:

- 35.1 Locating decimals on a number line;
- 35.2 Ordering a sequence of decimal numbers from smallest to largest;
- 35.3 Multiplying a decimal by a whole number or another decimal;
- 35.4 Dividing a decimal by a whole number;
- 35.5 Dividing a decimal by a decimal;
- 35.6 Dividing a whole number by a decimal;
- 35.7 Converting mixed numbers to decimal fractions;
- 35.8 Selecting the appropriate operation to solve specific problems involving decimals;
- 35.9 Solving real-world problems involving decimals.

STANDARD 36

The student demonstrates proficiency in number sense, concepts, and operations involving ratios and proportions.

Date: _____ Instructor: _____

Benchmarks:

- 36.1 Associating verbal names, written word names, and standard numerals with ratios;
- 36.2 Understanding the concept of a ratio and proportion;
- 36.3 Identifying concrete and symbolic representations of ratios in real-world situations;
- 36.4 Understanding that ratios can be represented in other equivalent forms;
- 36.5 Selecting when to solve specific problems by using ratios and proportions;
- 36.6 Solving real-world problems involving ratios and proportions;
- 36.7 Demonstrating the process of cross-multiplying to solve proportion.

STANDARD 37

The student demonstrates proficiency in number sense, concepts, and operations involving percents.

Date: _____ Instructor: _____

Benchmarks:

- 37.1 Associating verbal names, written word names, and standard numerals with percents;
- 37.2 Understanding the relative size of percents;
- 37.3 Identifying concrete and symbolic representations of percents in real-world situations;
- 37.4 Understanding that percents can be represented in a variety of equivalent forms;
- 37.5 Converting between fractions, decimals, and percents;
- 37.6 Finding a percent of a number;
- 37.7 Finding what percent one number is of another;
- 37.8 Finding the total when a percent is given;
- 37.9 Solving real-world problems involving percents;
- 37.10 Determining sales tax on a purchase when given the tax rate;
- 37.11 Using the interest formula ($i = prt$).

Continued on back

STANDARD 38

- The student demonstrates proficiency in number sense, concepts, and operations involving integers.

Date: _____ Instructor: _____

Benchmarks:

- 38.1 Associating verbal names, written word names, and standard numerals with integers;
- 38.2 Identifying concrete and symbolic representations of integers in real world situations (for example: temperature);
- 38.3 Locating numbers on a number line;
- 38.4 Understanding the relative size of integers;
- 38.5 Adding integers;
- 38.6 Subtracting integers;
- 38.7 Multiplying integers;
- 38.8 Dividing integers;
- 38.9 Solving simple problems by applying the algebraic order of operations;
- 38.10 Selecting the appropriate operation to solve specific problems involving integers;
- 38.11 Solving real world problems involving integers;
- 38.12 Finding square of numbers $1 - 20$;
- 38.13 Finding square roots of perfect squares;
- 38.14 Writing algebraic expressions (for example: $2x$, $2m - 10$);
- 38.15 Solving one step equations involving any of the mathematical operations (for example: $x + 9 - 27 = 2$, $x/4 = 3$, $x - (-4) = 2$);
- 38.16 Solving two step equations.

STANDARD 39

- The student demonstrates proficiency in number sense, concepts, and operations involving geometry.

Date: _____ Instructor: _____

Benchmarks:

- 39.1 Recognizing and understanding the basic properties of the following geometric shapes in two and three dimensions: circle, square, rectangle, triangle, trapezoid, parallelogram, pentagon, hexagon, octagon, cube, rectangular solid, triangular prism, pyramid, cone, cylinder;
- 39.2 Recognizing types of angles (acute, obtuse, straight, right, reflex);
- 39.3 Recognizing types of triangles (equilateral, right, scalene, isosceles);
- 39.4 Knowing the number of degrees in a triangle and a quadrilateral;
- 39.5 Using appropriate geometric vocabulary (parallel, perpendicular, similar, congruent) to write a description of a figure or a picture composed of geometric figures;
- 39.6 Recognizing and applying geometric formulas for perimeter;
- 39.7 Recognizing and applying geometric formulas for area;
- 39.8 Recognizing and applying geometric formulas for circumference;
- 39.9 Recognizing and applying geometric formulas for volume of three-dimensional shapes including cubes, rectangular, solids, and cylinders;
- 39.10 Understanding geometric concepts, including flips, slides, turns, enlargements, symmetry, reflections, similarity, perpendicularity, parallelism;
- 39.11 Predicting and verifying patterns involving tessellation (a covering of a plane with congruent copies of the same pattern with no holes and no overlaps, like floor tiles);
- 39.12 Representing and applying a variety of strategies and

geometric properties and formulas for two- and three-dimensional shapes to solve real-world and mathematical problems.

STANDARD 40

- The student uses estimation skills to problem solve and compute.

Date: _____ Instructor: _____

Benchmarks:

- 40.1 Using estimation strategies to predict results and to check the reasonableness of data;
- 40.2 Using estimates to solve real-world problems of length, perimeter, area, mass, volume, and capacity;
- 40.3 Using estimates to solve real-world problems of money, time, and temperature;
- 40.4 Using rounding techniques to estimate the solution to a real-world addition or subtraction measurement problem, then determining the actual result;
- 40.5 Using a variety of strategies, estimating lengths, widths, time intervals, and money and comparing them to actual measurements;
- 40.6 Solving real-world and mathematical problems by estimating measurements (for example: length, time, weight/mass, temperature, money, perimeter, area, volume) in either U.S. system or in metric units.

STANDARD 41

- The student demonstrates proficiency in measuring quantities and solving problems related to measurement.

Date: _____ Instructor: _____

Benchmarks:

- 41.1 Identifying the U.S. measures most appropriate for a given situation;
- 41.2 Converting within the U.S. system of measures for length, weight, or capacity (for example: yards - feet - inches; tons - pounds - ounces; cups - pints - quarts - gallons);
- 41.3 Solving linear measurement problems with inches, feet, or yards;
- 41.4 Solving capacity problems with cups, pints, quarts, or gallons;
- 41.5 Solving mass/weight problems with ounces, pounds, or tons;
- 41.6 Identifying metric units of measure for length, weight/mass, or capacity (meter, gram, liter) most appropriate for a given situation;
- 41.7 Associating prefixes used in the metric system with their decimal equivalents (kilo, deci, centi, milli);
- 41.8 Converting within the metric system measures from one prefix to another;
- 41.9 Solving problems involving units of measure and converting answers to a larger or smaller unit within either the metric or U.S. system;
- 41.10 Selecting and using appropriate instruments, technology, and techniques to measure quantities in order to achieve specified degrees of accuracy in a problem situation.

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STANDARD 42

- The student understands and applies theories related to numbers.

Date: _____ Instructor: _____

Benchmarks:

- 42.1 Using number concepts including primes, factors, and multiples to build number sequence;
- 42.2 Understanding distributive property [for example: $6(4 + 2) = 6 \times 4 + 6 \times 2$];
- 42.3 Using place value concepts of grouping based on powers of 10 (1, 10, 100, 1,000, 10,000, 100,000, 1,000,000);
- 42.4 Understanding the structure of number systems other than the decimal number system (Roman number system).

STANDARD 43

- The student interprets data from graphs, charts, and maps.

Date: _____ Instructor: _____

Benchmarks:

- 43.1 Interpreting and comparing data from pictographs;
- 43.2 Interpreting and comparing data from bar graphs;
- 43.3 Interpreting and comparing data from line graphs;
- 43.4 Interpreting and comparing data from circle graphs;
- 43.5 Using data from charts and tables to solve real-world problems (for example: determining tax on purchases using sales tax table or calculating tax from a withholding tax schedule or income tax schedule);
- 43.6 Understanding and applying the concepts of mean and median;
- 43.7 Using a scale, measuring distance on a map;
- 43.8 Using given information and a time zone map, calculating arrival time according to a given time zone;
- 43.9 Using a map showing time zones, determining the time in one location given the specified time in another.

STANDARD 44

- The student demonstrates proficiency in consumer math skills.

Date: _____ Instructor: _____

Benchmarks:

- 44.1 Calculating and comparing the unit prices for different sizes of food containers and for different brands using a calculator or pencil and paper;
- 44.2 Using the sales tax rate to calculate sales tax and total cost of a purchase;
- 44.3 Computing discounts and sale prices;
- 44.4 Interpreting interest and interest-earning savings plans;
- 44.5 Using the required percentage down, interest rate, and the total purchasing price to calculate the actual amount of down payment and balance to be financed on long term purchases;
- 44.6 Calculating a finance charge from a given percentage rate;
- 44.7 Calculating a checkbook balance from a recorded register using a calculator or paper and pencil.

LITERACY COMPLETION POINT D