Mathematics Standard 1: Recognize and Compare Numbers					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	**Level 2 Beginning Basic Education**	**Level 3 Intermediate Basic Education**	**Level 4 High Intermediate Basic Education**	**Level 5 Low Adult Secondary Education**	**Level 6 High Adult Secondary Education**
1.1 Count and read whole numbers between 0 and 100. **Examples** * Label days of the month with numbers. * Count to do a simple inventory of stock. * Determine number of hours an employee is scheduled to work from a weekly work schedule.	1.2 Count and read whole numbers between 0 and 1000. Identify place value in whole numbers through thousands. **Examples** * Label decades in a century with whole numbers.	1.3 Count and read any positive, whole number. Recognize and describe the meaning of numerators and denominators in fractions. Identify mixed numbers. Recognize the fractional equivalent of a mixed number. Identify place value in decimals. **Examples** *Write the correct fraction to represent three pieces of a pizza that was cut into 8 equal pieces. * Count change on customers' purchases.	1.4 Compare and order decimals. Compare and order fractions. Recognize and describe the meaning of percents. Recognize and use equivalencies between fractions, decimals, and percents. **Examples** * Order the fractions from least to greatest given 0.1, 0.2, 0.02, 0.001 *Calculate to percent and decimal equivalent to receiving ¼ off on a purchase.	1.5 Compare, convert, and order non-equivalent forms of commonly used fractions, decimals, and percents. **Examples** * Decide which product to buy based on a comparison of nutritional information. * Analyze effects of deductions on earnings and project annual income. * Compare the prices of three different autos, calculate the average price, and determine if each one is less than, greater than, or equal to the average price.	1.6 Recognize and compare integers (both positive and negative). **Examples** * Determine the cost of attending higher education or job training. * Make a decision about how to consolidate bills and credit card payments. *Compare interest rates for loans and credit cards. * Demonstrate how to identify and calculate a negative balance in a checkbook or balance sheet.

Mathematics Standard 2: Mathematical Symbols					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 **Beginning ABE Literacy**	**Level 2** **Beginning Basic Education**	**Level 3** **Intermediate Basic Education**	**Level 4** **High Intermediate Basic Education**	**Level 5** **Low Adult Secondary Education**	**Level 6** **High Adult Secondary Education**
2.1 Identify and use mathematical symbols (+, -, =) and words that represent those symbols. **Examples** * Use mathematical symbols to represent three plus five. *Use a basic calculator to add or subtract whole numbers up to 100.	2.2 Identify and use mathematical symbols (x, ÷) and words that represent those symbols for multiplication and division. **Example** *Use a basic calculator to add, subtract, multiply, and divide whole numbers up to 1000.	2.3 Identify and use mathematical symbols (>, <, ≠) and words that represent those symbols. **Examples** * Compare prices from different advertisements, e.g. school supplies, groceries, clothing. *Read and correctly interpret symbols on boxes and shipping labels in the workplace.	2.4 Identify and use mathematical symbols (≥, ≤) and words that represent those symbols. **Examples** * Decide which product to buy based on a comparison of nutritional information. *Interpret workplace memoranda that use mathematical symbols.	2.5 Identify and use mathematical symbols [$\sqrt{}$, $\angle$, ^{0}, ( )] and words that represent those symbols. Identify and compute powers and roots. **Examples** * Calculate the length of one side given the area of a square flowerbed.	2.6 Identify and use mathematical symbols ($\sqrt[n]{}$, [ ], { }) and words that represent those symbols. Understand the meaning of absolute value. (e.g. |-8| =8). **Examples** * Calculate the absolute value of the difference of the altitudes a mountain 1000 feet above sea level and a valley 250 feet below sea level.

Mathematics Standard 3: Number Line and Grids					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 **Beginning ABE Literacy**	**Level 2** **Beginning Basic Education**	**Level 3** **Intermediate Basic Education**	**Level 4** **High Intermediate Basic Education**	**Level 5** **Low Adult Secondary Education**	**Level 6** **High Adult Secondary Education**
3.1 Plot natural numbers on a horizontal number line. **Examples** *  Plot the first five days of the week using the number line. *Read a simple timeline of events planned for a 30-day period	3.2 Plot natural numbers on a vertical number line. **Examples** * Plot the daily temperature on a vertical number line over a set period of time. *Read a thermometer or other measuring tool that has vertically listed numbers. *Read a tire gauge	3.3 Plot points in Quadrant I of a coordinate grid. Read and understand integers (positive and negative numbers) as showing direction and change on both horizontal and vertical number lines. **Examples** * Plot age and weight of children on a growth chart. *Read a bar or line graph.	3.4 Plot points in all four quadrants of a coordinate grid. **Examples** * Plot the path of hurricanes based on given coordinates. *Use grid coordinates to locate places on a map for making deliveries	3.5 Identify positive and negative slopes on a coordinate grid. Graph linear equations. **Examples** *Determine the slope of a line given this equation: $y = 3x + 2$ *Determine slope necessary for loading and unloading heavy cartons or equipment	3.6 Find slope and distance on a coordinate grid. **Examples** * Given the points (0, 2) and (3,-4), find the slope of a line.

Mathematics Standard 4: Application of Mathematical Operations					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	**Level 2 Beginning Basic Education**	**Level 3 Intermediate Basic Education**	**Level 4 High Intermediate Basic Education**	**Level 5 Low Adult Secondary Education**	**Level 6 High Adult Secondary Education**
4.1 Model and apply meanings of addition (such as counting or combining) and subtraction (such as taking away or separating inverse operations) of one-digit whole numbers. **Examples** * Add the ages of two 3-year olds and one 2-year old. *Determine the number of items added to or sold in an inventory- up to 100- using addition and subtraction	4.2 Model and apply meanings of addition and subtraction of two- and three-digit whole numbers. **Examples** * Add the ages of any three ninth graders *****Calculate and maintain basic inventory	4.3 Model and apply meanings of addition and subtraction of decimals. Model meanings of multiplication and division (inverse operations) using facts through 12 x 12. **Examples** * Balance a checking account *Use manipulatives, mental math, a calculator, or paper and pencil to calculate how much it will cost for 2 people to go to the movies *Make correct change without the use of a computer	4.4 Model and apply meanings of four basic math operations (i.e., addition, subtraction, multiplication, division) using whole numbers, fractions, and decimals **Examples** * Estimate and determine weekly pay based on a consistent, predictable pattern, such as $5 per hour * Divide a restaurant check evenly for a group of 5 people *Calculate existing inventory using appropriate mathematical operations	4.5 Model and apply meanings of addition, subtraction, multiplication, and division using integers. **Examples** * Develop a budget for a home or business * Choose which car to buy based on information such as down payment required, monthly installations, mileage, and insurance costs *****Calculate productivity over a period of time	4.6 Use four basic operations with exponents, including addition and subtractions of like terms and multiplication and division of monomials. **Examples** * Analyze effects of deductions on earnings and project annual income * Fill out personal or business income tax forms *****Maintain financial records

Mathematics Standard 5: Currency					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	**Level 2 Beginning Basic Education**	**Level 3 Intermediate Basic Education**	**Level 4 High Intermediate Basic Education**	**Level 5 Low Adult Secondary Education**	**Level 6 High Adult Secondary Education**
5.1 Identify U.S. currency and coins **Examples** * Identify coins, bills or tokens needed for public transportation and vending machines *Demonstrate how to count coins to $1.00 using pennies, nickels, dimes, and quarters in differing amounts * Sort coins into like piles, and then determine the value of each pile	5.2 Count and make change using U.S. coins and currency up to $1.00. **Examples** * Sort coins into like piles, and then determine the value of each pile *Count correct change from a dollar	5.3 Count and make change using all U.S. coins and currency. . Model meanings of multiplication and division (inverse operations) using facts through 12 x 12. **Examples** * Count change back if you buy a $29.95 money order from a $50.00 bill *Make correct change from any given amount	5.4 Concept mastered	5.5 Concept mastered	5.6 Concept mastered

Standard 6: Measurements					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	Level 2 Beginning Basic Education	Level 3 Intermediate Basic Education	Level 4 High Intermediate Basic Education	Level 5 Low Adult Secondary Education	Level 6 High Adult Secondary Education
6.1 Identify common units of measurement: length, volume, time, and temperature. **Examples** * Mark the height of their children in feet on a growth chart * Read a school calendar *Read a clock, both analog and digital to the minutes *Demonstrate an understanding of the difference between cups & gallons and inches, feet, and miles	6.2 Identify the instruments used to measure common units of measurement: length, volume, time, and temperature. **Examples** * Read a thermometer * Read a ruler with whole inches *Measure lengths of cloth in yards using a yardstick	6.3 Measure whole units with appropriate tools: length, weight, volume, time, and temperature. **Examples** * Determine which tool would you use to measure the number of feet of baseboard that will be needed for a room *Choose the appropriate instrument for measuring the weight of produce * Choose the appropriate tool to measure the temperature of meat	6.4 Measure fractional unit with appropriate tools: length, weight, volume, time, and temperature. **Examples** * Read a fuel gauge * Measure windows for curtains, blinds, and window coverings	6.5 Convert units within length, weight, volume, time, and temperature. **Examples** * Reduce or expand a recipe *****Measure and cut flooring accurately to appropriate lengths from yards to inches	6.6 Apply appropriate units and instruments of length, weight, volume, time, and temperature to solve a variety of problems. **Examples** * Design a “dream” house * Design a living room to scale *****Plan a building project and determine how much of which materials are required

Standard 7: Area, Perimeters, and Angles					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	Level 2 Beginning Basic Education	Level 3 Intermediate Basic Education	Level 4 High Intermediate Basic Education	Level 5 Low Adult Secondary Education	Level 6 High Adult Secondary Education
7.1 Recognize and identify simple two- and three-dimensional shapes. **Examples** * Identify the shape of the classroom *Identify shapes of boxes, cans, wedges, pies, and tires	7.2 Calculate the perimeter of polygons. **Examples** * Design a garden with a specific amount of fencing *Determine a necessary amount of material for a project	7.3 Identify and define all angles including supplementary, complementary, and vertical angles. Find the third interior angle of triangles. **Examples** *Find a right angle and an acute angle within the classroom *****Describe an angle for building using the correct terminology	7.4 Calculate the area of squares, rectangles, and triangles. Identify parallel lines, perpendicular lines, and intersecting lines. **Examples** * Determine how much flooring is needed for an irregularly shaped room * Determine the area of a rectangular room for carpeting or tile	7.5 Calculate area of polygons. Calculate circumference and area of circles. Calculate volume of rectangular solids and cylinders. Apply the Pythagorean Theorem. **Examples** * Plan and measure shelves * Determine how much material would be needed to cover a round table	7.6 Use basic trigonometric functions - sine, cosine, and tangent. **Examples** * Determine the distance to the top of a 75 ft. tall pine tree from a spot 200 feet away.

Standard 8: Using Ratios, Proportions and Percents					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	Level 2 Beginning Basic Education	Level 3 Intermediate Basic Education	Level 4 High Intermediate Basic Education	Level 5 Low Adult Secondary Education	Level 6 High Adult Secondary Education
8.1 Concept introduced at Level 3	8.2 Concept introduced at Level 3	8.3 Identify and write simple ratios and proportions. **Examples** * Determine the ratio of males to females in the classroom *****Use ratios and proportions to calculate amounts for multiplying recipes (2 eggs for every cup of flour)	8.4 Identify and write ratios and proportions within word problems. **Examples** *Complete ratios such as one minute is to 60 seconds as 60 minutes is to ____ seconds. *****Calculate how many cartons are required to package a specific number of goods (example: 12 cans per carton)	8.5 Use ratios, proportions, and percents to solve word problems. **Examples** * Determine the height of a man if a flagpole is 12 feet tall and casts a shadow of 6 feet, and a man casts a shadow of 3 feet *Calculate discount prices on store inventory.	8.6 Use ratios, proportions, and percents to solve multi-step, algebraic problems **Examples** *Calculate the average speed if a man drives if he goes 180 miles in 3 hours and determine how far he could drive in 9 hours. *****Calculate profit driving long haul freight.

Standard 9: Probability					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	Level 2 Beginning Basic Education	Level 3 Intermediate Basic Education	Level 4 High Intermediate Basic Education	Level 5 Low Adult Secondary Education	Level 6 High Adult Secondary Education
9.1 Concept introduced at Level 4	9.2 Concept introduced at Level 4	9.3 Concept introduced at Level 4	9.4 Determine simple probabilities. **Examples** * Flip a coin and determine the probability of landing heads	9.5 Use simple probabilities to predict outcomes. **Examples** * Determine the probability of drawing a nine from a deck of cards *****Use known factors to predict how long a job might take	9.6 Use probabilities with dependent events to predict outcomes. **Examples** * Determine the probability of drawing a black pair and a brown pair in order without replacing the first pair if a drawer contains 6 pairs of socks (2 brown, 2 black, 2 red).? *****Project necessary equipment for outdoor work based on a weather forecast

Standard 10: Graphs and Data Analysis					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	Level 2 Beginning Basic Education	Level 3 Intermediate Basic Education	Level 4 High Intermediate Basic Education	Level 5 Low Adult Secondary Education	Level 6 High Adult Secondary Education
10.1 Identify key features of simple everyday graphs and charts. **Examples** * Interpret a simple graph (e.g. in a child's height and weight chart) *Read a monthly calendar and a simple work schedule.	10.2 Collect data and construct simple everyday graphs and charts. **Examples** * Develop a schedule for how and when to take medication according to a doctor's order. *Use graphs from past sales to determine which products sell best	10.3 Collect and interpret data to construct graphs, schedules, tables, and diagrams. **Examples** Read and interpret children's weight and height charts. * Choose a phone plan by comparing rates and constant costs. *Use collected data to make a graph of weekly sales figures	10.4 Collect and interpret data to construct more complex graphs, schedules, tables, and diagrams. **Examples** * Design a survey regarding a community issue, and collect and organize the results to communicate results and affect community change. * Develop a yearly budget and illustrate expenses by creating a chart or graph. *Project needed inventories based on data	10.5 Collect, interpret, represent, and draw implications from graphs, schedules, tables, and diagrams. **Examples** * Read and interpret aquifer table/chart to determine water restriction. * Make a decision about how to consolidate bills and credit card payments based on a given chart. *Predict monthly sales figures based on past data	10.6 Interpret, represent, and identify trends and/or make inferences and draw conclusions from complex graphs, schedules, tables, and diagrams. **Examples** * Plot the path of hurricanes based on given coordinates. * Choose which car to buy based on published consumer information. *Anticipate future trends based on data analysis

Standard 11: Averages					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	Level 2 Beginning Basic Education	Level 3 Intermediate Basic Education	Level 4 High Intermediate Basic Education	Level 5 Low Adult Secondary Education	Level 6 High Adult Secondary Education
11.1 Concept introduced at Level 4	11.2 Concept introduced at Level 4	11.3 Concept introduced at Level 4	11.4 Find mean, range, median, and mode. **Examples** * Track temperatures for one week and find the mean, median, mode, and range. *****Compare mean, median and mode of the same data to predict sales trends	11.5 Find mean, range, median, and mode. **Examples** * Determine your readiness for the GED by finding your average score on the GED official practice test. * Design a survey regarding a community issue, and collect and organize the results to communicate results and effect community change.	11.6 Concept mastered at Level 5

Standard 12: Order of Operations and Linear Equations					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	Level 2 Beginning Basic Education	Level 3 Intermediate Basic Education	Level 4 High Intermediate Basic Education	Level 5 Low Adult Secondary Education	Level 6 High Adult Secondary Education
12.1 Concept introduced at Level 2	12.2 Read and solve simple addition and subtraction equations. **Examples** Calculate: 3 + x = 8	12.3 Use order of operations (i.e., multiplication, division, addition, subtraction), to evaluate expressions. **Examples** Calculate: 10-2 * 3+7+12÷6=	12.4 Solve linear equations with one variable using division, addition, subtraction, and distributive property). Write simple linear equations from the given word problems. **Examples** Calculate: * 3(2x+1)-3 = 2(3) * Solve for the age of Tom. Tom is twice as old as Tammy. Tammy is 6 years old. How old is Tom?	12.5 Use order of operations (i.e., parentheses, exponents, multiplication, division, addition, subtraction - PEMDAS) to evaluate expressions with variables, including common formulas. Express numbers in scientific notation. **Examples** * Determine r when given d= r•t and r=4 t=6... * Write the distance from the earth to the sun in scientific notation.	12.6 Solve linear equations with one variable using strategies such as the distributive property and/or transposition. Add and subtract polynomials. Factor binomials and trinomials using strategies such as greatest common factor, difference of two squares, and/or $x^2+ bx + c$ form. **Examples** *Factor x^2+5x-6 *Simplify $(2x^2+4x-1)+(3x^2-x+2)$

Standard 13: Patterns and Sequences					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	Level 2 Beginning Basic Education	Level 3 Intermediate Basic Education	Level 4 High Intermediate Basic Education	Level 5 Low Adult Secondary Education	Level 6 High Adult Secondary Education
13.1 Concept introduced at Level 2	13.1 Recognize patterns and sequences using colors, shapes, and numbers. **Examples** 2, 4, 6, _, 10, 12,… ▲,◊,▲,_,◊,… *Arrange items on a shelf by shape. *Determine what groups of items could be able to fit on shelves of different sizes.	13.3 Construct patterns using arithmetic sequences. **Examples** 3, 5, 7, 9, 11,… *Assemble items in a sequence	13.4 Construct patterns using geometric sequences. **Examples** *Assemble a quilt according to a pattern	13.5 Construct complex patterns and sequences. **Examples** *Construct sequences such as - n, n+2, n+4, n+6,… -n, 2n, 4n, 8n,… *Assemble or disassemble machines in the workplace	13.6 Determine the missing terms from arithmetic and/or geometric sequences **Examples** *Complete the sequences - n, n+2, ___, n+6,… -n, 2n, ___, 8n,…

Standard 14: Rounding and Estimation					
Benchmarks: As learners progress across the levels, the benchmarks become more challenging and are performed with increasing independence.					
Level 1 Beginning ABE Literacy	Level 2 Beginning Basic Education	Level 3 Intermediate Basic Education	Level 4 High Intermediate Basic Education	Level 5 Low Adult Secondary Education	Level 6 High Adult Secondary Education
14.1 Round to the nearest 10. **Examples** *Determine whether 6 is closer to 1 or 10 *Estimate inventory counts to the nearest 10 and then total estimations up to 100.	14.2 Round to the nearest 100 or 1000… **Examples** *Determine whether 565 is closer to 500 or 600 *Estimate to check the answer of one-step word problems.	14.3 Round to specified place value including decimals. **Examples** *Determine whether 3.674 is closer to 3.6 or 3.7 *Estimate cost of purchases	14.4 Apply the concept of rounding and estimation to solve multi-step problems. **Examples** *Estimate the sum of 2.75 + 33.1 + 8.49 + 4.11 to the nearest tenth. *Estimate monthly car payments by rounding cost and interest. *Create a monthly budget-including such items as utility bills.	14.5 Concept mastered	14.6 Concept mastered