

**Florida Department of Education  
Curriculum Framework**

**Program Title: Adult Basic Education (ABE)**  
**Program Type: Adult Basic Education Mathematics**  
**Career Cluster: N/A**

<b>ADULT GENERAL EDUCATION</b>	
Program Number	9900000
Course Number	9900001
CIP Number	1532.010200
Grade Level	0.0 – 8.9
Standard Length	Varies
Teacher Certification	Bachelor's degree or higher

### **Purpose**

The purpose of this program is to give students an opportunity to apply knowledge and skills related to the area of basic literacy and life skills for adults who are performing at or below the 8.9 grade level. The content develops basic literacy skills specifically in the area of Mathematics.

### **Program Structure**

Adult Basic Education-Mathematics is a non-credit course designed to develop literacy and mathematic skills necessary to be a successful worker, citizen and family member. Adult Basic Education prepares students to enroll in GED® preparation courses, Adult High School programs, and/or ESOL instruction. A student enrolled in the ABE Mathematics program may be receiving instruction in one or more content areas as well; including ABE Language Arts, ABE Reading or other Adult General Education subject areas.

This program is divided into levels that are reported as student educational gains: Educational Functioning Levels (EFLs) for federal funding and Literacy Completion Points (LCPs) for state funding. Progress through levels (EFLs and/or LCPs) must be measured by approved validation methods in accordance with Rule 6A-6.014(5), F.A.C. It is the teacher's job to inform the student of the criteria for demonstrating proficiency in a benchmark, and provide assistance in meeting the criteria. Though a student need not master 100% of the benchmarks to demonstrate proficiency in a standard, a student must demonstrate proficiency in 100% of the standards to earn an education gain (EFL and/or LCP) using state-approved assessment instruments.

The following hours are recommended program lengths for each level demonstrating an earned performance gain. It is understood, however, that each student learns at his or her individual pace, and there will be students who successfully complete the program or attain their educational goals in fewer or more hours than what is recommended. Students in the

comprehensive program may enroll in more than one content area simultaneously but not in more than one level of each content area at the same time.

The following table illustrates the program structure:

Course Number	Course Title	Length	Level
9900001	Mathematics – Beginning ABE Literacy	450	0.0 – 1.9
	Mathematics – Beginning Basic Education	450	2.0 – 3.9
	Mathematics – Low Intermediate Basic Education	300	4.0 – 5.9
	Mathematics – High Intermediate Basic Education	300	6.0 – 8.9

### Special Notes

It is not intended that students will progress through the performance standards sequentially. The instructor may present topic-centered lessons that integrate benchmarks from several performance standards.

All activities are developed to be done either individually or in groups.

The computer skills are not required, as access to computer technology is not provided to every student. The computer sections are optional and will not be necessary to earn Educational Functioning Levels (EFLs) and/or Literacy Completion Points (LCPs).

The performance standards and benchmarks have been developed to facilitate progression and documentation of learning gains. Benchmarks or standards may be repeated at multiple levels (EFLs and/or LCPs). This is purposeful since: (1) proficiency in certain skills is judged to require more time than is available in one level; (2) the quality of performance expected on certain standards increases with progression through the levels, the use of punctuation, for example, at the end of Level C (5.9) should be more proficient than at the end of Level B (3.9) but should occur at both levels; and (3) instruction for skills of critical importance must be offered any student needing to learn that skill, even students entering at the intermediate or functional levels.

### Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. **Adult students with disabilities must self-identify and request such services.** Students with disabilities may need accommodations in **such areas as** instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

### Career and Education Planning

The following career development standards should be integrated into Adult Basic Education framework. Students can access Florida *CHOICES* or a comparable system for career exploration and planning activities.

The following is the list of standards:

- CP.01 Develop skills to locate, evaluate, and interpret career information.
- CP.02 Identify interests, skills, and personal preferences that influence career and education choices.
- CP.03 Identify career cluster and related pathways that match career and education goals.
- CP.04 Develop and manage a career and education plan.

## **Standards**

After successfully completing this program, the student will be able to understand mathematical concepts and demonstrate skills in the following:

### **Literacy Completion Point A Level 0.0 - 1.9 (Beginning ABE Literacy)**

- A.01.00 Number Concepts  
Represent, compare, and order whole numbers and join and separate sets.
- A.02.00 Addition and Subtraction  
Use variety of addition and subtraction strategies to solve basic math facts.
- A.03.00 Measurement  
Measure using the appropriate unit of measurement.
- A.04.00 Geometry  
Compare, compose, and decompose two-dimensional and three-dimensional geometric shapes.
- A.05.00 Algebra  
Use counting strategies, number patterns, and models as a means to explain commutative, associative, and additive properties. (MA.1.A.1.3)
- A.06.00 Financial Literacy  
Solve real-world problems involving two purchases totaling less than \$1.00 using addition without regrouping.

### **Literacy Completion Point B Level 2.0 – 3.9 (Beginning Basic Education)**

- B.01.00 Number Concepts  
Develop an understanding of base ten numerations system and place value concepts. (Grade 2, Big Idea 1)
- B.02.00 Addition and Subtraction  
Develop quick recall of addition facts and related subtraction facts and fluency with multi-digit addition and subtraction (Grade 2, Big Idea 2)

- B.03.00      Multiplication and Division  
Develop understandings of multiplication and division and strategies for basic multiplication facts and related division facts. (Grade 3, Big Idea 1)
- B.04.00      Fractions and Decimals  
Produce a sequence of fractions and decimal numbers from smallest to largest and largest to smallest.
- B.05.00      Measurement  
Solve real-world problems involving measurements using a variety of methods, such as manipulatives, mental mathematics, paper and pencil.
- B.06.00      Geometry  
Describe and analyze properties of two-dimensional shape. (Grade 3, Big Idea 3)
- B.07.00      Algebra  
Create, analyze, and represent patterns and relationships using numbers, words, and shapes.
- B.08.00      Financial Literacy  
Solve real-world consumer problems involving money.

**Literacy Completion Point C**  
**Level 4.0 - 5.9 (Low Intermediate Basic Education)**

- C.01.00      Number Concepts  
Demonstrate knowledge of the place value system to billions and apply estimations skills to a variety of operations.
- C.02.00      Addition and Subtraction  
Represent, compute, estimate, and solve addition and subtraction problems using numbers through hundred thousand. (MA.3.A.6.1)
- C.03.00      Multiplication and Division  
Use and describe various models for multiplication and division in problem-solving situations, and demonstrate recall of basic multiplication and related division facts. (Grade 4, Big Idea 1)
- C.04.00      Fractions and Decimals  
Develop an understanding of decimals, including the connection between fractions and decimals. (Grade 4, Big Idea 2)
- C.05.00      Measurement  
Solve measurement problems in the U.S. system and metric system using addition or subtraction with and without conversion.
- C.06.00      Algebra  
Describe mathematics relationships using expressions, equations, and visual representations. (MA.4.A.4.2)

- C.07.00     Data Analysis  
Collect data, construct, and analyze frequency tables, bar graphs, pictographs, and line plots.
- C.08.00     Financial Literacy  
Develop a personal budget for a set income based on an individual career plan.

**Literacy Completion Point D**  
**Level 6.0 – 8.9 (High Intermediate Basic Education)**

- D.01.00     Number Concepts  
Comprehend and apply basic number theory concepts, including primes, composites, factors and multiples.
- D.02.00     Geometry  
Apply a variety of strategies, geometric properties, and formulas for two- and three-dimensional shapes, such as triangles, cubes, and rectangular solids, to solve real-world and mathematical problems.
- D.03.00     Fractions and Decimals  
Solve real-world problems involving multiple operations using common fractions, mixed numbers and whole numbers.
- D.04.00     Ratios and Proportions  
Select the appropriate operation and solve real-world problems using ratios and/or proportions.
- D.05.00     Percents  
Convert percents to/from fractions, decimals, and percents.
- D.06.00     Algebra  
Apply the Equality, Commutative, Associative, and Distributive properties to show expressions are equivalent.
- D.07.00     Geometry  
Apply a variety of strategies and geometric properties and formulas for two- and three-dimensional shapes to solve real-world and mathematical problems.
- D.08.00     Measurement  
Compare, contrast, and convert units of measure between different measurement systems, such as U.S. customary, metric, dimensions, and derived units to solve problems. (MA.7.G.4.4).
- D.09.00     Data Analysis  
Use tables, graphs, and models to represent, analyze, and solve real-world problems.
- D.10.00     Financial Literacy  
Calculate short-term and long-term loans using interest rate, percentage down, payment rate, and the total purchase price.

Florida Department of Education  
Student Performance Standards

**Course Title:** Mathematics  
**Course Number:** 9900001  
**Course Credit:** Not Applicable

**Course Description:**

After successfully completing this program, the student will demonstrate knowledge regarding mathematical concepts and perform the following:

**Literacy Completion Point A**  
**Level 0.0 - 1.9 (Beginning ABE Literacy)**

**A.01.00**      **Number Concepts**

**Anchor Standard:**

Represent, compare, and order whole numbers and join and separate sets.

**Competencies (Benchmarks):**

- A.01.01 Represent quantities with numbers up to 20, verbally, in writing, and with manipulatives. (MA.KA.1.1)
- A.01.02 Differentiate whole numbers up to 100 using names, written words, and standard numerals.
- A.01.03 Read words for numerals and match numbers with quantities, including recognizing number sequencing.
- A.01.04 Understand basic concepts (for example: equal, unequal, less than, greater than, more, less, add, subtract, same as, above, below, between, in, out, over, under).
- A.01.05 Identify the next item of a pattern or a number sequence.
- A.01.06 Count by 2, 5, and 10, 25, 50.
- A.01.07 Illustrate ordinal numbers first through tenth.
- A.01.08 Estimate the relative size of whole numbers between 0 and 100
- A.01.09 Classify numbers as even or odd.

**A.02.00**      **Addition and Subtraction**

**Anchor Standard:**

Use variety of addition and subtraction strategies to solve basic math facts.

**Competencies (Benchmarks):**

- A.02.01 Predict the effect of addition and subtraction on whole numbers.
- A.02.02 Solve 1 and 2-digit addition problems without regrouping given in both vertical and horizontal notation.
- A.02.03 Solve 1 and 2-digit subtraction problems without regrouping given in both vertical and horizontal notation.

- A.02.04 Select the appropriate operation (addition/subtraction) to solve real-world problems using 1 and 2-digit subtraction problems without regrouping. A variety of appropriate methods for computing may be used (for example: manipulatives, mental mathematics, paper and pencil).
- A.02.05 Recite addition facts using a number line, table, or memory.
- A.02.06 Recite subtraction facts using a number line, table, or memory.

**A.03.00      Measurement**

**Anchor Standard:**

Measure using the appropriate unit of measurement.

**Competencies (Benchmarks):**

- A.03.01 Measure by using iterations of a unit and count the unit measures by grouping units; such as, inches, pounds, degrees, and cups,. (MA.1G.5.1)
- A.03.02 Compare and order objects according to descriptors of length, weight, and capacity. (MA.1G.5.2)
- A.03.03 Identify the larger of two U.S. measures (for example: inches or feet or yards).
- A.03.04 Measure using the appropriate unit of measurement.
- A.03.05 State and predict dates by month, day, and year, using a calendar.
- A.03.06 Tell time to the hour and half-hour.

**A.04.00      Geometry**

**Anchor Standard:**

Compare, compose, and decompose two-dimensional and three-dimensional geometric shapes.

**Competencies (Benchmarks):**

- A.04.01 Identify a square, circle, rectangle, and triangle.
- A.04.02 Use appropriate vocabulary to compare and classify shapes according to attributes and properties such as number and lengths of sides and number of vertices. (MA.1.G.3.1)
- A.04.02 Compose and decompose plane and solid figures, including making predictions about them, to build an understanding of part/whole relationships and properties of shapes. (MA1.G.3.2)

**A.05.00      Algebra**

**Anchor Standard:**

Use counting strategies, number patterns, and models as a means to explain commutative, associative, and additive properties. (MA.1.A.1.3)

**Competencies (Benchmarks):**

- A.05.01 Extend repeating and growing patters, fill in missing terms, and justify reasoning. (MA.1A.4.1)
- A.05.02 Recognize and create examples of Commutative Property.  
Example:  $2 + 3 = 5$  and  $3 + 2 = 5$
- A.05.03 Recognize and create examples of Associative Property.  
Example:  $2 + (3 + 1) = 6$  and  $(2 + 3) + 1 = 6$

- A.05.04 Recognize and create examples of Additive Property  
Example:  $7 + 8 = 7 + 7 + 1$

**A.06.00 Financial Literacy**

**Anchor Standard:**

Solve real-world problems involving two purchases totaling less than \$1.00 using addition without regrouping.

**Competencies (Benchmarks):**

- A.06.01 Identify coins and currency of different values.  
A.06.02 Identify sets of coins equivalent to \$1.00 or less.  
A.06.03 Read and write numerals for money using appropriate monetary symbols.

**Literacy Completion Point B  
Level 2.0 - 3.9 (Beginning Basic Education)**

**B.01.00 Number Concepts**

**Anchor Standard:**

Develop an understanding of base ten numerations system and place value concepts. (Grade 2, Big Idea 1)

**Competencies (Benchmarks):**

- B.01.01 Distinguish place value for ones, tens, hundreds, thousands, tenths and hundredths.
- B.01.02 Investigate that math has four basic operations: addition, subtraction, multiplication, and division.
- B.01.03 Recognize clue words in choosing operations to be used to solve real-world problems (for example: add, plus, total, sum, subtract, difference, left, remaining, multiply, times, several, divide, each, per).
- B.01.04 Select the appropriate operation to solve specific problems involving addition (+), subtraction (-), multiplication (x), and division ( $\div$ ).
- B.01.05 Explain the reasoning steps in solving real-world problems by:
- identifying the question;
  - identifying the information given;
  - choosing the operation;
  - solving and checking; and,
  - analyzing the answer for logic.
- B.01.06 Apply rounding techniques to estimate the solution to a real-world addition or subtraction problem then determine the actual result through computation.
- B.01.07 Identify whole numbers, commonly-used fractions, or mixed numbers and relate these numbers to real-world situations (for example:  $\frac{1}{4}$  pizza,  $\frac{1}{2}$  sandwich, 1 and  $\frac{1}{2}$  pies).

## **B.02.00      Addition and Subtraction**

### **Anchor Standard:**

Develop quick recall of addition facts and related subtraction facts and fluency with multi-digit addition and subtraction (Grade 2, Big Idea 2)

### **Competencies (Benchmarks):**

- B.02.01 Explain the inverse (opposite) relationship of addition and subtraction.
- B.02.02 Solve addition problems using up to 5-digits without regrouping given in both vertical and horizontal notation.
- B.02.03 Solve real-world problems using addition of whole numbers up to 5-digits with and without regrouping to solve real-world problems using appropriate methods of computing, such as manipulatives, mental mathematics, paper and pencil;  
Example: Add a 4 or 5-digit number to a 3 or 4-digit number, without regrouping, given in vertical notation.
- B.02.04 Solve subtraction problems using up to 5-digits without regrouping given in both vertical and horizontal notation.
- B.02.05 Borrow where the minuend is a digit followed by three zeros and regrouping is necessary (for example: 6000 - 495).
- B.02.06 Solve real-world problems using subtraction of whole numbers up to 5-digits with and without regrouping to solve real-world problems using a variety of methods, such as manipulatives, mental mathematics, paper and pencil;  
Example: Subtract up to 4 or 5-digit number from 3 or 4-digit number without regrouping, given in horizontal notation.

## **B.03.00      Multiplication and Division**

### **Anchor Standard:**

Develop understandings of multiplication and division and strategies for basic multiplication facts and related division facts. (Grade 3, Big Idea 1)

### **Competencies (Benchmarks):**

- B.03.01 Predict the effect of multiplication and division on whole numbers.
- B.03.02 Identify terminology and symbols for multiplication and division.
- B.03.03 Explain the inverse relationship between multiplication and division.
- B.03.04 Recite multiplication and division facts using a table or memory.
- B.03.05 Multiply 2-digit and 3-digit numbers by a 1-digit number without regrouping.
- B.03.06 Divide a 2-digit number by a 1-digit number without remainders.

## **B.04.00      Fractions and Decimals**

### **Anchor Standard:**

Produce a sequence of fractions and decimal numbers from smallest to largest and largest to smallest.

### **Competencies (Benchmarks):**

- B.04.01 Read and write names, words, and standard numerals for commonly used fractions such as  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{3}$ ,  $\frac{3}{4}$ ,  $\frac{2}{3}$ .

- B.04.02 Identify fractions on a number line.
- B.04.03 Examine the relationship between money and decimals.
- B.04.04 Locate decimals on a number line.

**B.05.00      Measurement**

**Anchor Standard:**

Solve real-world problems involving measurements using a variety of methods, such as manipulatives, mental mathematics, paper and pencil.

**Competencies (Benchmarks):**

- B.05.01 Recognize other units of measurement such as metric measures.
- B.05.02 Differentiate and compare common units of U.S. measurements for length, capacity, weight, and temperature.
- B.05.03 Measure to the nearest  $\frac{1}{4}$  inch on a 12-inch ruler.
- B.05.04 Use appropriate tools from the U.S. system and metric system for measuring length, capacity, weight and temperature.
- B.05.05 Tell time on the half-hour, quarter hour, and in minutes.

**B.06.00      Geometry**

**Anchor Standard:**

Describe and analyze properties of two-dimensional shape. (Grade 3, Big Idea 3)

**Competencies (Benchmarks):**

- B.06.01 Describe, analyze, compare, and classify two-dimensional shapes using sides and angles, including acute, obtuse, and right angles, and connect these ideas to the definition of shapes. (MA.3.G.3.1)
- B.06.02 Compose and decompose and transform polygons to make other polygons, including concave and convex polygons with three, four, five, six, eight, or ten sides. (MA.3.G.3.2)
- B.06.03 Build, draw, and analyze two-dimensional shapes from several orientations in order to examine and apply congruence and symmetry. (MA.3.G.3.3)
- B.06.04 Select appropriate units, strategies, and tools to solve problems involving perimeter. (MA.3.G.5.1)

**B.07.00      Algebra**

**Anchor Standard:**

Create, analyze, and represent patterns and relationships using numbers, words, and shapes.

**Competencies (Benchmarks):**

- B.07.01 Predict and explain the missing variable in a sequence.
- B.07.02 Recognize symbols and concepts of equal (=) and unequal ( $\neq$ ), less than (<) and greater than (>).
- B.07.03 Solve problems that involve repeated addition.

**B.08.00**      **Financial Literacy**

**Anchor Standard:**

Solve real-world consumer problems involving money.

**Competencies (Benchmarks):**

- B.08.01      Count coins and currency up to \$10.00.
- B.08.02      Create equivalent amounts of \$1, \$5, and \$10 dollars using coins and paper currency.
- B.08.03      Calculate change after purchases with a \$1, \$5, and \$10 dollar bill.
- B.08.04      Solve real-world problems involving comparison shopping for purchases up to ten dollars using a variety of methods such as manipulatives, mental mathematics, paper and pencil.
- B.08.05      Estimate the total cost of a purchase using an order form and/or menu.
- B.08.06      Calculate the total cost for an order after calculating the cost of two items, sales tax (using a tax table), and shipping.
- B.08.07      Calculate the total cost of multiple items using a menu, advertisement, internet, or catalog, including one item having multiple quantities.

**Literacy Completion Point C**

**Level 4.0 - 5.9 (Low Intermediate Basic Education)**

**C.01.00**      **Number Concepts**

**Anchor Standard:**

Demonstrate knowledge of the place value system to billions and apply estimations skills to a variety of operations.

**Competencies (Benchmarks):**

- C.01.01      Read and write names, words, and whole numbers using place value up to billions (billions, millions, thousands, hundreds, tens, and ones).
- C.01.02      Investigate the relative size of whole numbers up to billions.
- C.01.03      Compare a variety of estimation strategies in real-world problem situations to determine the reasonableness of calculations results.
- C.01.04      Round a whole number less than one million to any given place value.

**C.02.00**      **Addition and Subtraction**

**Anchor Standard:**

Represent, compute, estimate, and solve addition and subtraction problems using numbers through hundred thousand. (MA.3.A.6.1)

**Competencies (Benchmarks):**

- C.02.01      Apply rounding techniques to estimate the solution to real-world addition and/or subtraction problems, then determine the actual result.
- C.02.02      Add a 9-digit number to a 9-digit number with and without regrouping given in horizontal and vertical notations.
- C.02.03      Subtract two 9-digit numbers with and without regrouping given in horizontal and vertical notations.

C.02.04 Formulate the proof method for addition and subtraction.

Example:

$$45,900 + 1,100 = 47,000 \text{ and } 47,000 - 1,100 = 45,900$$

### **C.03.00 Multiplication and Division**

#### **Anchor Standard:**

Use and describe various models for multiplication and division in problem-solving situations, and demonstrate recall of basic multiplication and related division facts. (Grade 4, Big Idea 1)

#### **Competencies (Benchmarks):**

- C.03.01 Multiply a 2-digit number by a 2-digit number.
- C.03.02 Multiply a 3-digit number by a 1-, 2- or 3-digit number.
- C.03.03 Multiply a 4-digit number by a 1-, 2- or 3-digit number.
- C.03.04 Divide 3- or 4-digit numbers by a 1-digit number with and without remainder.
- C.03.05 Divide 3-or 4-digit numbers by a 2-digit number with and without remainder.
- C.03.06 Formulate the proof method for problems.  
Examples:  $12 \div 2 = 6 \times 2$   
 $15 \times 5 = 25 \div 5$   
 $64 \times 27 = 27 \times 64$
- C.03.07 Divide by a 3-digit number with or without remainder.

### **C.04.00 Fractions and Decimals**

#### **Anchor Standard:**

Develop an understanding of decimals, including the connection between fractions and decimals. (Grade 4, Big Idea 2)

#### **Competencies (Benchmarks):**

- C.04.01 Identify and explain the purpose of numerators and denominators.
- C.04.02 Recognize proper and improper fractions and mixed numbers.
- C.04.03 Convert mixed numbers to improper fractions and improper fractions to mixed numbers.
- C.04.04 Round fractions and mixed numbers to the nearest whole numbers.
- C.04.05 Reduce fractions to an equivalent fraction ( $1/2 = 2/4 = 4/8$ ).
- C.04.06 Reduce common fractions to the lowest common denominator.
- C.04.07 Add and subtract fractions with common denominators.
- C.04.08 Multiply proper fractions.  
Example:  $1 \times 1/2 = 2/2 \times 1/2$
- C.04.09 Identify fractions represented as equivalent forms such as decimals and percents.  
Examples:  
 $1/2 = 50\% = .5$
- C.04.10 Read and write names, and standard numerals for decimals, including tenths, hundredths, and thousandths.
- C.04.11 Distinguish and compare the relative size of decimals.
- C.04.12 Convert common fractions to decimals and decimals to common fractions.
- C.04.13 Add and subtract decimals up to thousands.

- C.04.14 Select the appropriate operation and solve real-world problems involving decimals.

**C.05.00 Measurement**

**Anchor Standard:**

Solve measurement problems in the U.S. system and metric system using addition or subtraction with and without conversion.

**Competencies (Benchmarks):**

- C.05.01 Apply estimating techniques to estimate measurements including length, time, weight, temperature, and money. Then, calculate and compare actual measurements.
- C.05.02 Read and write abbreviations for length, weight, and capacity measurements in the U.S. system and metric system.
- C.05.03 Identify metric units of measure for length, weight/mass, or capacity (meter, gram, liter) most appropriate for a given situation.
- C.05.04 Select prefixes used in the metric system with their decimal equivalents (kilo, deci, centi, and milli).
- C.05.05 Measure capacity quantities in teaspoons, tablespoons, cups, pints, quarts, gallons, and liters.
- C.05.06 Determine and interpret measurement instruments such as Fahrenheit and/or Celsius thermometers, rules, scales, gauges, and dials.
- C.05.07 Interpret diagrams, illustrations, and scale drawings.
- C.05.08 Interpret measurements in recipes.
- C.05.09 Apply geometric formulas for perimeter and area of squares, rectangles and triangles.
- C.05.10 Convert equal measures defined in different units.  
Example: Feet to yards, yards to feet and cups to quarts, quarts to cups

**C.06.00 Algebra**

**Anchor Standard:**

Describe mathematics relationships using expressions, equations, and visual representations. (MA.4.A.4.2)

**Competencies (Benchmarks):**

- C.06.01 Describe a variety of patterns and relationships through models such as manipulatives, tables, graphs, and rules.
- C.06.02 Restate a problem in words into a number symbol sentence.  
Example:  
Six plus one equals seven to  $6 + 1 = 7$
- C.06.03 Recognize simple algebraic formulas.  
Example:  
 $1 + 3 = x$

## **C.07.00      Data Analysis**

### **Anchor Standard:**

Collect data, construct, and analyze frequency tables, bar graphs, pictographs, and line plots.

### **Competencies (Benchmarks):**

- C.07.01      Solve problems using bar graphs, circle graphs, line graphs, pictographs, and charts.
- C.07.02      Interpret data in charts, tables, plots, graphs, and maps.
- C.07.03      Calculate averages (means).
- C.07.04      Calculate mileage on a highway map.

## **C.08.00      Financial Literacy**

### **Anchor Standard:**

Develop a personal budget for a set income based on an individual career plan.

### **Competencies (Benchmarks):**

- C.08.01      Investigate a variety of methods to purchase goods and services such as news paper, yellow pages, catalogs, internet, order forms, and related information.
- C.08.02      Interpret a variety of information such as advertisements, labels, coupons, charts, letters, articles, and/or price tags, to select goods and services.
- C.08.03      Investigate and calculate earnings based on a variety of reported differences for wages (for example: minutes spent working on two jobs, working two hourly wages, hourly and daily wages).
- C.08.04      Investigate and calculate personal banking statements and forms, such as deposit and withdrawal forms for accuracy, and calculate account balances using computer-generated bank statements.
- C.08.05      Calculate wage increases using figures from a comparison table and bar graphs.
- C.08.06      Calculate the amount of fines accrued for several driving violations.
- C.08.07      Compare costs for major purchases (for example: car, refrigerator).

## **Literacy Completion Point D**

### **Level 6.0 – 8.9 (High Intermediate Basic Education)**

## **D.01.00      Number Concepts**

### **Anchor Standard:**

Comprehend and apply basic number theory concepts, including primes, composites, factors and multiples.

### **Competencies (Benchmarks):**

- D.01.01      Develop an understanding of and apply proportionality, including similarity.
- D.01.02      Recognize the structure of number systems other than the decimal number system (Roman number system).

- D.01.03 Solve real-world and mathematical problems with the help of estimating measurements (for example: length, time, weight/mass, temperature, money, perimeter, area, volume) in either U.S. system or metric units.

**D.02.00 Geometry**

**Anchor Standard:**

Apply a variety of strategies, geometric properties, and formulas for two- and three-dimensional shapes, such as triangles, cubes, and rectangular solids, to solve real-world and mathematical problems.

**Competencies (Benchmarks):**

- D.02.01 Illustrate the concepts of spatial relationships, symmetry, reflections, congruency, and similarity.
- D.02.02 Apply a variety of strategies, geometric properties, and formulas for two- and three-dimensional shapes, such as triangles, cubes, and rectangular solids to solve real-world and mathematical problems.

**D.03.00 Fractions and Decimals**

**Anchor Standard:**

Solve real-world problems involving multiple operations using common fractions, mixed numbers and whole numbers.

**Competencies (Benchmarks):**

- D.03.01 Add and subtract whole numbers, fractions, and mixed numbers with and without common denominators.
- D.03.02 Multiply and divide common mixed fractions, mixed numbers and whole numbers.
- D.03.03 Select the appropriate operation and solve specific problems involving fractions.
- D.03.04 Solve real-world problems involving multiple operations using common fractions, mixed numbers and whole numbers.
- D.03.05 Multiply and divide a decimal by a whole number and/or another decimal.
- D.03.06 Select the appropriate operation and solve real-world problems involving decimals.

**D.04.00 Ratios and Proportions**

**Anchor Standard:**

Select the appropriate operation and solve real-world problems using ratios and/or proportions.

**Competencies (Benchmarks):**

- D.04.01 Read and write names, words, and standard numerals with ratios.
- D.04.02 Illustrate/comprehend the concept of ratio and proportion.
- D.04.03 Identify/comprehend concrete and symbolic representations of ratios in real world situations.
- D.04.04 Recognize that ratios can be represented in other equivalent forms.

- D.04.05 Produce the process of cross-multiplying to solve proportion.
- D.04.06 Solve real-world problems involving ratios and proportions.

**D.05.00      Percents**

**Anchor Standard:**

Convert percents to/from fractions, decimals, and percents.

**Competencies (Benchmarks):**

- D.05.01 Read and write names, words, and standard numerals with percents.
- D.05.02 Compare and differentiate the relative size of percents.
- D.05.03 Identify concrete and symbolic representations of percents in real-world situations.
- D.05.04 Recognize that percents can be represented in a variety of equivalent forms.
- D.05.05 Calculate a percent of a number.
- D.05.06 Calculate the total when a percent is given.  
Example:  
50% of 20 = 10
- D.05.07 Convert percents to/from fractions, decimals, and percents.
- D.05.08 Solve real-world problems involving percents.

**D.06.00      Algebra**

**Anchor Standard:**

Apply the Equality, Commutative, Associative, and Distributive properties to show expressions are equivalent.

**Competencies (Benchmarks):**

- D.06.01 Read and write names, words, and standard numerals with integers.
- D.06.02 Identify concrete and symbolic representations of integers to real-world situations.  
Example: Temperature
- D.06.03 Locate integers using a number line.
- D.06.04 Compare and differentiate the relative size of integers.
- D.06.05 Add, subtract, multiply and divide integers.
- D.06.06 Select the appropriate operation to solve specific problems involving integers.
- D.06.07 Solve real-world problems involving integers.
- D.06.08 Calculate the square of numbers 1 – 20.
- D.06.09 Calculate the square roots of perfect squares.
- D.06.10 Apply place value concepts of grouping based on powers of 10 (1, 10, 100, 1000, 10,000, 100,000, 1,000,000).
- D.06.11 Solve simple problems by applying the algebraic order of operations.
- D.06.12 Write algebraic expressions (for example:  $2x$ ;  $2m - 10$ ).
- D.06.13 Solve one-step equations involving any mathematical operations.  
Example:  $x + 9 - 27$ ;  $x/4 = 3$ ;  $x - (-4) = 2$ .
- D.06.14 Comprehend commutative and associative properties.  
Example:  $6 \times 2 = 2 \times 6$ ;  $1 + 3 + 4 = 3 + 1 + 4$

## **D.07.00      Geometry**

### **Anchor Standard:**

Apply a variety of strategies and geometric properties and formulas for two- and three-dimensional shapes to solve real-world and mathematical problems.

### **Competencies (Benchmarks):**

- D.07.01    Apply and calculate using the properties of the following geometric shapes: circle, square, rectangle, triangle, parallelogram, pentagon, cube, rectangular solid, pyramid, cone, and cylinder.
- D.07.02    Recognize types of angles (acute, obtuse, straight, right).
- D.07.03    Recognize types of triangles (equilateral, right, scalene, isosceles).
- D.07.04    Know the number of degrees in a triangle and a quadrilateral.
- D.07.05    Label geometric figures using appropriate geometric vocabulary (parallel, perpendicular, similar, congruent).
- D.07.06    Apply geometric formulas for circumference, cubes, rectangular solids and cylinders.

## **D.08.00      Measurement**

### **Anchor Standard:**

Compare, contrast, and convert units of measure between different measurement systems, such as U.S. customary, metric, dimensions, and derived units to solve problems. (MA.7.G.4.4)

### **Competencies (Benchmarks):**

- D.08.01    Solve linear measurement problems with inches, feet, or yards.
- D.08.02    Solve capacity problems with cups, pints, quarts, or gallons.
- D.08.03    Solve mass/weight problems with ounces, pounds, or tons.
- D.08.04    Convert within the metric system measures from one prefix to another such as deci, centi, and milli.
- D.08.05    Research a variety of instruments and tools, technology, and techniques to measure quantities in order to achieve specified degrees of accuracy in a problem situation.
- D.08.06    Predict capacity results such as mass and volume to check the reasonableness of data using a variety of estimation strategies.
- D.08.07    Solve real-world problems of length, perimeter, area, mass, volume, and capacity using estimation strategies.
- D.08.08    Solve real-world and mathematical problems with the help of estimating Measurements, such length, time, weight/mass, temperature, money, perimeter, area, volume, in either U.S. system or metric units.
- D.08.09    Predict capacity results such as mass and volume to check the reasonableness of data using a variety of estimation strategies.
- D.08.10    Solve real-world problems of length, perimeter, area, mass, volume, and capacity using estimation strategies.

## **D.09.00      Data Analysis**

### **Anchor Standard:**

Use tables, graphs, and models to represent, analyze, and solve real-world problems.

### **Competencies (Benchmarks):**

- D.09.01      Solve real-world problems using data from charts and tables, such as determining tax on purchases using sales tax table or calculating tax from a withholding tax schedule or income tax schedule.
- D.09.02      Compare and differentiate the concepts of mean, median, and mode.
- D.09.03      Convert distances on a map using the map scale.
- D.09.04      Interpret a time zone map to determine the time in one location using a specified time in another time zone.

## **D.10.00      Financial Literacy**

### **Anchor Standard:**

Calculate short-term and long-term loans using interest rate, percentage down, payment rate, and the total purchase price.

### **Competencies (Benchmarks):**

- D.10.01      Calculate and compare the unit price of food based on different sizes and brands using a calculator and/or pencil and paper.
- D.10.02      Calculate sales tax using the sales tax percentage rate and the total cost of a purchase.
- D.10.03      Compute percentage discounts and sale prices to determine final cost.
- D.10.04      Calculate and interpret interest and interest-earning savings plans.