

Florida Department of Education
Curriculum Framework

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

ADULT GENERAL EDUCATION	
Program Number	99000001
CIP Number	1532.0102000
Grade Level	0.0 – 8.9
Standard Length	900 – 1500 hours
Teacher Certification	Bachelors 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 ninth-grade level. The content develops basic literacy skills in all areas of knowledge.

The content includes, but is not limited to, Reading, Language Arts, and Mathematics.

Program Structure

Comprehensive Adult Basic Education is a non-credit course designed to develop literacy skills necessary to be successful workers, citizens, and family members. Comprehensive Adult Basic Education prepares students to enroll in GED preparation courses. A student enrolled in the Comprehensive ABE program may be receiving instruction in one or more content areas: mathematics, language, or reading.

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), FAC. It is the teacher's responsibility to decide and inform the student of the criteria for demonstrating proficiency in a benchmark. While it is not necessary for a student to 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).

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. Each content area that a student is

enrolled in determines program length. For example, a student enrolled in basic reading and basic mathematics may be recommended for 900 hours of instruction.

The following table illustrates the program structure:

Course Number	Course Title	Length	Level and Scaled Score (SS)
9900001	Mathematics – Beginning ABE Literacy	450 hours	0.0 – 1.9 (SS) ≤313
	Mathematics – Beginning Basic Education	450 hours	1.0 – 3.9 (SS) 314 – 441
	Mathematics – Low Intermediate Basic Education	300 hours	4.0 – 5.9 (SS) 442 – 505
	Mathematics – High Intermediate Basic Education	300 hours	6.0 – 8.9 (SS) 506 – 565

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 to all students needing to learn that skill, even students entering at the intermediate or functional level.

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 the Adult Basic Education frameworks. 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.

Anchor 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 (SS) ≤313 BEGINNING ABE LITERACY

- A.01.00 Number Concepts
Represent, compare, order whole numbers; join and separate sets.
- A.02.00 Addition and Subtraction
Use a 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 using addition without regrouping for purchases less than \$1.00.

Literacy Completion Point B
Level 2.0 - 3.9 (SS) 314 – 441
BEGINNING BASIC EDUCATION

- B.01.00 Number Concepts
Develop an understanding of base ten numeration system and place value concepts. (Level 2, Big Idea 1)
- B.02.00 Addition and Subtraction
Develop quick recall (fluency) of addition facts, related subtraction facts, and multi-digit addition and subtraction. (Level 2, Big Idea 2)
- B.03.00 Multiplication and Division
Perform strategies for basic multiplication facts and related division facts. (Level 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 paper and pencil, manipulatives, and mental mathematics.
- B.06.00 Geometry
Describe and analyze properties of two-dimensional shapes. (Level 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 (SS) 442 – 505
LOW INTERMEDIATE BASIC EDUCATION

- C.01.00 Number Concepts
Demonstrate knowledge of the place value system to billions and apply estimation 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. (Level 4, Big Idea 1)

- C.04.00 Fractions and Decimals
Develop an understanding of decimals, including the connection between fractions and decimals. (Level 4, Big Idea 2)
- C.05.00 Measurement
Solve measurement problems in U.S. and metric systems using addition or subtraction with or without conversion.
- C.06.00 Geometry
Apply a variety of strategies, geometric properties, and formulas for two- and three-dimensional shapes, such as triangles, cubes, and rectangular solids.
- C.07.00 Algebra
Describe mathematics relationships using expressions, equations, and visual representations. (MA.4.A.4.2)
- C.08.00 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 (SS) 506 – 565
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 Fractions and Decimals
Solve real-world problems involving multiple operations using common fractions, mixed numbers, and whole numbers.
- D.03.00 Ratios and Proportions
Select the appropriate operation and solve real-world problems using ratios and/or proportions.
- D.04.00 Percents
Convert percents to/from fractions and decimals.
- D.05.00 Measurement
Compare, contrast, and convert units of measure among different measurement systems, such as U.S. customary, metric, dimensions, and derived units to solve problems. (MA.7.G.4.4).

- D.06.00 Geometry
Apply a variety of strategies, geometric properties, and formulas for two- and three-dimensional shapes to solve real-world and mathematical problems.
- D.07.00 Algebra
Apply the equality, commutative, associative, and distributive properties to show expressions that are equivalent.
- D.08.00 Data Analysis
Use tables, graphs, and models to represent, analyze, and solve real-world problems.
- D.09.00 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 (SS) ≤313
 BEGINNING ABE LITERACY**

A.01.00 Number Concepts

Anchor Standard:

Represent, compare, order whole numbers; 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 number sequencing.
Example: 1, one, first, 1st
- A.01.04 Illustrate ordinal numbers first through tenth.
- A.01.05 Understand basic concepts such as equal, unequal, less than, greater than, more, less, add, subtract, same as, above, below, between, in, out, over, under.
- A.01.06 Identify the next item of a pattern or a number sequence.
- A.01.07 Count by 2, 5, 10, 25, and 50.
- A.01.08 Estimate the relative sizes 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 a 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 notations.
- 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 such as paper and pencil, manipulatives, and mental mathematics for computing may be used.
- 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 (repetitions) 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.04.03 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 patterns; 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 using addition without regrouping for purchases less than \$1.00.

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 (SS) 314 -441
 BEGINNING BASIC EDUCATION**

B.01.00 Number Concepts

Anchor Standard:

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

Competencies (Benchmarks):

- B.01.01 Distinguish place value for ones, tens, hundreds, thousands, tenths and hundredths.
- B.01.02 Determine the relationships among the four basic mathematical operations: addition, subtraction, multiplication, and division.
- B.01.03 Recognize clue words in choosing operations to be used to solve real-world Problems such as 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 (÷).
- 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, and mixed numbers; and relate these numbers to real-world situations
Examples: 1/4 pizza, 1/2 sandwich, 1 and 1/2 pies

B.02.00 Addition and Subtraction

Anchor Standard:

Develop quick recall (fluency) of addition facts, related subtraction facts, and multi-digit addition and subtraction. (Level 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 paper and pencil, manipulatives, and mental mathematics.
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.
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 paper and pencil, manipulatives, and mental mathematics.
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:

Perform strategies for basic multiplication facts and related division facts. (Level 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 Organize fractions on a number line.
- B.04.03 Examine the relationship between money and decimals.
- B.04.04 Organize decimals on a number line.

B.05.00 Measurement

Anchor Standard:

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

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 shapes. (Level 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 ($=$), unequal (\neq), less than ($<$), greater than ($>$), less than or equal to (\leq), and greater than or equal to (\geq).
- 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 (SS) 442 – 505

LOW INTERMEDIATE BASIC EDUCATION

C.01.00 Number Concepts

Anchor Standard:

Demonstrate knowledge of the place value system to billions and apply estimation 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 sizes of whole numbers up to billions.
- C.01.03 Compare a variety of estimation strategies in real-world situations to determine the reasonableness of calculations.
- 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 thousands. (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: $45,900 + 1,100 = 47,000$ 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. (Level 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. (Level 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 equivalent fractions ($1/2 = 2/4 = 4/8$).
- 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.
Examples: .10, one tenth; .40, four tenths
- C.04.11 Distinguish and compare the relative sizes of decimals.
- C.04.12 Convert common fractions to decimals and decimals to common fractions.
- C.04.13 Add and subtract decimals up to thousandths.

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

C.05.00 Measurement

Anchor Standard:

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

Competencies (Benchmarks):

- C.05.01 Estimate measurements of length, time, weight, temperature, and money. Then, calculate actual measurements.
- C.05.02 Read and write abbreviations for length, weight, and capacity measurements in the U.S. and metric systems.
- 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 Read and interpret units of measurement from a variety of instruments.
Examples: thermometers (Fahrenheit and/or Celsius), rules, scales, gauges, and dials.
- C.05.07 Interpret diagrams, illustrations, and scale drawings.
- C.05.08 Read and interpret units of 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.
Examples: feet to yards, yards to feet and cups to quarts, quarts to cups

C.06.00 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.

Competencies (Benchmarks):

- C.06.01 Illustrate the concepts of spatial relationships, symmetry, reflections, congruency, and similarity.
- C.06.02 Solve real-world and mathematical problems by applying formulas for two and three dimensional shapes

C.07.00 Algebra

Anchor Standard:

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

Competencies (Benchmarks):

- C.07.01 Describe a variety of patterns and relationships through models such as manipulatives, tables, graphs, and rules.
- C.07.02 Restate word problems into a number symbol sentence.
Example: Six plus one equals seven to $6 + 1 = 7$
- C.07.03 Recognize simple algebraic formulas.
Example: $1 + 3 = x$

C.08.00 Data Analysis

Anchor Standard:

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

Competencies (Benchmarks):

- C.08.01 Solve problems using bar graphs, circle graphs, line graphs, pictographs, and charts.
- C.08.02 Interpret data in charts, tables, plots, graphs, and maps.
- C.08.03 Calculate averages (means).
- C.08.04 Calculate mileage on a highway map.

C.09.00 Financial Literacy

Anchor Standard:

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

Competencies (Benchmarks):

- C.09.01 Investigate a variety of methods to purchase goods and services.
Examples: newspapers, yellow pages, catalogs, internet, order forms, and other related information sources.
- C.09.02 Interpret a variety of information such as advertisements, labels, coupons, charts, letters, articles, and/or price tags, to select goods and services.
- C.09.03 Investigate and calculate earnings based on a variety of reported differences for wages.
Examples: minutes spent working on two jobs, working two hourly wages, hourly and daily wages
- C.09.04 Investigate and calculate personal banking statements and forms.
Examples: deposit and withdrawal forms for accuracy, and calculate account balances using computer-generated bank statements
- C.09.05 Calculate wage increases using figures from a comparison table and bar graphs.
- C.09.06 Calculate the amount of fines accrued for several driving violations.
- C.09.07 Compare costs for major purchases.
Example: computer, car, refrigerator

Literacy Completion Point D
Level 6.0 – 8.9 (SS) 506 – 565
HIGH INTERMEDIATE BASIC EDUCATION

D.01.00 Number Concepts

Anchor Standard:

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

Competencies (Benchmarks):

- D.01.01 Develop an understanding of proportionality and similarity.
- D.01.02 Recognize the structure of number systems other than the decimal number system.
Example: Roman number system

D.02.00 Fractions and Decimals

Anchor Standard:

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

Competencies (Benchmarks):

- D.02.01 Add and subtract whole numbers, fractions, and mixed numbers with and without common denominators.
- D.02.02 Multiply and divide common mixed fractions, mixed numbers, and whole numbers.
- D.02.03 Select the appropriate operation and solve specific problems involving fractions.
- D.02.04 Solve real-world problems involving multiple operations using common fractions, mixed numbers, and whole numbers.
- D.02.05 Multiply and divide a decimal by a whole number and/or another decimal.
- D.02.06 Select the appropriate operation and solve real-world problems involving decimals.

D.03.00 Ratios and Proportions

Anchor Standard:

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

Competencies (Benchmarks):

- D.03.01 Read and write names, words, and standard numerals with ratios.
- D.03.02 Illustrate the concept of ratio and proportion.
- D.03.03 Identify concrete and symbolic representations of ratios in real world situations.
- D.03.04 Recognize that ratios can be represented in other equivalent forms.
- D.03.05 Produce the process of cross-multiplying to solve proportion.
- D.03.06 Solve real-world problems involving ratios and proportions.

D.04.00 Percents

Anchor Standard:

Convert percents to/from fractions and decimals.

Competencies (Benchmarks):

- D.04.01 Read and write names, words, and standard numerals for percents.
- D.04.02 Compare and differentiate the relative sizes of percents.
- D.04.03 Identify concrete and symbolic representations of percents in real-world situations.
- D.04.04 Recognize that percents can be represented in a variety of equivalent forms.
- D.04.05 Calculate a percent of a number.
- D.04.06 Calculate the total when a percent is given.
Example: 20 is 50% of what number?
- D.04.07 Solve real-world problems involving percents.

D.05.00 Measurement

Anchor Standard:

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

Competencies (Benchmarks):

- D.05.01 Solve linear measurement problems with inches, feet, or yards.
- D.05.02 Solve capacity problems with cups, pints, quarts, and gallons.
- D.05.03 Solve mass/weight problems with ounces, pounds, and tons.
- D.05.04 Convert within the metric system measures from one prefix to another, such as, deci, centi, and milli.
- D.05.05 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.
Example: miles per hour (derived unit)
- D.05.06 Predict capacity results such as mass and volume to check the reasonableness of data using a variety of estimation strategies.
- D.05.07 Solve real-world problems of length, perimeter, area, mass, volume, and capacity using estimation strategies.
- D.05.08 Solve real-world and mathematical problems with the help of estimating measurements.
Examples: time, weight/mass, temperature, money, perimeter, area, volume, in either U.S. or metric units.
- D.05.09 Predict capacity results such as mass and volume to check the reasonableness of data using a variety of estimation strategies.
- D.05.10 Solve real-world problems of length, perimeter, area, mass, and volume, using estimation strategies.

D.06.00 Geometry

Anchor Standard:

Apply a variety of strategies, geometric properties, and formulas to solve real-world and mathematical problems.

Competencies (Benchmarks):

- D.06.01 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.06.02 Recognize types of angles.
Examples: acute, obtuse, straight, and right.
- D.06.03 Recognize types of triangles:
Examples: equilateral, right, scalene, and isosceles.
- D.06.04 Know the number of degrees in a triangle and a quadrilateral.
- D.06.05 Label geometric figures using appropriate terminology.
Examples: parallel, perpendicular, similar, and congruent.
- D.06.06 Apply geometric formulas for circumference, cubes, rectangular solids, and cylinders.

D.07.00 Algebra

Anchor Standard:

Apply the equality, commutative, associative, and distributive properties to show expressions equivalent expressions.

Competencies (Benchmarks):

- D.07.01 Read and write names, words, and standard numerals with integers.
- D.07.02 Identify concrete and symbolic representations of integers to real-world situations.
Example: reading positive and negative numbers for temperatures (85° and -5°)
- D.07.03 Locate integers using a number line.
- D.07.04 Compare and differentiate the relative size of integers.
- D.07.05 Add, subtract, multiply and divide integers.
- D.07.06 Select the appropriate operation to solve specific problems involving integers.
- D.07.07 Solve real-world problems involving integers.
- D.07.08 Calculate the square of numbers 1 – 20.
- D.07.09 Calculate the square roots of perfect squares.
- D.07.10 Apply place value concepts of grouping based on powers of 10 (1, 10, 100, 1000, 10,000, 100,000, 1,000,000).
- D.07.11 Solve simple problems by applying the algebraic order of operations.
- D.07.12 Write algebraic expressions.
Examples: $2x$; $2m - 10$
- D.07.13 Solve one-step equations involving any mathematical operations.
Examples: $x + 9 = 27$; $x/4 = 3$; $x - (-4) = 2$.
- D.07.14 Comprehend commutative and associative properties.
Examples: $6 \times 2 = 2 \times 6$; $1 + 3 + 4 = 3 + 1 + 4$

D.08.00 Data Analysis

Anchor Standard:

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

Competencies (Benchmarks):

- D.08.01 Use data from charts and tables.
Example: tax on purchases using a sales tax table; calculating tax from a withholding tax schedule, or income tax schedule.
- D.08.02 Compare and differentiate the concepts of mean, median, and mode.
- D.08.03 Calculate distances on a map using the map scale.
- D.08.04 Interpret a time zone map to determine the time in a variety of locations.

D.09.00 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.09.01 Identify personal and household purchases that require a short- or long- term loan.
- D.09.02 Calculate and compare the unit price of personal and household purchased among different sizes and brands.
- D.09.03 Compute percentage discounts and sale prices to determine final cost.
- D.09.04 Calculate and compare loan interest, credit card interest, and interest-earning savings plans.
- D.09.05 Calculate a payment rate for a purchase.
- D.09.06 Calculate a payment rate for a purchase that requires a down payment.
- D.09.07 Calculate the final purchase price that includes monthly payments and interest rate.