

Washington State ABE Mathematics Competencies (September 29, 2000)

Level 1 Exit Criteria:	Learner can count, add and subtract three digit numbers, can perform multiplication through 12; can identify simple fractions and perform other simple arithmetic operations.
1.1.0	Compare and contrast whole numbers to select goods and services using language to request information.
1.1.1	Read whole numerals, numbers, and words representing numbers to thousands.
1.1.2	Write whole numerals, numbers, and words representing numbers to thousands.
1.1.3	Match sets of objects or pictures to numerals, numbers, and words representing numbers to hundreds.
1.1.4	Employ these skills in real-life applications.
1.1.5	Organize numbers in correct order.
1.2.0	Use place value to compare and order whole numbers applying principles of comparison-shopping.
1.3.0	Add single digit whole numbers by counting or by mastery of basic addition facts.
1.3.1	Apply learning in real-life situations using mental math, counting, and/or a calculator.
1.4.0	Subtract single digit whole numbers by counting or by mastery of basic subtraction facts.
1.4.1	Apply learning to real-life situations using mental math, counting, and/or a calculator.
1.5.0	Identify coins by name and value, organize, relate and apply information to real-life situations.
1.5.1	Problem-solve and think critically to determine cost and resources.
1.6.0	Design schedule of daily activities, organize time and materials.
1.6.1	State personal needs regarding number/amount needed.
1.7.0	Interpret and work with pictures, numbers, and symbolic information providing appropriate feedback..
1.8.0	Solve problems using appropriate mathematical procedures and creative thinking skills to generate solutions.
Level 2 Exit Criteria:	Individual can perform with high accuracy all four basic math operations using whole numbers up to three digits; can identify and use all basic mathematical symbols.
2.1.0	Identify place value and read and write whole numbers to millions.
2.1.1	Write whole numbers in forms.
2.2.0	Compare and round whole numbers, organize values, and apply information.
2.2.1	Use place value to order whole numbers.
2.2.2	Round numbers to the nearest ten through to the nearest million.
2.3.0	Count fifteen consecutive numbers beginning at any value less than one thousand.
2.4.0	Add three-digit whole numbers, organize, relate and apply the information to real-life situations.
2.4.1	Master basic addition facts.
2.4.2	Add whole numbers without carrying.
2.4.3	Add whole numbers with carrying
2.4.4	Solve addition problems in real-life situations demonstrating the capacity to manage and budget money.
2.5.0	Subtract three-digit whole numbers organize, relate and apply the information to real-life situations.
2.5.1	Master basic subtraction facts.
2.5.2	Subtract without borrowing.
2.5.3	Subtract with borrowing.
2.5.4	Subtract from whole numbers with zeros.
2.5.5	Solve subtraction problems in real-life situations.
2.6.0	Multiply whole numbers up to and including 12 times 12 to draw conclusions or evaluate the effectiveness of a process, procedure or system.
2.6.1	Master basic multiplication facts.
2.6.2	Multiply whole numbers without carrying.
2.6.3	Multiply whole numbers with carrying.
2.6.4	Solve multiplication problems in real-life situations using a variety of methods to purchase goods and services and the ability to evaluate salary and job opportunities regarding wage versus expenses.
2.7.0	Divide whole numbers, compare and contrast problem solving, and organize information.
2.7.1	Master basic division facts.
2.7.2	Divide by one-digit numbers.
2.7.3	Divide by two-digit numbers.
2.7.4	Divide numbers that leave remainders.
2.7.5	Add zeros as placeholders.
2.7.6	Apply division skills to real-life situations to select goods, manage and budget, articulate a problem, apply the information and use creative thinking skills.
2.8.0	Compute and count change, manage and budget money, and use creative thinking skills to generate new solutions and relate information.

Washington State ABE Mathematics Competencies (September 29, 2000)

- 2.9.0 Identify and use all basic mathematical symbols.
 - 2.9.1 Demonstrate the ability to view critically and adjust strategies.
- 2.10.0 Find the average of whole numbers demonstrating the capacity to modify solutions, recognize behaviors that affect job performance and satisfaction, and understand methods to obtain housing and utilities.
- 2.11.0 Estimate answers to whole number computations and real-life word problems.
 - 2.11.1 Compare and contrast to select, purchase and/or use a variety of goods and services in the workplace or as consumers.
- 2.12.0 Identify key words and determine which operations are required to solve real-life word problems using creative thinking, modifying solutions and identifying causes.
- 2.13.0 Identify simple fractions, organize information, analyze, compare and contrast a process, procedure or system..
- 2.14.0 Solve a variety of problems relating to workplace and consumer issues using critical thinking with whole numbers.

Level 3 Exit Criteria:	Individual can perform all four basic math operations with whole numbers and fractions; can determine correct math operations for solving narrative math problems and can convert fractions to decimals and decimals to fractions; can perform basic operations on fractions.
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- 3.1.0 Read, write, and interpret fractions to organize, relate and apply information to real-life situations.
 - 3.1.1 Identify a proper fraction and identify what the numerator and denominator represent.
 - 3.1.2 Identify the three types of fractions: proper, improper, and mixed.
 - 3.1.3 Reduce fractions to lowest terms.
 - 3.1.4 Raise fractions to higher terms.
 - 3.1.5 Change improper fractions to whole or mixed numbers and change mixed numbers to improper fractions.
 - 3.1.6 Compare common fractions.
- 3.2.0 Multiply fractions.
 - 3.2.1 Multiply a fraction by a fraction without canceling.
 - 3.2.2 Multiply a fraction by a fraction with canceling
 - 3.2.3 Multiply a fraction and a whole number.
 - 3.2.4 Multiply mixed numbers.
 - 3.2.5 Solve fraction real-life word problems using multiplication.
- 3.3.0 Divide fractions.
 - 3.3.1 Divide a fraction by a fraction.
 - 3.3.2 Divide whole numbers by fractions.
 - 3.3.3 Divide fractions by whole numbers.
 - 3.3.4 Divide mixed numbers.
 - 3.3.5 Divide by mixed numbers.
 - 3.3.6 Solve fraction real-life word problems by using division.
- 3.4.0 Add fractions.
 - 3.4.1 Add fractions with like denominators.
 - 3.4.2 Add fractions with unlike denominators.
 - 3.4.3 Solve fraction real-life word problems using addition
- 3.5.0 Subtract fractions.
 - 3.5.1 Subtract fractions with like denominators.
 - 3.5.2 Subtract fractions with unlike denominators.
 - 3.5.3 Subtract using borrowing in fraction problems.
 - 3.5.4 Solve fraction real-life word problems using subtraction.
- 3.6.0 Read, write, and interpret decimals to organize , relate and apply information to real-life situations.
 - 3.6.1 Read, write, and identify place value through thousandths for decimals.
 - 3.6.2 Compare and order decimals.
 - 3.6.3 Round decimals to the nearest tenth through to the nearest thousandth.
- 3.7.0 Convert between decimals and fractions to be able to incorporate and analyze components of a process, procedure or system.
- 3.8.0 Add decimals and solve a variety of real-life word problems using addition.
- 3.9.0 Subtract decimals and solve a variety of real-life word problems using subtraction.
- 3.10.0 Multiply decimals and solve a variety of real-life word problems using multiplication.
- 3.11.0 Divide decimals.
 - 3.11.1 Divide decimals and whole numbers by decimals
 - 3.11.2 Divide decimals by whole numbers.
 - 3.11.3 Solve real-life decimal word problems using division

Washington State ABE Mathematics Competencies (September 29, 2000)

- 3.12.0 Choose the correct operation to solve a variety of real-life word problems involving decimals and fractions.
 - 3.12.1 Use financial services related to banking, budgeting, shopping and interpreting bills.
 - 3.12.3 Display the capacity to use a variety of methods to purchase goods and services.
- 3.13.0 Recognize, name and use metric and/or standard units to measure length, weight, volume and temperature.

Level 4 Exit Criteria:	Individual can perform all basic math functions with whole numbers, decimals and fractions; can interpret and solve simple algebraic equations, tables and graphs and can develop own tables and graphs; can use math in business transactions.
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- 4.1.0 Identify the problem, apply an appropriate solution, and evaluate the process using ratio and proportion, to solve real-life problems.
 - 4.1.1 Write a ratio of two quantities in simplest form.
 - 4.1.2 Write and solve proportional equations.
 - 4.1.3 Recognize when to use a proportion to solve a problem.
- 4.2.0 Communicate an understanding of the percent concept and percents relate to such consumer issues as purchasing, budgeting and managing finances.
- 4.3.0 Demonstrate when and how to use fractions, decimals, and percents interchangeably.
- 4.4.0 Identify and solve for the whole, part, and percent to make informed financial decisions.
 - 4.4.1 Understand and apply the concept of percent of increase or decrease in order to analyze data such as that found in charts and graphs.
 - 4.4.2 Calculate simple interest to make financial decisions.
- 4.5.0 Use formulas for perimeter, area and volume appropriately to select and evaluate goods and services.
 - 4.5.1 Convert among U.S. standard measurements (i.e., inches to feet, pounds to ounces, etc.).
- 4.6.0 Read, interpret, and use schedules, tables, and graphs to locate and use different modes of transportation and/or evaluate the effectiveness or efficiency of a process, procedure, or system.

Level 5 Exit Criteria:	Individual can make mathematical estimates of time and space and can apply principles of geometry to measure angles, lines and surfaces; can also apply trigonometric functions.
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