

Math on the Move (Available in English and Spanish)

SCOPE OF COURSE

Math on the Move is geared toward out-of-school youth who are looking to complete their high school equivalency exam. Materials introduce and strengthen basic mathematical skills to prepare a student for enrollment in a GED preparation course or self-study program. There are **24 lessons** in either English or Spanish, written at an accessible reading level. The lessons are designed to be used as stand-alone segments to address a particular skill area. Although basically **non-sequential**, each lesson builds upon assumed knowledge addressed in prior lessons.

SEQUENCE OF SKILLS

LESSON 1 – Arithmetic Operations

- Perform the operations of addition, subtraction, multiplication, and division with whole numbers

LESSON 2 – Operations with Integers

- Add and subtract integers
- Determine the absolute value of a number
- Solve word problems that involve adding and subtracting integers

LESSON 3 – Multiplying, Dividing, and Exponents

- Multiply and divide integers
- Solve word problems that involve operations with integers
- Understand exponents as repeated multiplication
- Evaluate exponents with powers up to three

LESSON 4 – Factors and Multiples

- Understand what factors and multiples are
- Write a number as a product of its prime factors
- Find the greatest common factor and the least common multiple of two numbers
- Use the correct order of operations

LESSON 5 – Introduction to Fractions

- Understand what a fraction represents
- Find equivalent fractions

LESSON 6 – Operations with Fractions

- Add and subtract fractions with unlike denominators
- Multiply and divide fractions

LESSON 7 – Mixed Numbers

- Understand the relationship between fractions and mixed numbers
- Convert between mixed numbers and improper fractions
- Add, subtract, multiply, and divide with mixed numbers

LESSON 8 – Decimals

- Understand conceptually what decimal notation means
- Be able to convert from decimals to mixed numbers and fractions
- Round decimals to a given place value

LESSON 9 – Operations with Decimals

- Perform addition, subtraction, multiplication, and division with two decimals

LESSON 10 – Percents

- Understand the relationship between decimals and percents
- Convert between decimals and percents
- Find percentages of decimals and whole numbers
- Find what percent a number is of another number

LESSON 11 – Variables and Unknowns

- Understand how variables are used in math
- Solve simple equations and check with substitution

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SEQUENCE OF SKILLS

LESSON 12 – Simplifying, Substituting, and Solving

- Simplify algebraic expressions
- Substitute values for variables in algebraic expressions
- Solve and check two-step equations

LESSON 13 – Verbal Phrases to Algebraic Expressions

- Translate verbal phrases to algebraic expressions
- Solve word problems by translating sentences into equations

LESSON 14 – Measurement Systems

- Understand customary and metric units of measurement, weight, and capacity
- Convert between different units within one measurement system, including time

LESSON 15 – Rates and Ratios

- Understand what a rate and a ratio are
- Solve word problems that involve rates and ratios

LESSON 16 – Proportions

- Understand what a proportion is
- Solve word problems using proportions

LESSON 17 – Introduction to Geometry

- Understand the definition of points, lines, rays, line segments
- Classify angles and certain relationships between lines

LESSON 18 – Quadrilaterals

- Understand the definition of a quadrilateral
- Distinguish between different types of quadrilaterals
- Find the perimeter and area of a quadrilateral
- Determine when polygons are similar
- Use properties of similar polygons to solve problems

LESSON 19 – Triangle Properties

- Understand the definition of a triangle
- Distinguish between different types of triangles
- Use the Pythagorean Theorem to find the missing side in a right triangle

LESSON 20 – Perimeter, Area, and Similarity of Triangles

- Determine the perimeter of a triangle using algebra
- Find the area of a triangle using the formula $A = \frac{1}{2}bh$
- Find a missing side of a triangle using properties of proportion and similar figures

LESSON 21 – Arithmetic Operations

- Understand the concepts of radius and diameter
- Determine the circumference of a circle, given the diameter or radius
- Determine the area of a circle, given the diameter or radius

LESSON 22 – 3-Dimensional Solids

- Classify 3-Dimensional solids
- Determine the volume of 3-Dimensional solids

LESSON 23 – Coordinate Geometry

- Construct and label the x - and y -axes of a graph
- Plot a point, given its coordinates
- Identify coordinates of a plotted point
- Determine the slope and y -intercept of the graph of a line

LESSON 24 – Reading Graphs and Tables

- Read and interpret data from different types of data displays