Integrated Math Concepts
Available in English and Spanish

SCOPE OF COURSE

This unique course provides a flexible, concentrated, step-by-step series of modules designed to enhance student ability to master the various components of secondary level math skills. This course offers a variety of ways in which it may be utilized, either in whole or in part, to best meet student needs, ranging from remediation and skill building, in preparation for enrollment in one of the traditional, standard high school math classes, or as a credit bearing course in its own right, should local school administrators elect to do so. Each of the ten modules teaches concepts and strategies that are essential for establishing a firm foundation in that particular content area. The ten course modules, which are non-sequential in nature, address the following content areas: **real numbers, sets, variables and axioms, properties of real numbers, fractions, decimals, order of operations, equations, geometry,** and **properties of polygons.**

SEQUENCE OF SKILLS

MODULE 1 – Real Numbers

1. Learn to recognize and differentiate between natural numbers, whole numbers, integers, rational numbers, irrational numbers, and real numbers.
2. Relate the number line to the collection of real numbers.

MODULE 2 – Sets

1. Recognize a well-defined set
2. Learn set notation and terminology
3. Study some subsets of real numbers – prime and composite numbers

MODULE 3 – Variables and Axioms

1. Learn
   - why, when, and how to use a variable
   - the definition of an axiom
   - some specific axioms

MODULE 4 – Properties of Real Numbers

1. Learn the characteristics and uses of the following properties of real numbers:
   - the commutative property
   - the associative property
   - the distributive property
   - identity elements
   - inverses
   - the multiplication property of zero
   - to understand why division by zero is not allowed
   - to introduce the uniqueness and existence properties

MODULE 5 – Fractions

1. Become comfortable with fractions by
   - understanding their make-up
   - comparing their sizes

2. Prepare for operations with algebraic fractions
- by understanding the concepts behind the algorithms
- by determining if solutions are reasonable

MODULE 6 – Decimals
1. Become comfortable with decimals and decimal operations
- by understanding the relative size of decimals
- by understanding why the algorithms or rules dealing with decimals work
- by testing answers for reasonableness

MODULE 7 – Order of Operations
1. Understand why problems need to be performed in a certain order
2. Evaluate numerical expressions using order of operations
3. Evaluate variable expressions for specific values

MODULE 8 – Equations
1. Translate algebraic expressions and equations, as well as consecutive integer questions
2. Solve:
- One-step equations
- Two-step equations
- Complex equations (combining like terms, use of the distributive property, variables on both sides)
- Multi-step equations
3. Translate algebraic inequalities
4. Solve and graph solutions to one and two-step inequalities

MODULE 9 – Geometry
1. Describe points, lines, and planes
2. Sketch and label points, lines, and planes
3. Use problem solving to explore points, lines, and planes
4. Define line segments, rays, and angles
5. Recognize and examine types of angles
6. Explore problems using angle properties
7. Explore line relationships

MODULE 10 – Properties of Polygons
1. Recognize and classify 2-dimensional shapes – circles, triangles and quadrilaterals
2. Find 2-dimensional shapes in the environment
3. Explore the sum of the measures of the angles of triangles and quadrilaterals
4. Classify a polygon according to the number of its sides
5. Count diagonals in polygons
6. Find the measures of the interior and exterior angles in polygons