Math III Foundations

Mehlville School District
Special Education
Grades 9 - 12, Duration 1 Year, 1 Credit

Rationale

The need to understand and be able to use mathematics in everyday life and in the workplace has never been greater and will continue to increase. The underpinnings of everyday life are increasingly mathematical and technological. Just as the level of mathematics needed for intelligent citizenship has increased, so too has the level of mathematical thinking and problem solving needed in the workplace. Those who understand and can do mathematics will have significantly enhanced the opportunities and options for shaping their futures. Mathematical competence opens doors to productive futures.

Course Description

This course is designed to prepare the student for further mathematical study by enhancing some previously learned mathematical processes and developing new processes. The student will learn to apply these processes using mathematical reasoning and technology to solve everyday problems that have meaning beyond the classroom. This course gives the student the opportunity to strengthen skills using the basic operations of addition, subtraction, multiplication and division of whole numbers, decimals and fractions. The foundations for algebra and geometry are introduced as problem-solving skills are stressed. In this support model, the student's IEP goals are addressed in the classroom while following the Mehlville curriculum. Lectures, presentations, assignments, and materials are adapted to create opportunities for student success.

Prerequisites

Prerequisite: IEP team recommendation

Open to: 9. 10, 11, 12

Credit: 1 Unit - Two Semesters (Mathematics)

Course Objectives

1. The student will represent and analyze situations and structures using algebraic symbols with 80% accuracy as assessed by classroom assignments, homework, projects and tests. Locally assessed. (GLE: MA 9-12, MA4; 3.2, 3.3)

A. Use symbolic algebra to represent unknown qualities in expressions and solve linear equations with one variable

B. Use the commutative, distributive and associative properties to generate equivalent forms for simple algebraic expressions

2. The student will compute fluently and make reasonable estimates with 80% accuracy as assessed by classroom assignments, homework, projects and tests. Locally assessed. (GLE: MA 9-12, MA1; 3.2)(A+: Speaking)

A. Judge the reasonableness of numerical computations and their results

B. Solve problems using ratios and rates

C. Solve problems involving proportions

3. The student will use mathematical models to represent and understand qualitative relationships with 80% accuracy as assessed by classroom assignments, homework, projects and tests. Locally assessed.
(GLE: MA 9-12, MA4; 1.6, 3.6) (A+: Reading)

A. Model and solve problems using multiple representations such as graphs, tables, expressions and linear equations

4. The student will analyze characteristics and properties of two and three dimensional geometric shapes and develop mathematical arguments about geometric relationships with 80% accuracy as assessed by classroom assignments, homework, projects and tests. Locally assessed. (GLE: MA 9-12, MA2; 1.10) (A+: Writing)

A. Analyze and classify two and three dimensional shapes by describing their attributes

5. The student will use visualization, spatial reasoning and geometric modeling to solve problems with 80% accuracy as assessed by classroom assignments, homework, projects and tests. Locally assessed. (GLE: MA 9-12, MA2; 3.3)

A. Draw or use visual models to represent and solve problems

6. The student will apply appropriate techniques, tools and formulas to determine measurements with 80% accuracy as assessed by

classroom assignments, homework, projects and tests. Locally assessed. (GLE: MA 9-12, MA2; 3.2)

A. Use tools to measure angles to the nearest degree and classify the angle as acute, obtuse, right, straight or reflex

7. The student will demonstrate the ability to use technology as assessed by classroom assignments and tests. Locally assessed. (GLE: MA 9-12, MA3; 1.4, 2.7) (A+: Research)

A. Apply operations to real numbers using mental computation or paper and pencil calculations for simple cases and technology for more complicated cases

BOE 7-30-09