

NUMBER THEORY & RATIONAL NUMBERS

Module Descriptions

This course provides skills and knowledge needed to assist students who are working on mathematical skills typically taught in grades 5 through 8. The content is consistent with the standards recommended by the National Council of Teachers of Mathematics. It includes the specific skill building areas of number sense; computational techniques for fractions, decimals, and percents; and their related applications as they apply to intermediate and middle school learners.

Module A: Mathematical Literacy (1.5 hours)

The paraeducator will:

- 1) Identify common misconceptions about mathematics.
- 2) Identify the role of communication in mathematical literacy development.
- 3) Identify the goal of problem-solving and its development in the classroom.
- 4) Compare and contrast mathematical literacy and language/reading/writing (literacy) development.

Module B: Number Theory and Number Representations (3 hours)

The paraeducator will:

- 1) Apply number theory concepts to represent numbers in a variety of ways.
- 2) Develop working concepts of factors and multiples.
- 3) Use place-value concepts to represent numbers.
- 4) Develop meanings for common rational and irrational numbers.

Module C: Number Sense and Fractional Concepts (5 hours)

The paraeducator will:

- 1) Use number sense to justify the reasonableness of solutions for a variety of computation and problem solving situations.
- 2) Use concrete materials to develop fractional concepts for addition and subtraction.
- 3) Use concrete materials to develop fractional concepts of multiplication and division.

Module D: Decimal and Percent Concepts (3 hours)

The paraeducator will:

- 1) Use concrete materials to develop decimal concepts.
- 2) Use concrete materials to develop percent concepts.
- 3) Connect decimal and percent concepts.

Module E: Making Connections (2.5 hours)

The paraeducator will:

- 1) Develop conversion algorithms among fractions, decimals, and percents.
- 2) Compare rational and irrational numbers through equivalent forms using a variety of strategies.
- 3) Apply computational procedures for fractions, decimals and percents to real-world problems.