Rhode Island Standards and Framework Correlated to Merit Software Math Programs

Grades K-4

NUMBER SENSE

Through problem-solving situations, all students will construct their own understanding, so that by the end of grade 4 they will:

- Have an intuitive understanding of whole numbers.
- Develop number meanings by exploring number relationships through counting, comparing, estimating, ordering, grouping, and patterning.
- Demonstrate place value concepts.
- Construct physical models to represent and demonstrate understanding of whole numbers, integers, fractions, and decimals.
- Communicate the reasonableness of possible solutions.
- Create and solve real-world problems to interpret the use of numbers.

Merit Software: Fraction Shape-Up

Grades 5-8

PATTERNS, RELATIONS, and ALGEBRA

Through problem-solving situations, all students will construct their own understanding, so that by the end of grade 8 they will:

- Identify, analyze, extend, and create patterns in different formats.
- Describe and represent relations through different formats (tables, graphs, verbal rules, open sentences, equations, and geometry).
- Identify and justify an appropriate representation for a given situation.

- Use patterns and functions to represent and solve problems.
- Use concepts of variable, expression, and equation.
- Analyze tables, graphs, rules, equations, and identify relationships.
- Solve linear equations.
- Investigate inequalities.

Merit Software: Pre-Algebra Shape-Up, Basic Algebra Shape-Up, Word Problem Shape-Up

COMPUTATION and ESTIMATION
Through problem-solving situations, all students will construct their own understanding, so that by the end of grade 8 they will:

- Develop proficiency with addition, subtraction, multiplication, and division of rational numbers.
- Create, analyze, and communicate procedures for computation and strategies for stimation.
- Develop and communicate an understanding for solving proportions.

Merit Software: Pre-Algebra Shape-Up, Basic Algebra Shape-Up, Word Problem Shape-Up

NUMBER SENSE and NUMBER SYSTEMS
Through problem-solving situations, all students will construct their own understanding, so that by the end of grade 8 they will:

- Have an intuitive understanding of rational numbers.
- Justify the appropriateness of a method of approximation or calculation and verify the reasonableness of a result.
- Represent and use numbers (integers, fractions, decimals, exponents, and scientific notation).
- Represent and apply ratios, proportions, and percents.
- Demonstrate how basic arithmetic operations are related to one another.

- Demonstrate the composition and decomposition of numbers (primes, factors, and multiples).

- Investigate and represent number relations, using various types of graphs.

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Grades 10-11

PATTERNS, RELATIONS, and ALGEBRA
Through problem solving situations, all students will construct their own understanding, so that by the end of grade 10 they will:

- represent situations that involve variable quantities with expressions, equations, and inequalities.

- Use tables or graphs to interpret expressions, equations, and inequalities.

- Solve equations and inequalities.

- Model real-world situations with a variety of patterns and relations.

- Recognize and model generalities of patterns.

- Have an intuitive understanding of algebraic procedures.

Merit Software: Basic Algebra Shape-Up

Grades 11-12

PATTERNS, RELATIONS, and ALGEBRA
Through problem-solving situations, all students will construct their own understanding, so that by the end of grade 12 they will:

- Use a variety of techniques to solve linear systems.

- Use tables or graphs to investigate the properties and behaviors of patterns and relations.

- Demonstrate the properties and behaviors of patterns and relations.

- Analyze the effects of change on patterns and relations.

Merit Software: Basic Algebra Shape-Up