3501.0735 GRADE 7 STANDARDS.

Subpart 1. **Number and operation.**

A.   The student will apply, read, write, represent, and compare positive and negative rational numbers, expressed as integers, fractions, and decimals.

B.   The student will calculate with positive and negative rational numbers, and rational numbers with whole number exponents, to solve real-world and mathematical problems.

Subp. 2. **Algebra.**

A.   The student will understand the concept of proportionality in real-world and mathematical situations, and distinguish between proportional and other relationships.

B.   The student will recognize proportional relationships in real-world and mathematical situations. The student will represent these and other relationships with tables, verbal descriptions, symbols, and graphs. The student will solve problems involving proportional relationships and explain results in the original context.

C.   The student will apply understanding of order of operations and algebraic properties to generate equivalent numerical and algebraic expressions containing positive and negative rational numbers and grouping symbols. The student will evaluate such expressions.

D.   The student will represent real-world and mathematical situations using equations with variables.   The student will solve equations symbolically, using the properties of equality. The student will also solve equations graphically and numerically. The student will interpret solutions in the original context.

Subp. 3. **Geometry and measurement.**

A.   The student will use reasoning with proportions and ratios to determine measurements, justify formulas, and solve real-world and mathematical problems involving circles and related geometric figures.

B.   The student will analyze the effect of change of scale, translations, and reflections on the attributes of two-dimensional figures.

Subp. 4. **Data analysis and probability.**

A.   The student will use mean, median, and range to draw conclusions about data and make predictions.

B.   The student will display and interpret data in a variety of ways, including circle graphs and histograms.

C.   The student will calculate probabilities and reason about probabilities using proportions to solve real-world and mathematical problems.

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