MAJOR WORK OF THE CCR STANDARDS FOR MATHEMATICS LEVELS (MATH TOOL 4)

Level A (ABE Level 1)

**Number and Operations**
- Developing understanding of whole number place value for tens and ones
- Developing understanding of addition and subtraction and the properties of these operations

**Algebraic Thinking and Functions**
- Developing initial understanding of equation, variable and the meaning of the equal sign

**Geometry and Measurement**
- Describing and reasoning about shapes and their attributes
- Developing understanding of linear measurement

**Data, Statistics and Probability**
- Organizing, representing, and interpreting simple categorical data

Level B (ABE Level 2)

**Number and Operations**
- Extending understanding of base-10 notation
- Adding and subtracting to 1,000; fluency to 100
- Understanding multiplication and division of whole numbers to 100
- Understanding division as inverse of multiplication; single-digit divisors
- Developing understanding of fractions, especially unit fractions

**Algebraic Thinking and Functions**
- Identifying and explaining patterns in arithmetic

**Geometry and Measurement**
- Using standard units for linear measurement
- Developing understanding of area and its relationship to addition and multiplication
- Analyzing two-dimensional shapes

**Data, Statistics and Probability**
- Beginning understanding of scaling picture and bar graphs

Level C (ABE Level 3)

**Number and Operations**
- Extending the number system to positive rational numbers
- Extending place value understanding to decimals
- Attaining fluency with multi-digit operations using whole numbers and decimals
- Understanding fraction equivalence and comparison
- Developing fluency with sums and differences of fractions
- Connecting ratio and rate to whole number multiplication and division

**Algebraic Thinking and Functions**
- Writing, evaluating, and interpreting expressions and equations

**Geometry and Measurement**
- Developing understanding of the coordinate plane
- Classifying two-dimensional shapes based on sides and angles
- Developing an understanding of volume and surface area
Data, Statistics and Probability
- Developing understanding of statistical variability and measures of center and distribution

Level D (ABE Level 4)
Number and Operations
- Extending number sense and fluent operations to all rational numbers, including negatives

Algebraic Thinking and Functions
- Understanding ratio and rate and using them to solve problems
- Applying proportional relationships
- Working with expressions and linear equations
- Solving linear equations and systems of linear equations
- Developing the concept of function
- Graphing functions in the coordinate plane and analyzing their graphs

Geometry and Measurement
- Classifying geometric figures based on properties
- Solving problems involving scale drawings
- Measuring two- and three-dimensional figures: area, surface area, and volume
- Analyzing two- and three-dimensional shapes using distance and angle measurements, similarity, and congruence
- Applying the Pythagorean theorem

Data, Statistics and Probability
- Understanding patterns of association for bivariate data and describing them with a linear equation when appropriate
- Summarizing data and data distributions
- Drawing inferences about populations based on random samples (probability distributions)

Level E (ABE Levels 5 and 6)
Number and Operations
- Extending understanding of number systems to the set of real numbers
- Writing equivalent expressions involving radicals and integer exponents
- Reasoning quantitatively through the use of units and appropriate levels of precision

Algebraic Thinking and Functions
- Defining, evaluating, comparing, and modeling with linear, quadratic, and exponential functions and equations
- Building, interpreting, and analyzing functions using correct notation
- Reasoning with and solving linear, quadratic, and exponential equations and linear inequalities
- Interpreting and using the structure of expressions to solve problems
- Operating with algebraic expressions, including polynomials and rational expressions

Geometry and Measurement
- Applying similarity and congruence concepts to geometric figures, including right triangles
- Using geometric models to solve measurement problems involving volume

Data, Statistics and Probability
- Summarizing, describing, displaying, and interpreting data
- Understanding and applying probability concepts
- Summarizing, representing, and interpreting one- and two-variable data, including using frequency tables