

Kansas State Standards Correlated to Merit Software Math Programs

Basic

Objective	Expectation	Merit Software
The student understands basic mathematical concepts	<ol style="list-style-type: none"> 1. Computes with efficiency and accuracy using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a) (\$). 2. States and uses with efficiency and accuracy multiplication facts from 1×1 through 12×12 and corresponding division facts (2.4.K1a) (\$). 3. performs and explains these computational procedures (\$): <ol style="list-style-type: none"> a. adds and subtracts fractions greater than or equal to zero with like denominators (2.4.K1c); 	Word Problem Shape-Up Fraction Shape-Up

Intermediate

Objective	Expectation	Merit Software
Variable, Equations, and Inequalities – The student uses variables, symbols, real numbers, and algebraic expressions to solve equations and inequalities in a variety of situations.	<ol style="list-style-type: none"> 1. Identifies independent and dependent variables within a given situation. 2. Simplifies algebraic expressions in one variable by combining like terms or using the 	Word Problem Shape-Up Pre-Algebra Shape-Up Basic Algebra Shape-Up

	<p>distributive property (2.4.K1a), e.g., $-3(x - 4)$ is the same as $-3x + 12$.</p> <ol style="list-style-type: none"> 1. Solves (2.4.K1a,e) (\$): <ol style="list-style-type: none"> a. one- and two-step linear equations in one variable with rational number coefficients and constants intuitively and/or analytically; b. One-step linear inequalities in one variable with rational number coefficients and constants intuitively, analytically, and graphically; c. Systems of given linear equations with whole number coefficients and constants graphically. 4. Knows and describes the mathematical relationship between ratios, proportions, and percents and how to solve for a missing monomial or binomial term in a proportion (2.4.K1c), e.g., $\frac{2}{1} = \frac{_}{_}$ 5. Represents and solves algebraically (\$): <ol style="list-style-type: none"> a. the number when a percent and a number are given, b. What percent one number is of another number, c. Percent of increase or decrease, e.g., the 	
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	<p>price of a loaf of bread is \$2.00. With a coupon, the cost is \$1.00. What is the percent of decrease?</p> <p>d. Evaluates formulas using substitution</p>	
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College Prep

Objective	Expectations	Merit Software
<p>Patterns – The student recognizes, describes, extends, develops, and explains the general rule of a pattern in a variety of situations.</p>	<ol style="list-style-type: none"> 1. Identifies, states, and continues the following patterns using various formats including numeric (list or table), algebraic (symbolic notation), visual (picture, table, or graph), verbal (oral description), kinesthetic (action), and written <ol style="list-style-type: none"> a. Arithmetic and geometric sequences using real numbers and/or exponents (2.4.K1a); e.g., radioactive half-lives; b. Patterns using geometric figures (2.4.K1h); c. Algebraic patterns including consecutive number patterns or equations of functions, e.g., n, $n + 1$, $n + 2$, ... or $f(n) = 2n - 1$ (2.4.K1c,e); d. Special patterns (2.4.K1a), e.g., Pascal's triangle and the Fibonacci sequence. 	<p>Basic Algebra Shape-Up</p>

<p>Variables, Equations, and Inequalities – The student uses variables, symbols, real numbers, algebraic expressions to solve equations and inequalities in variety of situations.</p>	<ol style="list-style-type: none"> 1. Knows and explains the use of variables as parameters for a specific variable situation (2.4.K1f), e.g., the m and b in $y = mx + b$ or the h, k, and r in $(x - h)^2 + (y - k)^2 = r^2$. 2. Manipulates variable quantities within an equation or inequality (2.4.K1e), e.g., $5x - 3y = 20$ could be written as $5x - 20 = 3y$ or $5x(2x + 3) = 8$ could be written as $8/(5x) = 2x + 3$. 	