

SEVENTH GRADE

PURPOSE:

Students will demonstrate math computation skills with whole numbers, decimals and fractions, and demonstrate those skills in a real life context. Students will complete and/or continue patterns including the n th term. Students will solve equations and proportions. They will plot points and do transformations on the coordinate plane. Students will translate and write or convert algebraic expressions. Students will find areas, surface areas, volumes, and perimeters. They will list the attributes of quadrilaterals and triangles, and apply those attributes to problem solving situations. Students will use scale drawings to determine the actual dimension of the object shown. They will also organize, display, read and convert data from a variety of formats.

BENCHMARKS AND INDICATORS:

Number Sense

1.1 Demonstrates number sense for rational numbers, π , and simple algebraic expressions in one variable

- 711K1 Lists place value, can read and write whole numbers and decimals, converts between scientific notation, fractions, decimals, percents
- 711K1 Solves ratios and proportions
- 711K1 Evaluates powers of whole numbers, find whole number square roots
- 711K2 Compares/orders whole numbers, decimals, integers
- ***7 11A1 Solves real world problems using numbers in various forms**

1.2 Demonstrates an understanding of the rational number system and π ; recognizes, uses, and describes their properties; and extends properties to algebraic expressions in one variable

- 712K3 Names/uses properties as listed in the standards. (associative, commutative, distributive, and identity)
- 712A1 Solves real world problems using the properties to explain reasoning

1.3 Uses computational estimation with rational numbers and π

- 713K2 Estimates using various procedures

1.4 Models, performs and explains computation with rational numbers, π , and algebraic expressions with one variable

- 714K2a Add/subtract whole numbers
- **N*714K2a Add/subtract decimals**
- **N*714K2b,c Multiplies/divides whole numbers & decimals**
- **N*714K2d Add, subtract, multiply, divide fractions with answers in simplest form**
- N714K2e Add, subtract, multiply, divide integers
- N714K2f Uses order of operation with whole numbers
- 714K4 Finds prime factorization, lcm,gcf
- ***714K5 Finds percents of rational numbers**

Algebra

2.1 Recognizes, describes, and explains rules of patterns

- ***721K1a Identifies, states, and continues a pattern using counting numbers including perfect squares, cubes, factors, and multiples**
- ***721K1b Identifies, states, and continues a pattern using positive rational numbers including arithmetic and geometric sequences**
- ***721K4 States the rule to find the n th term of a pattern with one operational change**

2.2 Uses variables, symbols, rational numbers, and one variable simple algebraic expressions to solve linear equations and inequalities

- ***722A1 Represents real world problems using variable and symbols to write linear expressions or one or two step equations**
- 722K5a,b Solves one and two step linear equations
- 722K5c Solves one step linear inequalities
- ***722K7 Solves for a missing term in a proportion**
- ***722K8 Evaluates simple algebraic expressions using positive numbers**

2.3 Recognizes, describes and analyzes constant and linear relationships

- 723K3 Plots points in the coordinate plane

2.4 Generates and uses models to represent relationships

- 724A3 Uses models to make inferences about real world situations

Geometry

3.1 Recognizes geometric figures and compares their properties

- ***731K3 Knows attributes of quadrilaterals and triangles (sides/angles)**
- 731K5 Identifies corresponding parts of similar/congruent triangles
- 731K7 Classifies triangles by sides and angles

3.2 Estimates, measures, and uses measurement formulas

- 732K2 Uses tools of measurement for both standard and metric system.
- 732K3 Converts within measurement systems
- ***732K4 Knows and uses perimeter and area formulas for circles, squares, rectangles, triangles, and parallelogram**
- 732K5 Finds perimeter and area of two dimensional composite figures
- ***732K6 Uses given formulas to find surface area and volumes of rectangular prisms**
- 732K9 Finds missing angles in triangles
- ***732A1c Finds areas and perimeters of two dimensional composite figures**

3.3 Recognizes and performs transformations on two-dimensional geometric figures

- 733K1 Identifies and performs transformations (reflection, rotation, translation, reduction, enlargement)
- ***733A3 Determines actual dimensions of a scale drawing**

3.4 Uses the coordinate plane and the number line

- 734K2 Plots and identifies points on the coordinate plane

Data

4.1 Applies concepts of probability to draw conclusions, generate arguments, and make predictions

- 741K3 Represents the probability of a simple or compound event using fractions, decimals, or percents

4.2 Organizes, displays, and explains data sets

- ***742K1a-g Organizes, displays, reads data from tables, graphs, diagrams, charts, stem and leaf plots, scatter plots, or box and whisker plots**
- 742K4 Determines measures of central tendency (mean, median, mode) from a data set
- 742K5 Determines the range and quartiles of a data set
- ***742A3 Recognizes and explains misleading representation of data or changes in scale**