

Grand Island Public Schools

4th GRADE MATHEMATICS

As a result of their participation in this course, students will:

Strand 1: Communicating Mathematical Thinking

- Build new mathematical knowledge through problem solving. (Problem Solving)
- Apply and adapt a variety of appropriate strategies to solve problems. (Problem Solving)
- Recognize and use connections among mathematical ideas and/or apply in contexts outside of mathematics. (Connections)
- Investigate, develop, and evaluate mathematical arguments and proofs. (Reasoning and Proof)
- Select, apply, and move fluently among mathematical representations to solve problems. (Representation)

Strand 2: Number and Operations

- Read, write, order, and compare large numbers to millions with or without place value charts and number lines.
- Estimate and find sums and differences with multi-digit numbers.
- Estimate to determine if an answer is reasonable.
- Demonstrate simple concepts of positive and negative numbers.
- Multiply two digit by two digit using paper pencil.
- Develop fluency with division facts.
- Divide with one digit divisors.
- Compare and order fractions with or without using manipulatives.
- Add and subtract fractions with like denominators with or without manipulatives.

Strand 3: Algebraic Concepts

- Identify, describe, and extend arithmetic patterns using concrete materials and tables.
- Write and solve number sentences using variables to solve one step problems.
- Illustrate the concept of multiplication and division through the use of diagrams, pictures, arrays, fact families, number lines, or through creating stories.
- Translate between different representations of decimals to the hundredths (concrete, pictorial, verbal, and symbolic).

Strand 4: Geometry, Spatial Concepts, and Measurement

- Identify and describe the properties of acute, obtuse, and right angles.
- Identify and draw parallel and perpendicular lines.
- Create a symmetrical shape with manipulatives or graph paper.
- Draw and identify lines, line segments and angles (including symbolic notation).
- Measure volume by displacement in cubic centimeters/milliliters.
- Find the area of rectangles including squares.
- Estimate angle measures using benchmark angles.
- Solve problems using standard and metric measures for linear measure, area, and temperature.
- Create a rectangle with a specific area and determine the perimeter.

Strand 5: Data Analysis, Probability, and Statistics

- Organize and represent data in point graphs.
- Identify categorical and numerical variables.
- Find the median of an odd set of numbers.
- Find the mean (with a calculator) of a data set.
- Interpret and analyze data in point graphs to form hypotheses and make predictions.