

5th Grade Math Unit 1

Content Area	Math
Unit Title/Topic	Measurement and Data
Course/Grade Level	5 th Grade
Unit Summary	Students focus on converting like measurement units within a given measurement system; representing and interpreting data; understanding concepts of volume and relating volume to multiplication and addition.
Time Frame	<i>weeks</i>

Desired Results

Priority Standards:

- 5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
- 5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
 - a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.
 - b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- 5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
 - a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
 - b. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.
 - c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Supporting Standards:

- 5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*
- 5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.

Continuous Foundational Standards:

Nebraska State Standard

- MA 5.2.5.b Identify correct unit (customary or metric) to the measurement situation.
- MA 5.2.5.c Estimate and measure length with customary units to the nearest $\frac{1}{4}$ inch.
- MA 5.2.5.e Measure weight (mass) and temperature using metric units.
- MA 5.2.5.f Determine the area of rectangles and squares.
- MA 5.4.1.b Represent the same set of data in different formats.
- MA 5.4.1.c Draw conclusions based on a set of data.
- MA 5.4.1.d Find the mean, median, mode, and range for a set of whole numbers.
- MA 5.4.1.e Generate questions and answers from data sets and their graphical representations.
- MA 5.4.2.a Make predictions based on data to answer questions from tables, bar graphs, and line graphs.
- MA 5.4.3.a Perform and record results of probability experiments.
- MA 5.4.3.b Generate a list of possible outcomes for a simple event.
- MA 5.4.3.c Explain the likelihood of an event that can be represented by a number from 0 to 1.