

Grade: 5 Subject: Mathematics	Unit 6: Volume, Capacity and Weight
Big Idea/Rationale	<ul style="list-style-type: none"> • In this unit, students develop some important relationships in measurement. They use what they know about length and area to develop a formula for volume. Then students change the length or the area of a figure and predict how the volume will change. Students will also compare volume and capacity, and mass and weight. Activities in the unit provide opportunity for students to build familiarity with both metric and customary units.
Enduring Understanding (Mastery Objective)	<p>Students will understand that:</p> <ul style="list-style-type: none"> • Figures can be described, classified and analyzed by their faces, edges and vertices. • There is a formula to determine the volume of a rectangular prism or cube. • Area and volume increase when dimensions increase. • Relationships between measurement units of length, units of capacity, units of weight/mass can be expressed as a ratio and used to convert between units.
Essential Questions (Instructional Objective)	<ul style="list-style-type: none"> • What is a solid figure? • What information can you get by viewing solids from different perspectives? • How can area and volume be found? • How can measurements be used to solve problems? • How are measurement units converted within a system?
Content (Subject Matter)	<ul style="list-style-type: none"> • Visualize the cubic units contained in a cube or a solid rectangular figure. • Use the formula to calculate the volume of a rectangular prism. • Identify whether a situation involves measuring length, area or volume. • Examine and apply relationships among figures measured in one dimension, two dimensions and three dimensions. • Explore the relationship among metric and among customary units of capacity. • Solve problems involving metric and customary measures of capacity. • Explore the relationships among metric units of mass and among customary units of weight. • Solve problems involving metric measures of mass and customary measures of weight. • Convert, add and subtract metric and customary units. • Estimate metric and customary measurements. • Compare metric and customary units. • Solves problems involving Fahrenheit and Celsius temperatures. • Identify appropriate measurement tools and units. • Interpret and make a stem-and-leaf plot.

	<ul style="list-style-type: none"> • Solve a variety of problems using mathematical concepts and skills.
Skills/ Benchmarks (CCSS Standards)	<ul style="list-style-type: none"> • 5.MD.C.3: Recognize volume as an attribute of solid figures and understand concepts of volume measurement. • 5.MD.C.3.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. • 5.MD.C.3.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.C.4: Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft and improvised units. • 5.MD.C.5: Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. • 5.MD.C.5.A: Find the volume of a right rectangular prism with whole number side lengths by packing it with unit cubes and show that 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 threefold whole-number products as volumes (associative property of multiplication) • 5.MD.C.5.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. • 5.MD.C.5.C: Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of non-overlapping parts, applying this technique to solve real world problems. • Mathematical Practices
Materials and Resources	<ul style="list-style-type: none"> • Math Expressions, Student Journals, Manipulatives, Math themed literature, BrainPop, IXL Mathematics