

<p>Measurement and Data 3.MD</p> <p><i>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.</i></p> <ol style="list-style-type: none"> Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. <p>Measurement and Data 4.MD</p> <p><i>Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.</i></p> <ol style="list-style-type: none"> Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. 	<p>Measurement and Data 4.MD</p> <p><i>Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.</i></p> <ol style="list-style-type: none"> Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. <p>Measurement and Data 5.MD</p> <p><i>Geometric measurement: understand concepts of volume and relate volume to multiplication and addition.</i></p> <ol style="list-style-type: none"> Recognize volume as an attribute of solid figures and understand concepts of volume measurement. <ol style="list-style-type: none"> 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. 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. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. 	<p>Measurement and Data 5.MD</p> <p><i>Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</i></p> <ol style="list-style-type: none"> Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. <ol style="list-style-type: none"> 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. 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. 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.
<p>Expressions and Equations 6.EE</p> <p><i>Apply and extend previous understandings of arithmetic to algebraic expressions.</i></p> <ol style="list-style-type: none"> Write, read, and evaluate expressions in which letters stand for numbers. <ol style="list-style-type: none"> Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \frac{1}{2}$. <p>Geometry 6.G</p> <p><i>Solve real-world and mathematical problems involving area, surface area, and volume.</i></p> <ol style="list-style-type: none"> Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. 	<p>Expressions and Equations 7.EE</p> <p><i>Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.</i></p> <ol style="list-style-type: none"> Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. <p>Geometry 8.G</p> <p><i>Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.</i></p> <ol style="list-style-type: none"> Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. 	<p>Geometric Measurement and Dimension G-GMD</p> <p><i>Explain volume formulas and use them to solve problems</i></p> <ol style="list-style-type: none"> Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri’s principle, and informal limit arguments. (+) Give an informal argument using Cavalieri’s principle for the formulas for the volume of a sphere and other solid figures. 