Grade: 5th **Topic: Volume 5.MD.4 & 5.MD.5**

Key Vocabulary:

Volume- the total number of cubic units needed to fill a 3-D shape

Dimensions- the length, width, height of a figure

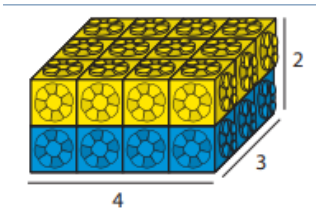
Length- how long a figure is

Width- how wide a figure is

Height- how tall a figure is

Key Ideas:

Students use their knowledge of length, width, and area (square units) of two dimensional shapes to think about volume as a measurement of the space inside a rectangular prism with three dimensions: length, width, and height. One of the first ideas students understand is that a rectangular prism can be packed with cubic units, and counting these units yields the volume. As students use cubic units to build rectangular prisms, they understand how to identify the three dimensions of length, width, and height and how to use these dimensions to describe a rectangular prism.Students learn that a faster way to count the cubic units is to envision a rectangular prism as stacked layers. For example, the figure shows two layers of 4 x 3, or (4 x 3) x 2.

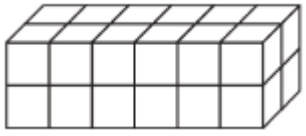


Once students can describe a prism as layers with identical l x w, they build an understanding that the volume is the same as would be found by multiplying the edge lengths. This leads to the development of the formula for finding area (length x width x height).

Students will then use this understanding to find the volume of solid figures composed of two overlapping rectangular prisms. To do so, they split the composite shape into separate rectangular prisms to find the total volume.

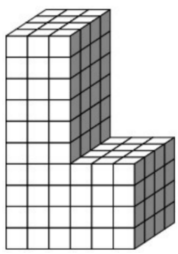
Sample Problems:

What are the dimensions of this box?



A box measures 26 cm by 8 cm by 10 cm. What is the volume of the box?

Each small cube in the model below represents one cubic unit.



What is the volume of the model?