Unit 3d-Understand Volume Concepts

Content Area: **Math**
Course(s): **Math 5**
Time Period: **Marking Period 3**
Length: **MP3 Topic 11 11-1 to 11-5**
Status: **Published**

Essential Questions

- What is the meaning of volume of a solid?
- How can the volume of a rectangular prism be found?

Big Ideas

- **Model Volume and Develop Formulas**: Students apply their understanding of volume as a measurable attribute to develop understanding of the volume formulas V=l x w x h and V=B x h.
- **Solve Problems Involving Volume:** Students use the formulas and their understanding of volume to solve problems. Some problems will involve compound shapes and using an appropriate tool.

Enduring Understandings

Measurement

5.M.B.2 [M] Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

5.M.B.2a [M] 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.M.B.2b [M] 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.M.B.3 [M] Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and non-standard units.

5.M.B.4 [M] Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.

5.M.B.4a [M] 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.

5.M.B.4b [M] Apply the formulas V = l × w × h and V = b × 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.M.B.4c [M] 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.

Mathematical Practices Focus

5. Use appropriate tools strategically.