Math Connections for Parents

Grade 5 Module 5

Addition and Multiplication with Volume and Area

Welcome to Fifth Grade Module 5! Newark City Schools is using the EngageNY curriculum, which is aligned with Ohio's New Learning Standards. In Module 5, students will work with two and three-dimensional figures to solve problems involving area and volume. They will first work with cubes to explore volume in cubic units. They will then use their knowledge of multiplication and addition to solve area and volume problems with various prisms.

Important Words and Concepts

- Base: one face of a three-dimensional solid
- Face: any flat surface of a three-dimensional figure
- Bisect: divide into two equal parts
- Cubic units: cubes of the same size used for measuring
- Height: stacking layers of the base that form a rectangular prism
- Volume of a solid: measure of space or capacity
- Attribute: quality or characteristic
- Solid Figure: three-dimensional figure
- Square units: square of the same size, used for measuring

Multiplication and Division

Students will need to have a strong base of multiplication and division facts in this module. Students will be expected to multiply and divide with two and three digit numbers, as well as with fractions and mixed numbers in order to find area and volume.

KEY STANDARDS

- Apply the skills of multiplication and division, to multiplication and division of fractions.
- Recognize and measure the volume of a figure by counting cubes, using cubic centimeters, inches and feet.
- Apply the formula Volume = length x width x height and Volume = base x height
- Find the volume of objects that are not standard prisms
- Group two-dimensional figures based on similarities (for example, all rectangles have four right angles and squares are rectangles)

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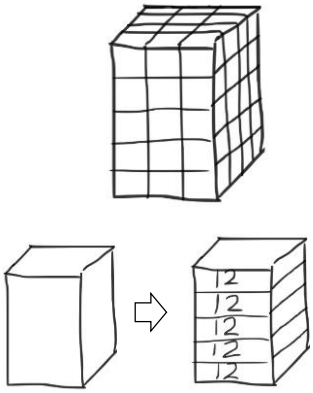
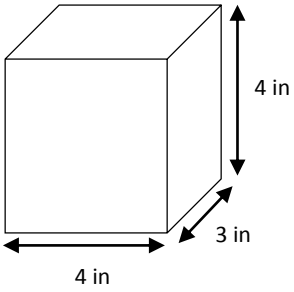
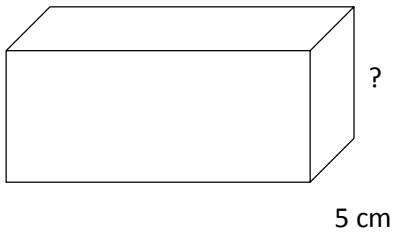
Graphics and Strategies you may see…

Students begin their study of volume by counting cubes and stacking layers of the base. They then move on to using the length measurements to find the area. In some problems, the area will be given, but a length will be missing. ***Use the formula: V = length x width x height***



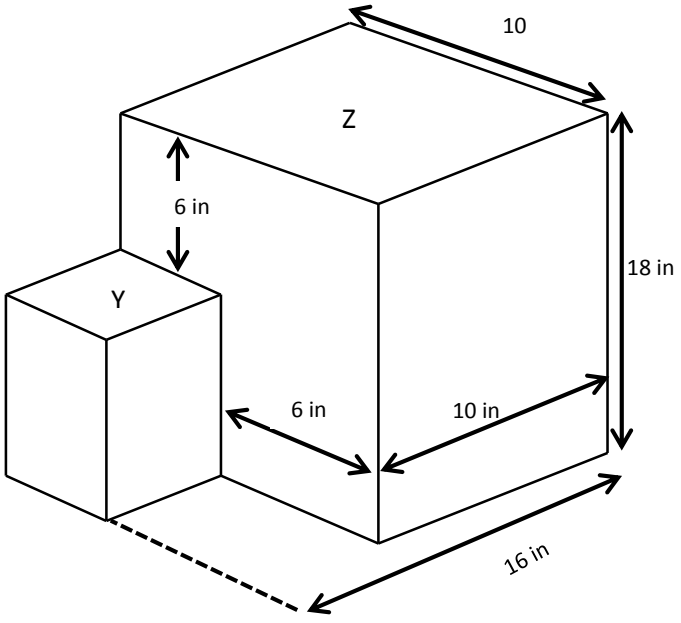




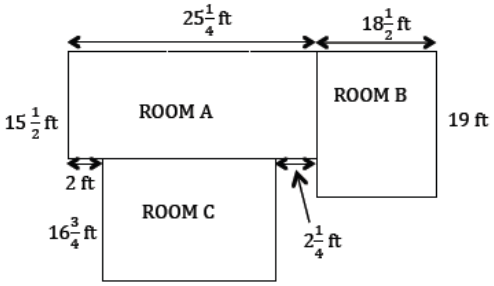
Area = 60 cm^2

12 cm^3 + 12 cm^3 + 12 cm^3 + 12 cm^3 + 12 cm^3 = 60 cubic cm

5 x 12 cubic cm = 60 cubic cm



Students use their knowledge of volume to find the volume of objects beyond standard prisms.



This problem involves carpeting in three rooms. How many square feet of carpet are needed to carpet all three rooms? Students use their knowledge of area, multiplication and fractions to solve this problem.

Students will also review properties of various two-dimensional figures, and will put the figures into groups based on various attributes.