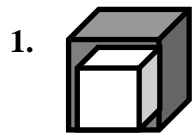## Lesson 6.5C ~ Volume with Fractional Dimensions
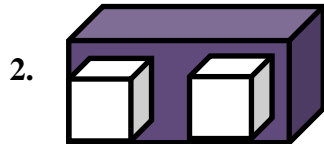
Name_____ Period_____ Date_____

1. The outer cube has a side length of $2\frac{1}{2}$ centimeters.

The cube inside it has a side length of $\frac{3}{4}$ centimeter.

    a. What is the volume of the outer cube?

    b. What is the volume of the inner cube?

    c. What is the volume of the space in the outer cube NOT taken up by the inner cube?

2. The outer prism has a length of $2\frac{1}{2}$ meters, width of $1\frac{3}{10}$ meters and height of $1\frac{1}{3}$ meters.

The cubes inside it each have side lengths of $\frac{1}{2}$ meter.

    a. What is the volume of the outer prism?

    b. What is the volume of each of the inner cubes?

    c. What is the volume of the space in the outer prism NOT taken up by the inner cubes?

3. A rectangular wood shed has a length of $5\frac{1}{2}$ yards, width of $1\frac{2}{3}$ yards and height of $2\frac{3}{10}$ yards. Inside the wood shed is a box with tools. The rest of the wood shed is completely full of wood. The box of tools measures $1\frac{3}{4}$ feet long, 1 foot wide and $\frac{2}{3}$ foot tall.

    a. Change all measurements into feet.

        Length: $5\frac{1}{2}$ yards = _____ feet

        Width: $1\frac{2}{3}$ yards = _____ feet

        Height: $2\frac{3}{10}$ yards = _____ feet

    b. What is the volume of the wood shed in cubic feet?

    c. What is the volume of the tool box in cubic feet?

    d. How many cubic feet of wood are in the wood shed?

4. A rectangular planter box is $2\frac{3}{4}$ feet long, $1\frac{1}{2}$ feet wide and $\frac{1}{2}$ foot deep. Kai fills it 4 inches deep with potting soil. What is the volume of the box that is NOT filled with potting soil?

5. A rectangular form is $3\frac{1}{2}$ meters long, $2\frac{2}{5}$ meters wide and $2\frac{1}{2}$ meters deep. Tory filled it full of cement, leaving 25 centimeters space at the top. How many cubic meters of cement did Tory use?