Let’s remember:

- The **sum of the areas** of all the surfaces, or ______________, contained in a three-dimensional figure (solid) is called the ______________.

**The formula for the Surface Area of a RECTANGULAR PRISM is:**

\[ \text{Surface Area} = 2lw + 2lh + 2wh \]

\[ l = \text{length} \quad w = \text{width} \quad h = \text{height} \]

- Volume is the measure of __________ occupied by a solid region.
- The **formula for the volume of a rectangular prism** is ______________.
1. **PACKAGING** A cereal box has a length of 8 inches, a width of $1\frac{3}{4}$ inches, and a height of $12\frac{1}{8}$ inches. What is the volume of the cereal box?

2. **FOOD STORAGE** Nara wants to determine how much ice it will take to fill her cooler. If the cooler has a length of 22 inches, a width of 12 inches, and a height of $10\frac{1}{2}$ inches, how much ice will her cooler hold?
3. **TRANSPORTATION** The cargo-carrying part of Billy's truck has a length of 8.3 meters, a width of 3 meters, and a height of 4.2 meters. What is the maximum volume of sand that Billy's truck can carry?

4. **PLUMBING** Alexia's bathroom has a tub in the shape of a rectangular prism with a length of 1.5 meters, a width of 0.5 meter, and a height of 0.4 meter. How many cubic feet of water can it hold?
5. **PACKAGING** A box of tissues has a length of 11.2 centimeters, a width of 11.2 centimeters, and a height of 13 centimeters. What is the volume of the tissue box?

6. **GEOMETRY** A *pentagonal prism* is a prism that has bases that are pentagons. Use $V = Bh$ where $B$ is the area of the base, to find the volume of the pentagonal prism below.

$$B = 26.3 \text{ cm}^2$$
1. **PACKAGING** A packaging company needs to know how much cardboard will be required to make boxes 18 inches long, 12 inches wide, and 10 inches high. How much cardboard will be needed for each box if there is no overlap in the construction?

2. **INSULATION** Jane needs to buy insulation for the inside of a truck container. The container is a rectangular prism 15 feet long, 8 feet wide, and $7\frac{1}{2}$ feet high. How much insulation should Jane buy if all inside surfaces except the floor are to be insulated?
3. **ICE** Suppose the length of each edge of a cube of ice is 4 centimeters. Find the surface area of the cube.

![Cube Diagram](image)

4. **ICE** Suppose you cut the ice cube from Exercise 3 in half horizontally into two smaller rectangular prisms. Find the surface area of one of the two smaller prisms.
5. CONTAINERS What is the total surface area of the inside and outside of a container in the shape of a rectangular prism with length of 5 meters, width of 3 meters, and height of 2.2 meters?

6. TOYS Oscar is making a play block for his baby sister by gluing fabric over the entire surface of a foam block. How much fabric will Oscar need?