

A decorative border of colorful confetti and numbers is scattered along the top and bottom edges of the slide. The confetti includes various shapes like stars, circles, and rectangles in colors such as red, blue, green, yellow, and purple. Interspersed among the confetti are small, multi-colored numbers ranging from 1 to 9.

# Visualizing the Surface Area of a Solid Figure

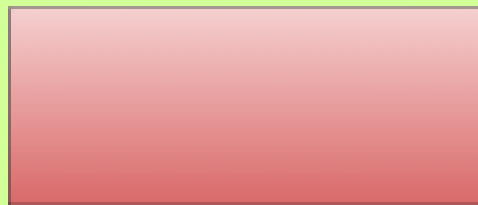
Let's start by reviewing the area of some basic plane figures.

Area of square



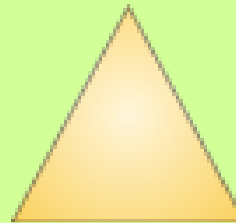
$$A = s \times s$$

Area of rectangle



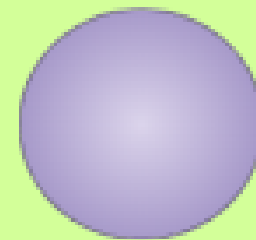
$$A = l \times w$$

Area of triangle



$$A = \frac{1}{2} bh \text{ or } \frac{bh}{2}$$

Area of circle



$$A = \pi r^2$$

**Solid figures** are shapes formed by combining different plane figures. When calculating surface area, it is crucial to identify which plane figure makes up each face of the solid.



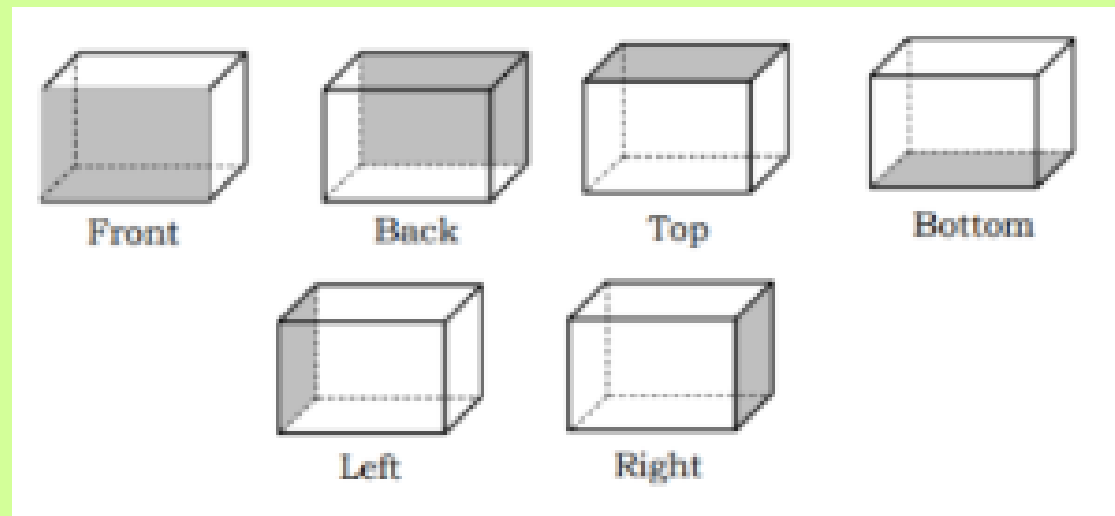
Let's take a look at this situation.

Aling Sol wanted to redesign her old wooden box. She will be using decorative sticker paper to cover and to make it look new. How will she know the exact area of sticker paper for the wooden box?

## Visualizing and Describing

To find the exact amount of sticker paper needed for the wooden box, we need to calculate the surface area of the rectangular prism. To do this, it's essential to identify the plane figures that make up each of its faces.

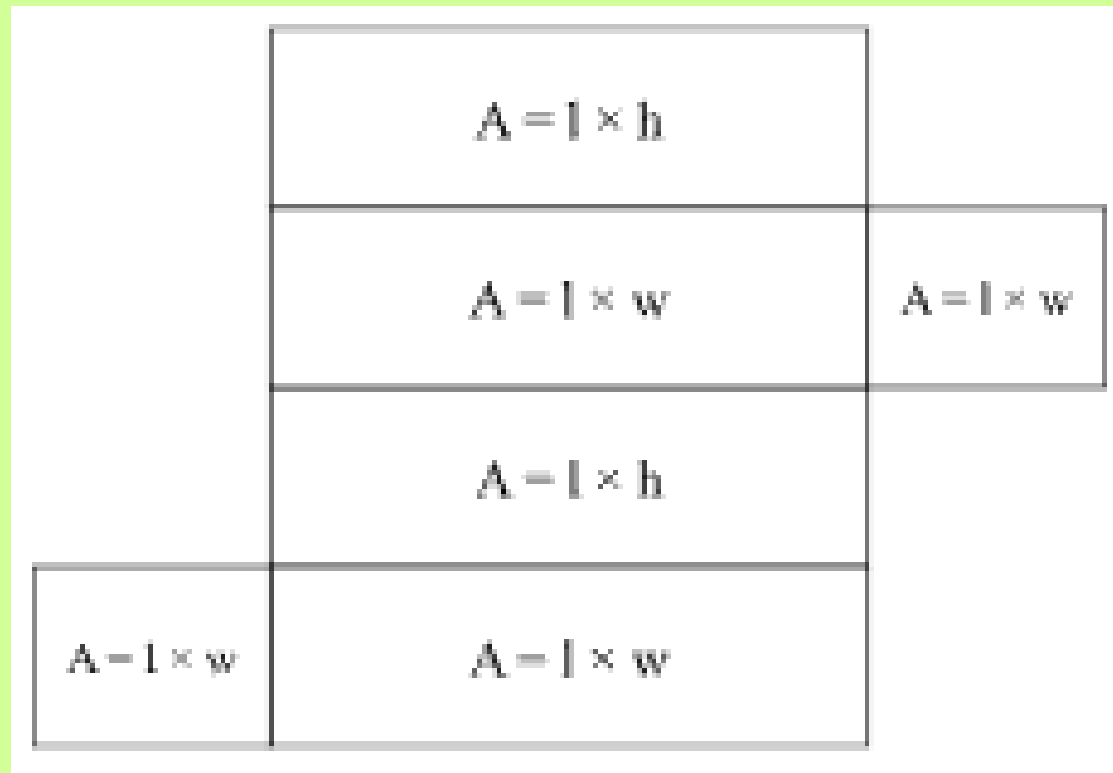
### FACES OF RECTANGULAR PRISM



The illustration displays the six faces of a rectangular prism. By calculating the area of each face, we can determine the total surface area of the prism. Another method for finding the surface area of a solid figure is by using its net.

**A net** is a two-dimensional pattern that can be folded to create the three-dimensional shape.

An illustration of the net of a rectangular prism shown by the wooden box.



To calculate the surface area, you must determine the area of its faces.

$$\text{SA} = \text{area of left side} + \text{area of right side} + \text{area of front} + \text{area of back} + \text{area of top} + \text{area of bottom}$$

Thus, the surface area of a rectangular prism is

$$SA = 2(h \times w + w \times l + l \times h) \text{ or } SA = 2(h \times w) + 2(w \times l) + 2(l \times h)$$