

Area

To find the amount of coverage, we find area. Area is measured in square units. Places around that home that requires the calculation of area might be determining the amount of carpet to cover a floor, determining the amount of the yard over which to plan a garden, or determining the amount of material needed to make a tablecloth.

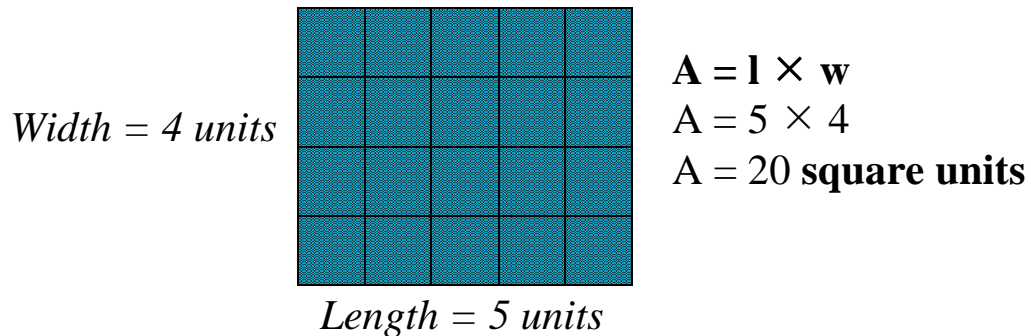
We will compare finding the area of a rectangle with finding the area of a triangle, and also look at finding the areas of a square and a parallelogram.

Area of Rectangle and Triangle

Area of Square and Parallelogram

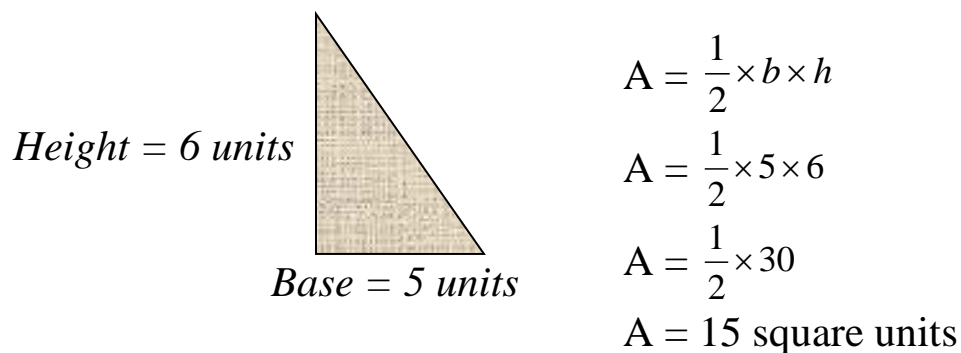
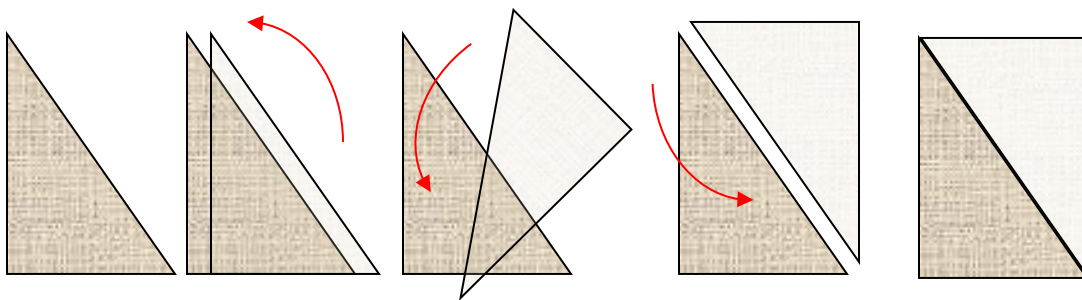
Area of Rectangle and Triangle

The **area of a rectangle** is the product of its length and width. Area is a measurement of coverage and is measured in **square units**.



Sometimes the length is called the base and the width is called the height. The formula can then be written as $A = b \times h$.

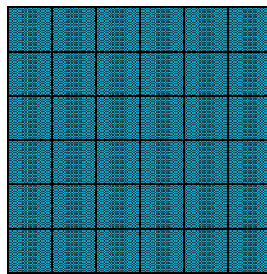
A **triangle's area** is equal to half the area of a rectangle with the same base and height.



Area of Square and Parallelogram

The **area of a square** is the product of its length and width. Since squares have sides of equal length, area of a square is the product of its length (side) and its width (side). Area is a measurement of coverage and is measured in **square units**.

Side = 6 units



$$A = l \times w$$

$$A = s \times s$$

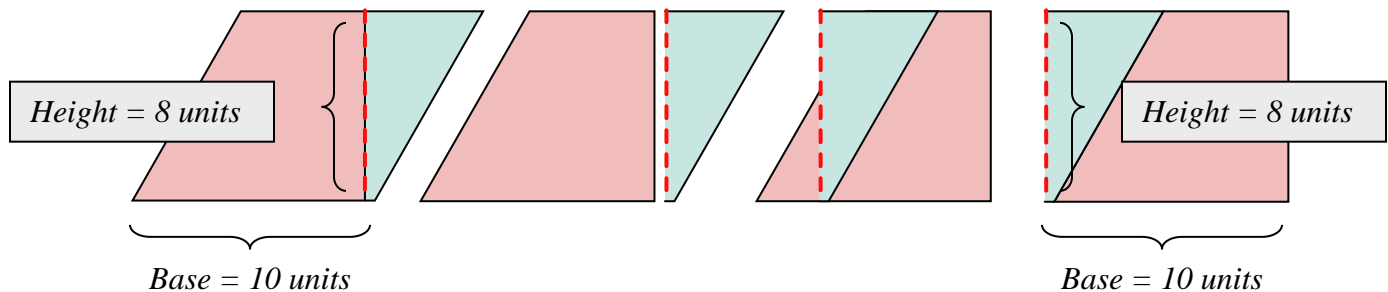
$$A = s^2$$

$$A = s^2$$

$$A = 6 \times 6 \text{ or } 6^2$$

$$A = 36 \text{ square units}$$

The **area of a parallelogram** can be rearranged into the shape of a rectangle if the parallelogram is cut along a perpendicular height from the top to its base. Thus, a formula for area can be formed from the rectangle's area formula.



The **area of a parallelogram** is the product of its base and height. The height of a parallelogram is the length of a perpendicular line from the top of the parallelogram to the base. Area is a measurement of coverage and is measured in **square units**.

$$\mathbf{A = l \times w}$$
$$\mathbf{A = b \times h}$$

$$\mathbf{A = b \times h}$$
$$\mathbf{A = 10 \times 8}$$
$$\mathbf{A = 80 \text{ square units}}$$

Note: The height of this parallelogram is shorter than the length of the side. **Be sure to measure the height of a parallelogram, not its side.**

