

Plane Geometry 5.13

Learning Goals:

- Develop definitions of square, rectangle, triangle, parallelogram, rhombus, and trapezoid
- Investigate and Describe the results of combining and subdividing plane figures

Definitions :

Examples:

A triangle is a polygon with three sides. Triangles may be classified according to the measure of their angles, i.e., right, acute, or obtuse. Triangles may also be classified according to the measure of their sides, i.e., scalene (no sides congruent), isosceles (at least two sides congruent) and equilateral (all sides congruent).

A quadrilateral is a polygon with four sides.

A parallelogram is a quadrilateral in which both pairs of opposite sides are parallel. Properties of a parallelogram include the following:
A diagonal (a segment that connects two vertices of a polygon but is not a side) divides the parallelogram into two congruent triangles.

The opposite sides of a parallelogram are congruent.

The opposite angles of a parallelogram are congruent.

The diagonals of a parallelogram bisect each other.

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Definitions :	Examples:
<p>A rectangle is a parallelogram with four right angles. Since a rectangle is a parallelogram, a rectangle has the same properties as those of a parallelogram.</p>	
<p>A square is a rectangle with four congruent sides. Since a square is a rectangle, a square has all the properties of a rectangle and of a parallelogram.</p>	
<p>A rhombus is a parallelogram with four congruent sides. Opposite angles of a rhombus are congruent. Since a rhombus is a parallelogram, the rhombus has all the properties of a parallelogram.</p>	
<p>A trapezoid is a quadrilateral with exactly one pair of parallel sides. The parallel sides are called <i>bases</i>, and the non-parallel sides are called <i>legs</i>. If the legs have the same length, then the trapezoid is an isosceles trapezoid.</p>	
<p>A kite is a quadrilateral with two distinct pairs of adjacent congruent sides.</p>	
<p>Two figures can be combined to form a new shape. Students should be able to identify the figures that have been combined.</p>	
<p>A polygon may be subdivided into two or more figures. Students should understand how to divide a polygon into familiar figures.</p>	