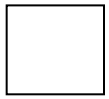
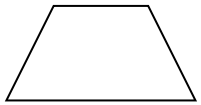
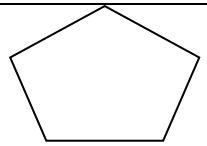
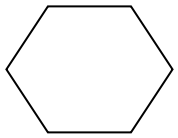
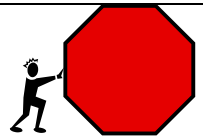
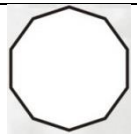
GEOMETRY

2D Shapes, Polygons and Figures

square		_____sides ___corners / vertices
rectangle		_____sides ___corners / vertices
rhombus		_____sides ___corners / vertices
trapezoid		_____sides ___corners / vertices
pentagon		_____sides ___corners / vertices
hexagon		_____sides ___corners / vertices
octagon		_____sides ___corners / vertices
decagon		_____sides ___corners / vertices

<u>Polygon</u>: 2D shapes made with <u>straight</u> sides and are closed. In Greek, poly- means <u>many</u> and -gon means <u>shape</u>, meaning many sided shape.

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Characteristics / attributes of 2D shapes (Ways to describe)

<u>quadrilateral</u>: figure with four straight sides

<u>length</u>: how long a shape is

<u>width</u>: how wide a shape is

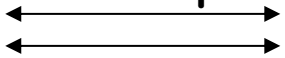
<u>sides</u>: lines that make up the 2D shape

<u>equal</u>: same size

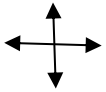
<u>congruent</u>: same size and shape

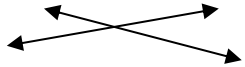
<u>opposite</u>: sides across from each other

<u>adjacent</u>: sides that meet each other

<u>parallel</u>: straight lines that never meet and are the same distance apart (like train tracks) 

<u>parallelogram</u>: quadrilateral with both pairs of opposite sides parallel and equal

<u>perpendicular</u>: straight lines that cross each other to make right angle 

<u>intersecting</u>: straight lines that cross each other at any angle 

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More shapes….. TRIANGLES!

triangle: has 3 sides, 3 vertices

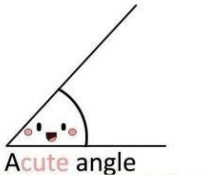
equilateral triangle: triangle with all the sides the same length (equal triangle)

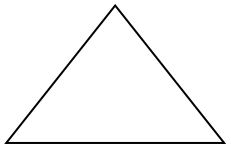
isosceles triangle: triangle with just 2 sides the same length

ANGLES….not angels…..

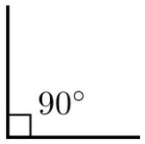
More characteristics to describe shapes:

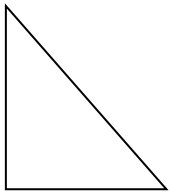
acute angle: (it's cute) **acute triangle**



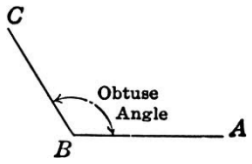


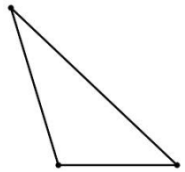
right angle: (it's just right) **right triangle**





obtuse angle: (it's a lounge chair) **obtuse triangle**

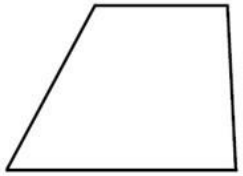


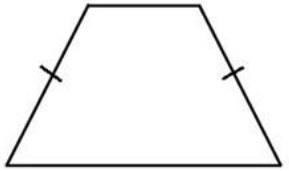


Fun Facts

So a **square** is a special kind of **rectangle**, it is one where all the sides have the same length. Thus every **square is a rectangle** because it is a quadrilateral with all four angles right angles. However not every **rectangle** is a **square**, to be a **square** its sides must have the same length.

A **trapezoid** is a quadrilateral with one pair of opposite sides parallel. It can have right angles (a right trapezoid), and it can have congruent sides (isosceles), but those are not required. The isosceles trapezoid has one set of acute angles and one set of obtuse angles.





A **quadrilateral** is a polygon. In fact it is a 4-sided polygon, just like a triangle is a 3-sided polygon, a pentagon is a 5-sided polygon, and so on.

A **rhombus** is a four-sided shape where all sides have equal length. Also opposite sides are parallel and opposite angles are equal. A rhombus is actually just a special type of parallelogram. Recall that in a parallelogram each pair of opposite sides are equal in length. With a rhombus, *all four* sides are the same length. The sides are congruent.