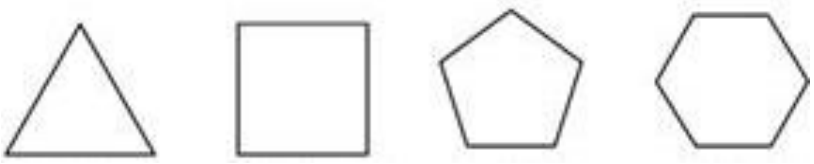
Shape Attribute Vocabulary

Geometric figures can come in all *shapes* and sizes. Mathematicians **categorize** shapes into groups based on their **attributes**. Here you will learn all about the important attributes that mathematicians use when classifying shapes.

Vocabulary	
Attributes	Any characteristic or feature that you can use to classify a figure.
Figure	Another name for shape.
Open Figure	A shape that is made with edges that do not completely connect.
Closed Figure	A shape that is made with edges that completely connect without overlap.
Edges	The bordering line segments that make up a figure. (Sides)
Vertex/Vertices	The point that two line segments connect with each other. (Corners)
Right Angles	A 90 degree angle that forms two sides of a perfect square.
Parallel Lines	A pair of line segments that never intersect.
Congruent	Figures or attributes that are the same size and shape.
Intersecting	When two lines or line segments cross at any point.
Perpendicular Lines	A pair of intersecting lines that create 1 or more right angles.
Geometric Figures	Closed shapes with no intersecting line segments.
Polygons	Flat, geometric figures that are made up of 3 or more edges.
Quadrilaterals	Polygons that are made up of exactly 4 edges and 4 vertices.



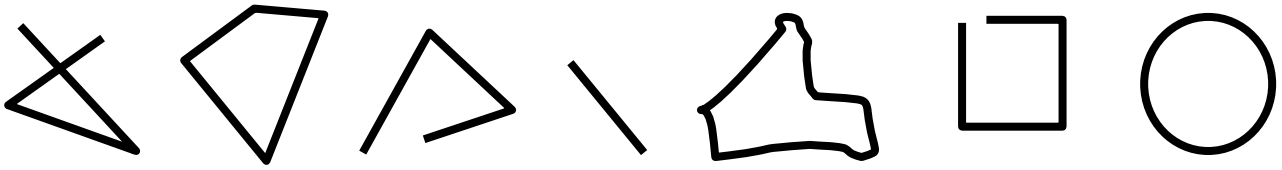
My Focus Words

Open Figures vs. Closed Figures

The first attributes we need to learn about when it comes to classifying shapes is the difference between closed and open shapes as well as line types.

Open Figures	Closed Figures
A shape that is made with edges that do not completely connect.	A shape that is made with edges that completely connect with no overlap.

Determine which of the following are closed figures by circling them.



Is the letter Q a closed figure? _____

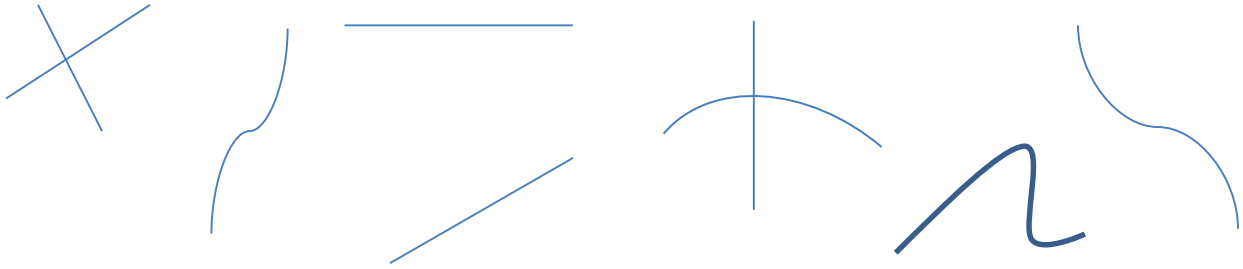
Why?_____

_____

Line Types

Straight Lines	Curved Lines	Intersecting Lines
A line that connects two points that travels in a constant direction without curving.	A line that connects two points that changes directions before reaching the endpoint.	When two lines or line segments cross at any point.

Label the provided lines (S for straight – C for Curved – I for Intersecting.)



Polygons are closed figures that are made up of 3 or more straight lines. Give three examples of polygons below.

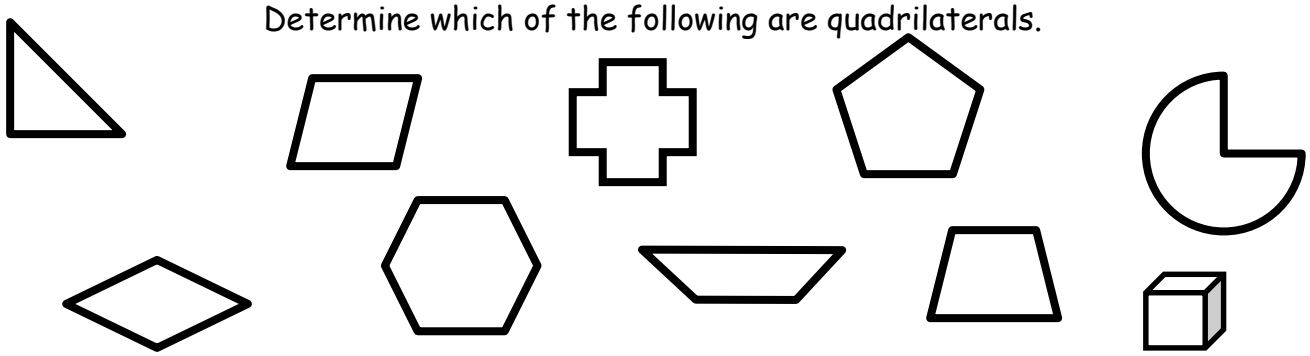
Figures and Lines

Open Figures	Closed Figures
Straight Lines	Curved Lines
Intersecting Lines	Extra Notes

Polygons Vs. Geometric Figures

Polygons	Quadrilaterals
A flat, closed figure with three or more sides.	A special polygon with exactly 4 edges and 4 vertices.

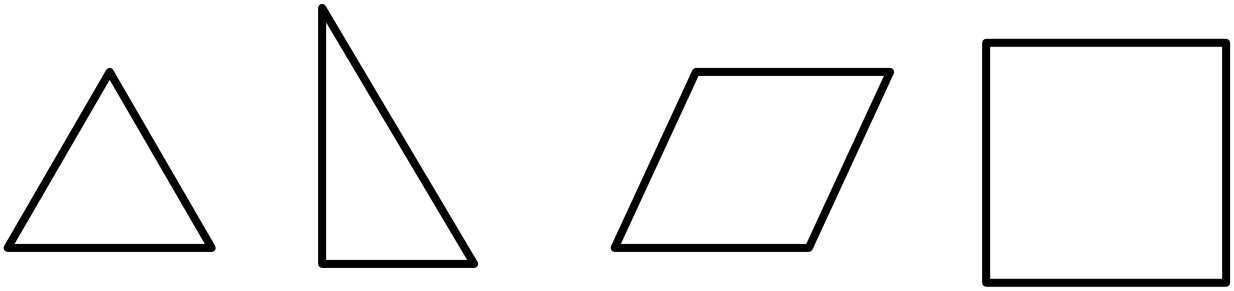
Determine which of the following are quadrilaterals.



Special Line Classifications

Parallel Lines	Perpendicular Lines	Congruent Lines
A pair of line segments that never intersect.	A pair of intersecting lines that create 1 or more right angles.	Lines that are the same size and shape.
		

Look at the following figures. Label them according to their line types.



Line Types

Line Types

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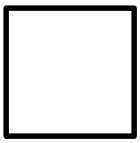
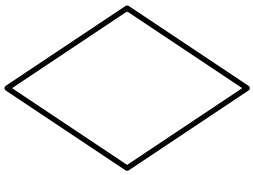
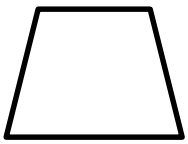
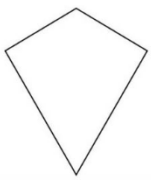
Line Types

Polygons and Special Lines

Polygons	Quadrilaterals
Parallel Lines	Perpendicular Lines
Congruent Lines	Extra Notes

Classifying Quadrilaterals

The following shapes are all quadrilaterals and therefore have the these attributes.
4 edges
4 vertices
4 angles

Type	Attributes	Examples
Parallelogram	Two opposite pairs of parallel lines.	
Rectangle	Same as parallelogram. Four right angles. Opposite edges are congruent.	
Square	Same as parallelogram. Four right angles. All edges congruent.	
Rhombus	Same as parallelogram. All edges are congruent. Opposite angles are congruent.	
Trapezoid	One pair of parallel lines.	
Kite	Two pairs of congruent sides. One pair of opposite congruent angles.	

Types of Quadrilaterals

P – Parallelograms	R – Rectangles
S - Squares	T - Trapezoids
K - Kites	R - Rhombus