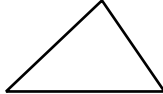


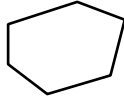


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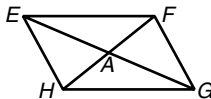
Dear Family,

In this chapter, your child will be learning about polygons. Your child will study the different types of polygons, including quadrilaterals and parallelograms, and explore their properties and attributes.

Your child will learn to classify polygons on the basis of their sides and angles. The following table summarizes some of the different polygons your child will encounter.

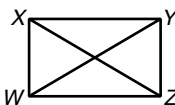
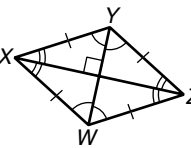
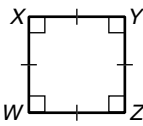
Polygon	# of sides	Sum of interior angles	Example
Triangle	3	180°	
Quadrilateral	4	360°	
Pentagon	5	540°	
Hexagon	6	720°	

Your child will learn the properties of different types of quadrilaterals. A quadrilateral with two pairs of parallel sides is called a **parallelogram**. The following figure illustrates some of the important properties of parallelograms.



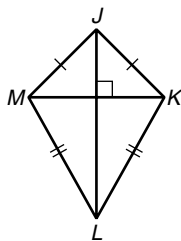
1. The opposite sides of a parallelogram are congruent. So in this figure, $\overline{EF} \cong \overline{HG}$ and $\overline{EH} \cong \overline{FG}$.
2. The opposite angles of a parallelogram are congruent. This means that $\angle EFG \cong \angle GHE$ and $\angle HEF \cong \angle FGH$.
3. The consecutive angles of a parallelogram are supplementary. In this figure,
 $m\angle EFG + m\angle FGH = 180^\circ$
 $m\angle FGH + m\angle GHE = 180^\circ$
 $m\angle GHE + m\angle HEF = 180^\circ$
 $m\angle HEF + m\angle EFG = 180^\circ$
4. The diagonals of a parallelogram bisect each other. In this figure, this means that $\overline{EA} \cong \overline{GA}$ and $\overline{HA} \cong \overline{FA}$.

Your child will continue to study quadrilaterals as he or she learns about three other special types of parallelograms. These are the **rectangle**, **rhombus**, and **square**. Their properties are summarized in this table.

Quadrilateral	Example	Properties
Rectangle		A parallelogram with four right angles. The diagonals are congruent and opposite sides are congruent.
Rhombus		A parallelogram with four congruent sides. The diagonals are perpendicular, and each diagonal bisects a pair of opposite angles.
Square		A parallelogram with four right angles and four congruent sides. All properties that are true for a rectangle and a rhombus are also true for a square.

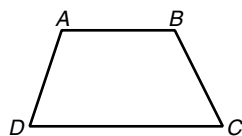
The last two quadrilaterals that your child will study are **kites** and **trapezoids**.

A kite is a quadrilateral with exactly two pairs of congruent consecutive sides.



In this kite, $\overline{MJ} \cong \overline{JK}$, $\overline{KL} \cong \overline{ML}$, $\overline{MK} \perp \overline{JL}$, and $\angle JML \cong \angle JKL$.

A trapezoid is a quadrilateral with exactly one pair of parallel sides.



In this trapezoid, $\overline{AB} \parallel \overline{DC}$.

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