Topics: Identifying and describing similarities and differences in shapes (triangles & quadrilaterals) based on angle measures, side lengths, and the presence (absence) of parallel and perpendicular lines.
Standards: G.3; G.4

Monday, April 20

- Review basic geometry vocabulary. Complete the vocabulary sort in which you match the word, picture, and definition. Use an online math glossary if you need help identifying the words.
- Watch the BrainPop video on polygons. https://www.brainpop.com/math/geometryandmeasurement/polygons/
- Remember in order to be a polygon, a shape must have straight sides, without any curves. The sides must all be connected with no open gaps. The sides of the shape cannot cross over each other multiple times.
- Watch the BrainPop video on polygons: https://www.youtube.com/watch?v=IaoZhhx_I9s
- Complete the quick check on polygons on Google Classroom.

Tuesday, April 21

- Yesterday you learned the basics about polygons. Today we are going to focus on angles.
- Watch the Math Antics video on Angle Basics: https://www.youtube.com/watch?v=DGKwdHMiqCg
- Complete the angles sort. Cut out each of the angles and sort into the correct category.
- Watch the Math Antics video on Angles & Degrees: https://www.youtube.com/watch?v=_n3KZR1DSEo
- Complete the quick check on angles on Google Classroom.

Wednesday, April 22

- Yesterday you learned the basics about polygons. Today we are going to focus on one type of polygon which has 3 sides. This is called a trigon or triangle. The prefix tri- means 3. Triangles are polygons with 3 sides.
- We can categorize triangles based on the measurements of their sides. Triangles can be equilateral, isosceles, or scalene. Triangles can also be classified by their angle measures. Triangles can be called acute, obtuse, or right triangles.
- Watch the Math Antics video on classifying triangles: https://www.youtube.com/watch?v=mLeNaZcy-hE
- Complete the triangles sort. Cut out each of the cards and place into the correct category based on angle measure.

Thursday, April 23

- Create a display about classifying triangles. Explain how you classify triangles based on angle measure and side length. Using the triangle printouts, place triangles in the appropriate categories. Remember some triangles may fit in more than one category. This display can be electronic (created in Google Doc or Google Slides) or on pencil and paper and an image emailed to Mrs. Scheel at tiffany.scheel@southern.k12.oh.us.

Friday, April 24

- When we classify shapes with more than 3 sides, we can also sort them based on whether or not they have parallel or perpendicular lines.
- Watch the video on parallel and perpendicular lines: https://www.youtube.com/watch?v=P3AOoLbA3us
- Complete the sort on parallel and perpendicular lines.
- The other shapes that focus on are quadrilaterals. Quadrilaterals are any four-sided shape. Complete the quadrilateral sort.

Monday, April 27

- When we sort quadrilaterals, we must think about their sides, angles, and whether or not there are parallel or perpendicular lines. For instance, in a square, there are 4 equal-length sides, 4 right angles, and the opposite sides are parallel. Since there are right angles, there are also perpendicular lines.
- Rectangles are also common quadrilaterals, think about their sides, angles, and parallel and perpendicular lines.

Shape	**Side lengths**	**Angles**	**Parallel Sides**	**Perpendicular Sides**
Rectangle	The opposite sides are the same length.	There are 4 right angles.	The opposite sides are parallel.	Yes there are perpendicular sides.
Square	All sides are the same length.	There are 4 right angles.	The opposite sides are parallel.	Yes there are perpendicular sides.

- Look at the chart carefully. What things are similar? What things are different? So is a square a rectangle?
- Watch the video on “Is a Square a Rectangle?”: https://www.youtube.com/watch?v=TnKYox8wr8g
- On Google Classroom, post a statement to answer the question: Is a square a rectangle?

Tuesday, April 28

- Today, we are going to expand our understanding of quadrilaterals further. Other types of quadrilaterals are rhombuses and parallelograms. If we add these into our definitions chart, we would see that there are some similarities and differences to rectangles and squares.

Shape	**Side lengths**	**Angles**	**Parallel Sides**	**Perpendicular Sides**
Parallelogram	The opposite sides are the same length	There are 4 angles, but they do not have to be right angles.	The opposite sides are parallel.	There do not have to be perpendicular lines.
Rhombus	All sides are the same length.	There are 4 angles, but they do not have to be right angles.	The opposite sides are parallel.	There do not have to be perpendicular lines.

Rectangle	The opposite sides are the same length.	There are 4 right angles.	The opposite sides are parallel.	Yes there are perpendicular sides.
Square	All sides are the same length.	There are 4 right angles.	The opposite sides are parallel.	Yes there are perpendicular sides.

- Parallelograms have opposite sides that are parallel. This means that both squares and rectangles meet the definition for parallelograms. However, parallelograms can also be slanted and still have opposite sides that are parallel.
- Watch the video on the characteristics of parallelograms: https://www.youtube.com/watch?v=Ma2XEYYkgo8
- Complete the parallelogram sort.

Wednesday, April 29

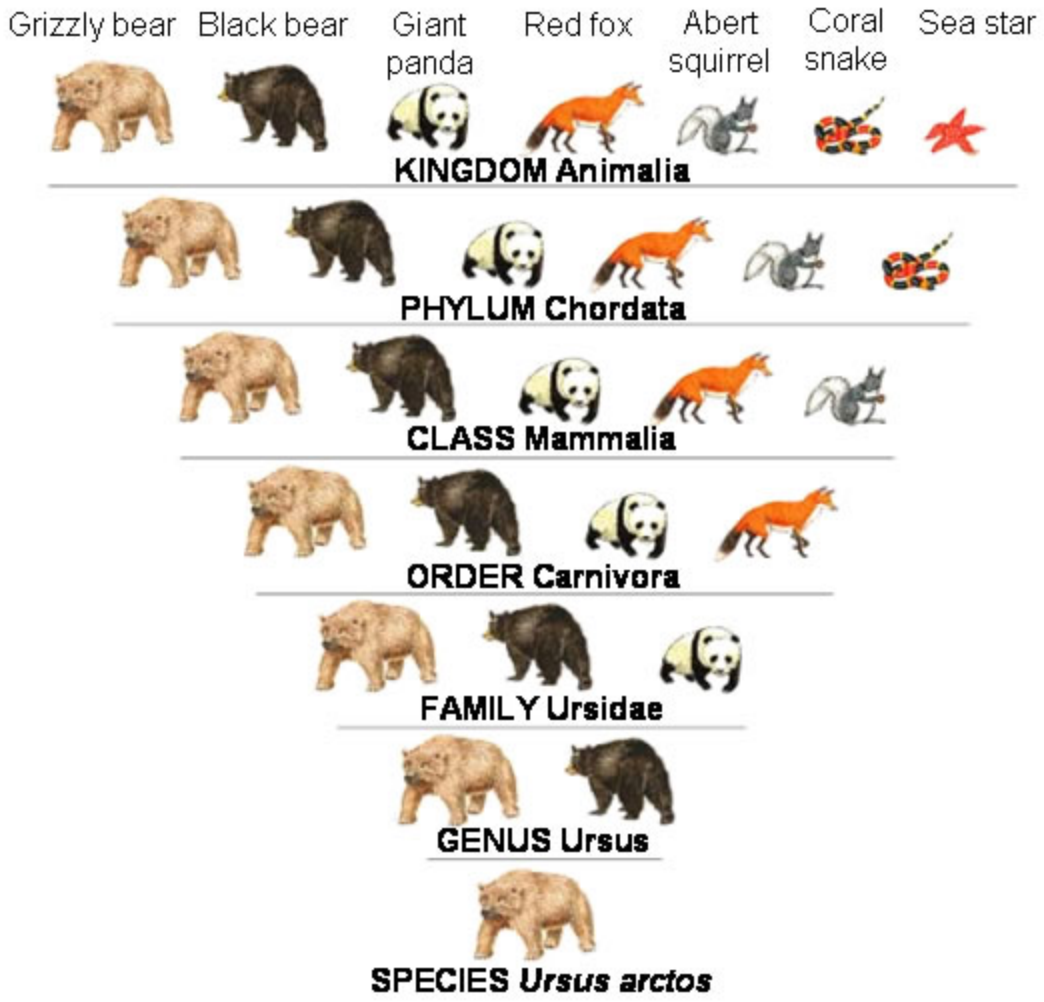
- Today, we are going to expand our understanding of quadrilaterals further. Another type of quadrilateral is a trapezoid. If we add this into our definitions chart, we would see that there are some similarities and differences to the other quadrilaterals.

Shape	**Side lengths**	**Angles**	**Parallel Sides**	**Perpendicular Sides**
Trapezoid	The parallel sides will be different lengths.	There can be 2 right angles, 1 acute angle, and 1 obtuse angle OR 2 obtuse angles and 2 acute angles.	Only 2 sides are parallel.	There is a possibility of having perpendicular sides IF there is a right angle present.
Parallelogram	The opposite sides are the same length	There are 4 angles, but they do not have to be right angles.	The opposite sides are parallel.	There do not have to be perpendicular lines.
Rhombus	All sides are the same length.	There are 4 angles, but they do not have to be right angles.	The opposite sides are parallel.	There do not have to be perpendicular lines.
Rectangle	The opposite sides are the same length.	There are 4 right angles.	The opposite sides are parallel.	Yes there are perpendicular sides.
Square	All sides are the same length.	There are 4 right angles.	The opposite sides are parallel.	Yes there are perpendicular sides.

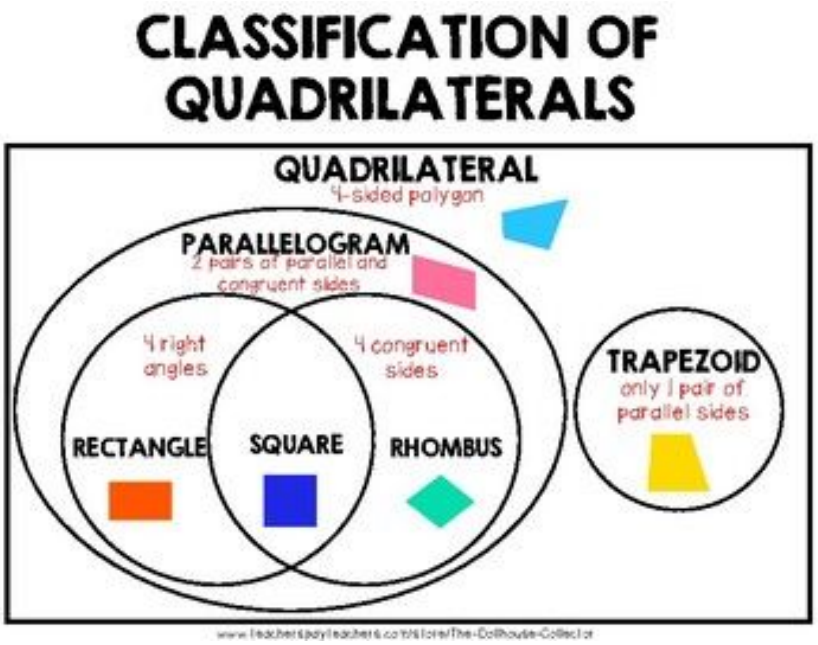
- Watch the Math Antics video on Quadrilaterals: https://www.youtube.com/watch?v=yiREqzDsMP8
- Sort the math statements into true or false based on the information provided in the video and in the chart above.

Thursday, April 30

- Oftentimes, quadrilaterals are placed into a hierarchy. This is like when you classify animals. Each time you go down the chart, the animal becomes more and more specific. At the top of this chart, there are a lot of different types of animals. Then as you move down the chart, the characteristics get more and more similar until you have only a grizzly bear at the bottom. Discuss with a family member how the animals get more and more similar as the chart gets narrower.



- A geometry hierarchy is very similar. It can be shown in a chart or in a Venn-diagram. Below is a Venn-diagram of quadrilaterals. All quadrilaterals can fit inside of the box because all quadrilaterals have exactly 4 sides. However, there are 3 main distinctions: Does the quadrilateral have 2 sets of parallel sides, 1 set of parallel sides, or no sets of parallel sides. If there are no sets of parallel sides, the shape only fits in the outline of the box. If there is 1 set of parallel sides, the shape fits in the trapezoid circle ONLY. If the shape has 2 sets of parallel sides, it is called a parallelogram. Parallelograms though can also be defined as more specific quadrilaterals. If there are 4 right angles, a parallelogram is also a rectangle and fits in that part of the circle. If a parallelogram has 4 equal sides, it is also a rhombus and fits into that part of the circle. If a parallelogram has both 4 right angles and 4 equal sides, then the shape is the most special type of quadrilateral called a square, like the grizzly bear in the animal example.



- Complete the hierarchy charts to show how different types of quadrilaterals are related to one another.

Friday, May 1

- Complete the geometry trifold to review classifying triangles and quadrilaterals.
- Then, complete the classifying shapes quiz on Google Classroom.