Dear Parents,
We will begin our next unit of study in math soon. The information below will serve as an overview of the unit as you work to support your child at home. If you have any questions, please feel free to contact me. I appreciate your ongoing support.

Sincerely,
Your Child's Teacher

Unit Name: Reasoning with Shapes

North Carolina Content State Standards:

NC.2.G.1 Recognize and draw triangles, quadrilaterals, pentagons, and hexagons, having specified attributes; recognize and describe attributes of rectangular prisms and cubes.

NC.2.G.3 Partition circles and rectangles into two, three, or four equal shares.
- Describe the shares using the words halves, thirds, half of, a third of, fourths, fourth of, quarter of.
- Describe the whole as two halves, three thirds, four fourths.
- Explain that equal shares of identical wholes need not have the same shape.

Math Language:

- Partition
- Equal Shares
- Fair Shares
- Half
- Third
- Fourth
- Quarter
- Equipartition
- Half of
- Third of
- Fourth of
- Side
- Angle
- Quadrilateral
- Triangle
- Pentagon
- Hexagon
- Attribute
- Defining Attribute
- Non-Defining Attribute
- Closed Figure
- Cube
- Three-Dimensional
- Rectangular Prism
- Edge
- Face
- Vertex

Unit Overview:

In this unit which focuses on geometry, students should recognize, draw, and describe attributes of triangles, quadrilaterals, pentagons, and hexagons and recognize and describe attributes of rectangular prisms and cubes. Additionally, students focus on equipartitioning and develop an understanding of identifying whether or not a shape has been partitioned into equal shares and how to partition shapes into equal shares themselves. Throughout the unit, a focus should be placed on essential mathematics vocabulary including triangle, quadrilateral, pentagon, hexagon, rectangular prism, cube, side, vertex, face, edge, partition, half, third, fourth, and quarter.

This unit gives students ways to analyze our physical world. Students describe and analyze two-dimensional shapes by examining their sides and angles. They recognize and analyze three-dimensional shapes by examining their faces, edges, and vertexes. Additionally, students will partition circles and rectangles into 2, 3 or 4 equal shares (regions). They will be given ample experiences to explore this concept with paper strips and pictorial representations. Students should also work with the vocabulary terms halves, thirds, fourths, half of, third of, fourth of, and quarter of. While students are working on this standard, they should make the connection that a "whole" is composed of two halves, three thirds, or four fourths. This unit also addresses the idea that equal shares of identical wholes may not have the same shape.

Skills/Strategies:

- Recognize and draw both regular and irregular triangles, quadrilaterals, pentagons, and hexagons
- Recognize and describe attributes of rectangular prisms and cubes
- Partition circles and rectangles into two, three, or four equal shares

- Describe shares as halves, thirds, half of, a third of, fourths, a fourth of, and a quarter of
- Describe a whole as two halves, three thirds, or four fourths

Strategies that students will learn:

Second Grade students identify (recognize and name) shapes and draw shapes based on a given set of attributes. These include triangles, quadrilaterals (squares, rectangles, and trapezoids), pentagons, and hexagons. They recognize and describe attributes of cubes and rectangular prisms. Practicing the vocabulary with your child will be important.

It is important for students to understand that fractional parts may not be symmetrical. The only criterion for equivalent fractions is that the area is equal. It is important for students to see circles and rectangles partitioned in multiple ways so they learn to recognize that equal shares can be different shapes within the same whole.

During our geometry unit students will build and draw different shapes. One tool we will use is a geoboard, in which a rubber band is stretched around pegs to create shapes with specific attributes. Here are examples of quadrilaterals on geoboards:
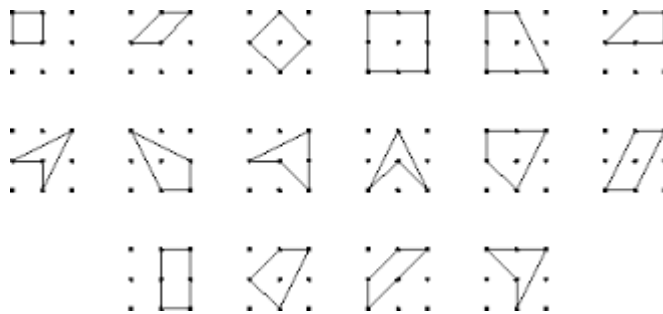
Here are examples of equally dividing (partitioning) three same sized rectangles into halves in three different ways.

Please Note: North Carolina has adopted the following definition of a trapezoid: A trapezoid is a quadrilateral with exactly one pair of parallel sides.

Video Support:
- No videos are referenced for this unit.

Additional Resources:
- NCDPI Additional Resources

Questions to Ask When Helping Your Child with Math Homework

Keep in mind that homework in elementary schools is designed as practice. If your child is having problems, please let the classroom teacher know. When helping your child with his/her math homework, you don't have to know all the answers! Instead, we encourage you to ask probing questions so your child can work through the challenges independently. Some examples may include the following:

What is the problem you're working on?

What do the directions say?

What do you already know that can help you solve the problem?

What have you done so far and where are you stuck?

Where can we find help in your notes?

Are there manipulatives, pictures, or models that would help?

Can you explain what you did in class today?

Did your teacher work examples that you could use?

Can you go onto another problem & come back to this one later?

Can you mark this problem so you can ask the teacher for an explanation tomorrow?