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 on-going support.
Sincerely,
Your Child's Teacher

Unit Name:
Relationship between Circles and Angles

Common Core State Standards:

4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. b. An angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.

Essential Vocabulary:

- lines
- angle
- point
- line segment
- ray
- vertex/vertices
- measure
- point

- end point
- geometric shapes
- ray
- angle
- circle
- fraction
- intersect
- one-degree angle

- protractor
- decompose
- addition
- subtraction
- unknown
- complementary angles

Unit Overview:

In this unit, students will be exposed to measuring angles for the first time. Angle measure is a "turning point" in the study of geometry. Students often find angles and angle measure to be difficult concepts to learn, but that learning allows them to engage in interesting and important mathematics. Students will learn that a circle is made up of 360 one-degree angles. Students will need to reason with complementary angles. They will need to utilize this information in order to break angles into smaller angles. For example a 40 degree angle = 40 one-degree angles = 25 degree angle + 15 degree angle, etc. In addition, students will learn how to use a protractor as a tool within this unit.

Strategies/Skills:

Students will build on their understanding of geometric shapes and go further with identifying and measuring angles. Students will model mastery of this concept through the following ways:
- building
- drawing
- identifying
- analyzing

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 on-going support.

Sincerely,

Your Child's Teacher

Video Support:

Video support can be found on LearnZillion.

- https://learnzillion.com/
  - Measure full and half rotations
    https://learnzillion.com/lessons/2633-measure-full-and-half-rotations
  - Measure quarter and three quarter rotations
    https://learnzillion.com/lessons/2635-measure-quarter-and-threequarter-rotations
  - Understand and measure one-degree angles
    https://learnzillion.com/lessons/2586-understand-and-measure-onedegree-angles
  - Estimate the measure of an angle using benchmark and one-degree angles
    https://learnzillion.com/lessons/2766-estimate-the-measure-of-an-angle-using-benchmark-and-onedegree-angles
  - Solve real world problems involving angle measurement
    https://learnzillion.com/lessons/2616-solve-real-world-problems-involving-angle-measurement

Additional Resources:

If you have limited/no internet access, please contact your child's teacher for hard copies of the resources listed in this document.

- NCDPI Unpacking Document: 4th Grade Unpacking Document