Unit 4
Angle Measure and Plane Figures

Grade 4
Math

Description:

In unit 4, students learn angles are composed of two rays. They learn to measure angles in degrees using a circular protractor and to sketch angles of a certain measure. Students learn three types of angles, right, acute and obtuse. They understand the sum of angle measurements around a point is 360 degrees and the sum of angle measurements on a line is 180 degrees. They use this knowledge to find unknown angles. Students will solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems.

Students build, draw and analyze two dimensional shapes in geometry. They draw and identify points, lines, line segments, rays, angles, and perpendicular and parallel lines. They use their knowledge of perpendicular and parallel lines and angle type to classify two-dimensional figures. Students identify line-symmetric figures and draw lines of symmetry.

Louisiana Student Standards for Mathematics (LSSM)

Measurement and Data	
Geometric measurement: understand concepts of angle and measure angles.	
4.MD.5	Recognize angles as geometric shapes that are formed whenever 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. b. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. c. An angle that turns through _n_ one-degree angles is said to have an angle measure of _n_ degrees.
4.MD.6	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
4.MD.7	Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a letter for the unknown angle measure.
Related area to operations of multiplication and addition	

4.MD.8	Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems.
Geometry	
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	
4.G.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
4.G.2	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
4.G.3	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

Enduring Understandings:

- Geometric figures can be classified based on their properties.
- Perpendicular, parallel sides, particular angle measures, and symmetry can be used to classify geometric figures.
- Two-dimensional figures may have lines of symmetry.

Essential Questions:

- How do we use geometry to help us make sense of the world?
- What is unique about each geometric shape?
- How do we talk about and classify different shapes?
- What properties do geometric objects have in common?
- How do I measure geometric shapes?