Unit 3: Geometry

Content Area: **Mathematics**
Course(s): **Mathematics 4**
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Status: **Published**

Enduring Understandings

Objects can be described and compared using their geometric attributes.

Developing an understanding of how to determine angle and linear measurements of a triangle has real life connections in construction.

Essential Questions

How are geometric properties used to solve problems in everyday life?

What is the same and different when finding area and perimeter?

How does area & perimeter relate to other disciplines?

Without a thorough understanding of area & perimeter, what couldn't we do?

What is a real-world insight about area & perimeter?
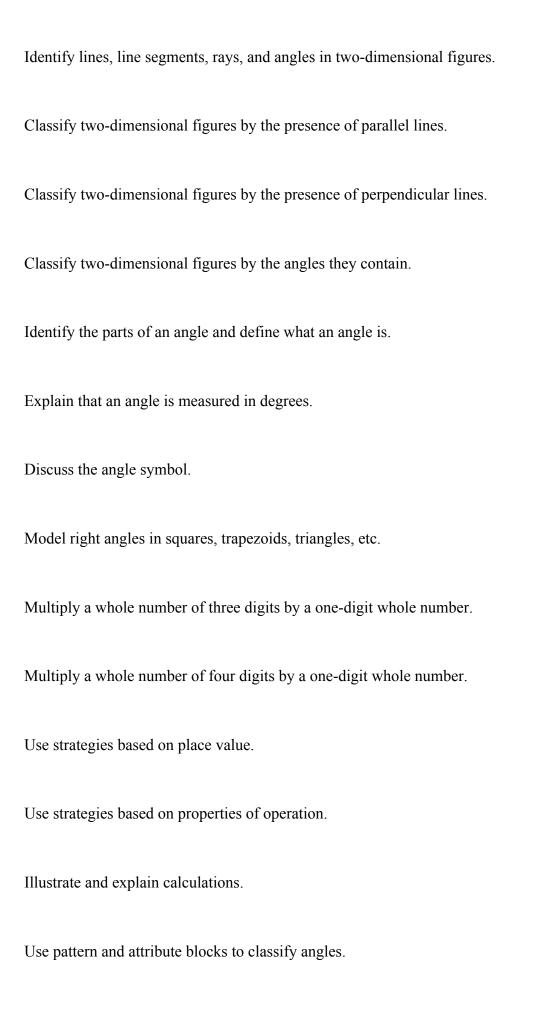
Content

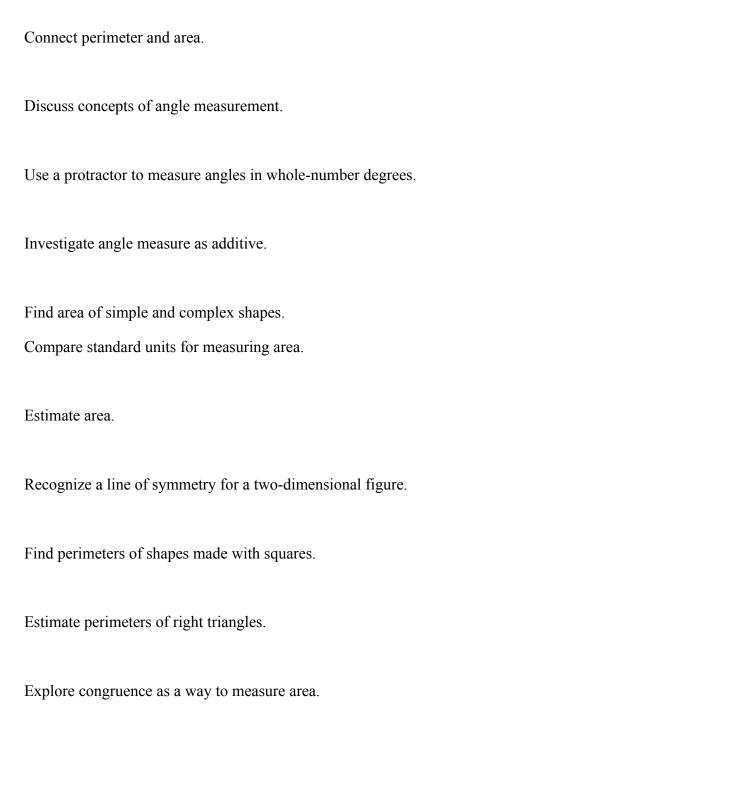Vocabulary

Parallel lines

Perpendicular lines

Acute angles

Right angles

Obtuse angle

Scalene Triangle

Estimate

Area

Length

Width

Square units

http://www.mathplayground.com/common_core_state_standards_for_mathematics_grade_4.html
k5learning.com
parcc.pearson.com
Tenmarks.com
http://www.insidemathematics.org/common-core-resources/mathematical-content-standards/standards-by-grade/4th-grade
http://www.mathgoodies.com/standards/alignments/grade4.html
https://learnzillion.com/resources/17036-math-lesson-plans-4th-grade

Skills

Describe and draw geometric figures.

Investigate possible angles in triangles.

Explore lines of symmetry.

Sort parallelograms according to properties.

Use appropriate angle vocabulary.

Draw perpendicular and parallel lines.

Identify lines, line segments, rays, and angles in two-dimensional figures.

Classify two-dimensional figures by the presence of parallel lines.

Classify two-dimensional figures by the presence of perpendicular lines.

Classify two-dimensional figures by the angles they contain.

Identify the parts of an angle and define what an angle is.

Explain that an angle is measured in degrees.

Discuss the angle symbol.

Model right angles in squares, trapezoids, triangles, etc.

Multiply a whole number of three digits by a one-digit whole number.

Multiply a whole number of four digits by a one-digit whole number.

Use strategies based on place value.

Use strategies based on properties of operation.

Illustrate and explain calculations.

Use pattern and attribute blocks to classify angles.

Connect perimeter and area.

Discuss concepts of angle measurement.

Use a protractor to measure angles in whole-number degrees.

Investigate angle measure as additive.

Find area of simple and complex shapes.

Compare standard units for measuring area.

Estimate area.

Recognize a line of symmetry for a two-dimensional figure.

Find perimeters of shapes made with squares.

Estimate perimeters of right triangles.

Explore congruence as a way to measure area.

Standards

CCSS.Math.Content.4.G.A	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.
CCSS.Math.Content.4.G.A.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
CCSS.Math.Content.4.G.A.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.
CCSS.Math.Content.4.G.A.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.
CCSS.Math.Content.4.MD.A	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
CCSS.Math.Content.4.MD.A.3	Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
CCSS.Math.Content.4.MD.C	Geometric measurement: understand concepts of angle and measure angles.
CCSS.Math.Content.4.MD.C.5	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:
CCSS.Math.Content.4.MD.C.5.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.
CCSS.Math.Content.4.MD.C.5.b	An angle that turns through n one-degree angles is said to have an angle measure of n degrees.
CCSS.Math.Content.4.MD.C.6	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
CCSS.Math.Content.4.MD.C.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 symbol for the unknown angle measure.
CCSS.Math.Content.4.NBT.A	Generalize place value understanding for multi-digit whole numbers.
CCSS.Math.Content.4.NBT.A.3	Use place value understanding to round multi-digit whole numbers to any place.
CCSS.Math.Content.4.NBT.B	Use place value understanding and properties of operations to perform multi-digit arithmetic.
CCSS.Math.Content.4.NBT.B.5	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
CCSS.Math.Practice.MP1	Make sense of problems and persevere in solving them.
CCSS.Math.Practice.MP2	Reason abstractly and quantitatively.
CCSS.Math.Practice.MP3	Construct viable arguments and critique the reasoning of others.
CCSS.Math.Practice.MP4	Model with mathematics.
CCSS.Math.Practice.MP5	Use appropriate tools strategically.
CCSS.Math.Practice.MP7	Look for and make use of structure.
CCSS.Math.Practice.MP8	Look for and express regularity in repeated reasoning.