

**UNIT PLANNING TOOL**

**Planning Focus: Geometry**

**Module(s)/Unit(s) Unit 5: Geometry & Measurement**

**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.

**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.

**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.

**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:

**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  $\frac{1}{360}$  of a circle is called a "one-degree angle," and can be used to measure angles.

**4.MD.C.5.B:** An angle that turns through  $n$  one-degree angles is said to have an angle measure of  $n$  degrees.

**4.MD.C.6:** Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

**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.

**Mathematical Practices being emphasized:** MP 2: Reason abstractly and quantitatively; MP 5: Use appropriate tools strategically; MP 7: Look for and make use of structure

**Essential Questions**

How are geometric objects different from one another?

How do we distinguish between parallel and perpendicular lines?

How can shapes be classified by their angles and lines?

How can shapes be classified by the measure of their angles?

How do you determine lines of symmetry? What do they tell us?

**Key Concepts**

Draw/Label points, lines, rays, & angles

Identify and measure angles

Add and subtract with angles

Classify two-dimensional figures by sides and angles

Lines of symmetry

**Visual Models/ Algorithms/ Diagrams for  
Compendium**

See attached Compendium

**Pre and Post Assessments**

**Connections (Real World Applications)**

Architects  
Civil Engineers  
Pilots  
Navigators  
Construction Workers  
Interior designers

**Language Functions/Structures**

*Functions: Explain, Describe, Justify, Compare*

A \_\_\_\_\_ is a figure that has \_\_\_\_\_.

An angle is made up of \_\_\_\_\_.

The properties of an obtuse angle are \_\_\_\_\_.

I classified \_\_\_\_\_ into the category of \_\_\_\_\_ because \_\_\_\_\_.

Parallel lines are different than perpendicular lines because \_\_\_\_\_.

Angle ABC is an \_\_\_\_\_ angle because it measures \_\_\_\_\_ degrees.

An equilateral triangle's properties are \_\_\_\_\_.

**Vocabulary**

Point	angle	protractor	trapezoid
Line	obtuse angle	attribute	polygon
Line segment	acute angle	equilateral triangle	parallelogram
Ray	right angle	isosceles triangle	rhombus
Parallel line	vertex	scalene triangle	hexagon
Perpendicular line	degrees	line of symmetry	

**Focus and Motivation**

Brain Pop video - *Points, Lines, Segments, Rays*

Literature – *Sir Cumference and the Great Knight of Angleland* by Cindy Neuschwander

*What's your Angle, Pythagoras?* By Julie Ellis

Hands – on activity- shape sort

Songs –

NUMBEROCK: *Lines & Angles*, Songs for kids. <https://www.youtube.com/watch?v=NVuMULQjb3o>

NUMBEROCK: *Parallel, Perpendicular & Intersecting Lines Song*

<https://www.youtube.com/watch?v=P3AOoLbA3us>

# Points, Lines, and Rays

point

A

line segment

A B  
AB  
BA

ray

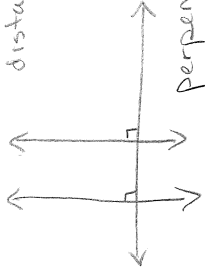
C B  
CB

line

A C  
AC  
CA

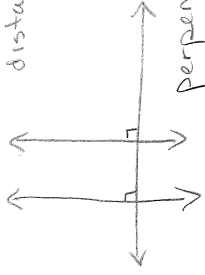
parallel lines

always the same distance apart



perpendicular lines

cross to form a right angle

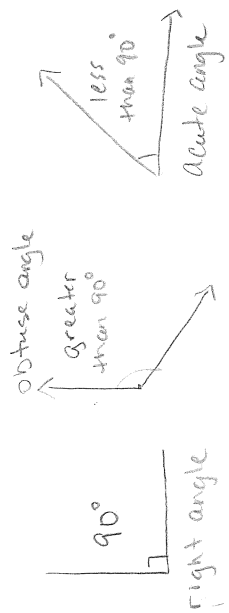


## Geometry

Angles



Types of Angles



measuring angles



protractor tool to measure angles

Mathematical Standards and Practices

We will look for and make use of structure when drawing and identifying points, lines, rays, and angles.

We will use appropriate tools strategically to measure and sketch angles

We will construct viable arguments when classifying two-dimensional figures.

What we know about geometry?

Inquiry What we want to learn about geometry?

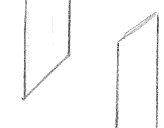
classifying figures

angles

length or relation to sides

right angles

parallel sides



triangles

equilateral



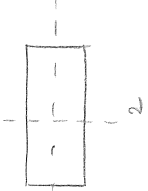
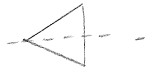
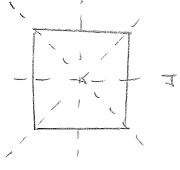
scalene



isosceles



Symmetry



lines of symmetry divide shape into mirror images