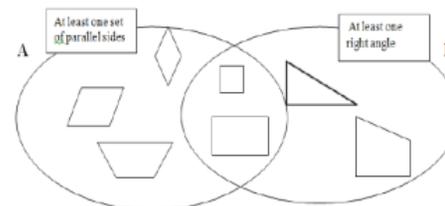


HPISD Grade 4 Mathematics

HPISD Grade 4 Mathematics				
UNIT NAME	ESTIMATED DURATION	9 WEEKS		
UNIT 4: GEOMETRY	4 WEEKS	1	2	3
Unit Overview				
Two dimensional geometric figures, lines and angles (identification and classification), symmetry, and congruence				
Enduring Understandings				
The student will understand that:	<ul style="list-style-type: none"> Objects can be described and compared using geometric attributes Points, lines and planes are the foundations of geometry Properties can be used to classify shapes Shapes can be seen from different perspectives—two and three dimensions 			
Concepts				
<ul style="list-style-type: none"> Lines and Angles 2 dimensional shapes Size, symmetry, and congruence Orientation and location 				
Guiding/Essential Questions				
<ol style="list-style-type: none"> 1. How can figures be represented and compared using geometric attributes? 2. How are points, lines, line segments, rays, and angles related? 3. How can lines, angles, and shapes be described, analyzed, and classified? 4. How are properties used to classify geometric figures? 5. How are geometric figures constructed or drawn? 				
Learning Targets		Learning Progressions		
<u>Prerequisite:</u> <ul style="list-style-type: none"> The student will use attributes to recognize quadrilaterals and draw examples of quadrilaterals that do not belong in a particular subcategory. The student will classify and sort 2-D and 3-D shapes based on attributes using geometric language. <u>Learning Target:</u> <ul style="list-style-type: none"> The student is able to analyze geometric attributes in order to develop general statements about the properties of the shape. <u>5th Grade Connection:</u>		<ul style="list-style-type: none"> Describe the differences between points, lines, line segments, rays, angles, and perpendicular and parallel lines Use geometric language to precisely name, describe, classify, and compare two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles to a specified size Classify 2-D shapes by their attributes: lines of symmetry, parallel and perpendicular lines, and angles 		

- The student will classify 2-D figures in a hierarchy of sets and subsets using graphic organizers based on their attributes and properties.



- Identify and draw one or more lines of symmetry for a 2-d figure

Example:

For each figure, draw all of the lines of symmetry. What pattern do you notice? How many lines of symmetry do you think there would be for regular polygons with 9 and 11 sides. Sketch each figure and check your predictions.

Polygons with an odd number of sides have lines of symmetry that go from a midpoint of a side through a vertex.



Prerequisite:

- Identify a right angle and locate vertices on various 2-D shapes

Learning Target:

- The student will solve problems involving angles less than or equal to 180 degrees

5th Grade Connection:

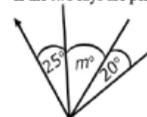
- N/A

- Apply knowledge of angles to classify triangles

- Determine angle measurements as a part of a circle or two non-overlapping adjacent angles to the nearest whole number

Example:

If the two rays are perpendicular, what is the value of m?



- Illustrate an angle with a given measure

Formative Assessments

Summative Assessments

TEKS: Readiness Standards

TEKS: Supporting Standards

- Identify points, lines, line segments, rays, angles, and perpendicular and parallel lines. **4.6A**
- Identify and draw one or more lines of symmetry, if they exist, for a two-dimensional figure. **4.6B**

<ul style="list-style-type: none"> 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. 4.6D 	<ul style="list-style-type: none"> Apply knowledge of right angles to identify acute, right, and obtuse triangles. 4.6C
TEKS Process Standards	
**See listed in Unit 1	
Processes and Skills: What students should be able to DO	Facts: What students should KNOW
<ul style="list-style-type: none"> Use appropriate terminology (acute, right, obtuse) to describe and recognize angles and rays (perpendicular) Draw and identify 2 dimensional geometric objects Classify 2-d figures using different characteristics (parallel, perpendicular) Identify and draw 1 or more lines of symmetry for a 2 dimensional figure Classify triangles according to their properties and analyze patterns to match triangles with the most appropriate name (right, scalene, isosceles) 	<ul style="list-style-type: none"> How to analyze geometric attributes in order to develop generalizations about their properties Point, line and plane are the core attributes of space objects, and real-world situations can be used to think about these attributes An angle is the union of two rays, <i>a</i> and <i>b</i>, with the same initial point <i>P</i> The unit of measuring an angle is one degree Acute angles less than 90 degrees; obtuse greater than 90; right angles = 90 degrees Shapes can be seen from different perspectives—two and three dimensions Shapes may have sides that are parallel, perpendicular, or neither; similar or congruent or neither and can be classified by these properties Folding cut-out figures will help students determine whether a figure has 1 or more lines of symmetry
Topics	
Language of Instruction	
acute angle congruent equilateral triangle	quadrilateral ray rectangle

intersecting lines isosceles triangle line obtuse angle parallel lines parallelogram perpendicular lines plane point polygon, side	rhombus right triangle right angle scalene triangle segment similar square straight angle trapezoid
State Assessment Connections	National Assessment Connections
Resources	
Envisions 2.0 Topic 14: Lines, Angles, and Shapes	