G6-1: Sides and Vertices of 2-D Figures

All polygons have sides (or ‘edges’) and vertices (the ‘corners’ where the edges meet).

vertices ↔ sides

NOTE: A polygon is a 2-D (flat) shape with sides made of straight lines.

HINT: To avoid missing sides and vertices when you count, you should ...
mark the sides and circle the vertices.

1. Find the number of sides and vertices in each of the following figures.
   HINT: Mark the sides and circle the vertices as you count.
   a) ______ sides ______ vertices
   b) ______ sides ______ vertices
   c) ______ sides ______ vertices
   d) ______ sides ______ vertices
   e) ______ sides ______ vertices
   f) ______ sides ______ vertices

2. Peter names the shapes according to how many sides they have.
   a) ______ sides triangle
   b) ______ sides quadrilateral
   c) ______ sides pentagon
   d) ______ sides hexagon

3. Complete the chart. Find as many shapes as you can for each shape name.

<table>
<thead>
<tr>
<th>Shapes</th>
<th>Letters</th>
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<tbody>
<tr>
<td>Triangles</td>
<td></td>
</tr>
<tr>
<td>Quadrilaterals</td>
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4. On grid paper, draw a polygon with:
   a) 4 sides
   b) 6 sides

5. How many sides do three quadrilaterals and five pentagons have altogether?
   How did you find your answer?
G6-2: Introduction to Angles

TEACHER: Before starting this worksheet, review right angles with your class.

1. Mark each angle as (i) a right angle; (ii) less than a right angle; OR (iii) greater than a right angle. Check your answers with the corner of a piece of paper.
   a)  
   b)  
   c)  
   d)  
   less than  
   
2. Mark all the right angles in the following figures. Then circle the figures that have two right angles.
   a)  
   b)  
   c)  
   d)  
   e)  

3. Mark any right angles in the shapes below with a square. Mark any angles less than a right angle with a single line. Mark any angles greater than a right angle with a double line.
   
4. Mark all half right angles with a single line. Mark any angle less than a half right angle with a dot. Mark any angle greater than a half right angle and less than a right angle with a check.
To measure an angle, you use a protractor. A protractor has 180 subdivisions around its circumference. The subdivisions are called degrees. 45° is a short form for “forty-five degrees.”

There are 180 subdivisions (180°) around the outside of a protractor.

There are 90° in a right angle (or a square corner).

Angles that are less than 90° are called acute angles.

Angles that are more than 90° are called obtuse angles.

1. Without using a protractor, identify each angle as acute or obtuse.

   a)  
   
   b)  
   
   c)  
   
   d)  
   
   e)  
   
   f)  
   
   g)  
   
   h)  
   
   i)  

   _________  
   _________  
   _________  
   _________  
   _________  
   _________  
   _________  

   Geometry 1
A protractor has two scales. The exercise below will help you decide which scale to use.

2. Identify the angle as acute or obtuse.
   Next circle the two numbers that the arm of the angle passes through.
   Then pick the correct measure of the angle (i.e. if you said the angle is acute, pick the number that is less than 90°).

   a) The angle is: **acute**
      The angle is: **60°**

   b) The angle is: __________
      The angle is: __________

   c) The angle is: __________
      The angle is: __________

   d) The angle is: __________
      The angle is: __________

3. Again, identify the angle as acute or obtuse. Then measure the angle.

   a) __________
   b) __________
4. Measure the angles using a protractor. Write your answers in the boxes provided – don't forget units!

HINT: For one question, you will have to turn the page (or the protractor!) upside down.