

COURSE: **MSC III**
 MODULE 5: **Geometry**
 UNIT 1: **Measurement**

Rectangles and Squares

Student Logbook



As you work through the tutorial, complete the following.

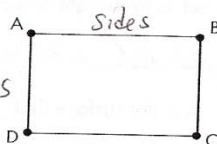
What is your mission for this lesson? explore rectangles

A rectangle is a 4-sided closed figure that has 4 right angles.

Each angle in a rectangle measures 90° . Each corner of a rectangle is the vertex of an angle.

Figure ABCD is a rectangle.

The letters, A, B, C, D, represent each vertex.



The endpoints of a segment, such as A and B, can be used to refer to the sides of a rectangle. Segment AB can also be written as AB.

Name an angle, use three letters.

The vertex is always named by the middle letter.

The other letters represent a point on each side of the angle.

The symbol for an angle is \angle .

In rectangle ABCD above, use 3 letters to name the angle with vertex A. $\angle DAB$ or $\angle BAD$

What is the measure of each angle? 90°

Key Words:

Rectangle
 Square
 Perpendicular (\perp)
 Parallel (\parallel)
 Plane
 Perimeter
 Area of a rectangle

Learning Objectives:

- Examine the properties of a rectangle and a square.
- Define perpendicular and parallel lines.
- Calculate the perimeters of rectangles and squares.
- Explore the relationship between the perimeters and areas of rectangles and squares.

Name _____

Date _____

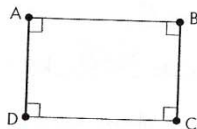


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6. Four ways to name the rectangle in question 4 are ABCD, BCDA, CDAB, and DABC.
7. a. A square is a rectangle with four equal sides.
b. Every square is a rectangle, but not every rectangle is a square.
8. Lines that meet to form right angles are said to be perpendicular lines.
9. \overline{AB} is perpendicular to \overline{BC} . We can write this as $\overline{AB} \perp \overline{BC}$.
10. A plane is a flat surface that goes on forever in all directions.
11. Lines in a plane that never meet are parallel. The symbol for this term is \parallel .

12. Figure ABCD is a rectangle.
Use the symbols for parallel and perpendicular lines to complete each statement about the sides of this rectangle.



- a. $\overline{AB} \perp \overline{BC}$ b. $\overline{BC} \parallel \overline{DA}$ c. $\overline{DA} \perp \overline{DC}$ d. $\overline{AB} \parallel \overline{DC}$
13. Perimeter is the sum of the lengths of the sides of a figure.
14. Area is the number of square units in a figure.
The area of a rectangle is equal to its length times its width,
or $A = l \times w$.

Angles

Student Logbook



work through the tutorial, complete the following.

What is your mission for this lesson? to explore triangles

A triangle is a three-sided closed figure.

We can use the symbol \triangle in front of the letters BMS to name the triangle that represents the Bermuda Triangle, for example

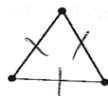
Since each letter that names a triangle represents the vertex of an angle, we can write the letters in any order.

Three other possible names for $\triangle BMS$ are $\triangle MSB$, $\triangle MB S$, and $\triangle SBM$.

A triangle that has two equal sides is an isosceles triangle.

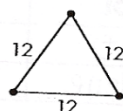
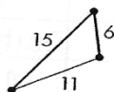
A triangle that has three equal sides is a equilateral triangle.

Use this triangle to show that all three of its sides are equal.



A triangle that has no equal sides is a scalene triangle.

Classify each triangle as isosceles, equilateral, or scalene. (Triangles by sides)



a. isosceles

b. scalene

c. equilateral

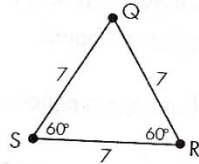
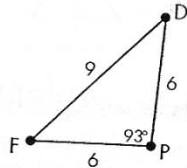
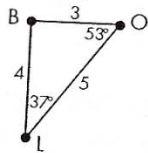
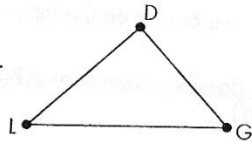
Key Words:

Triangle
 Vertex of a triangle
 Scalene triangle
 Isosceles triangle
 Equilateral triangle
 Acute triangle
 Right triangle
 Obtuse triangle

Learning Objectives:

- Classify triangles according to the measures of their sides.
- Determine that the sum of the angles in a triangle equals 180° .
- Find the perimeter of a triangle.
- Classify triangles according to the measures of their angles.

8. A triangle that has three acute angles is called an acute triangle.
9. A triangle that has an obtuse angle is called an obtuse triangle.
10. A triangle that has a right angle is called a right triangle.
11. The sum of the measures of the angles of any triangle is 180° .
12. In $\triangle LDG$, if $\angle DGL + \angle GLD = 90^\circ$,
then $\angle LDG = 180^\circ - 90^\circ = 90^\circ$.
So $\triangle LDG$ is a right triangle.
13. We can name any triangle based on the measures of its sides and the measures of its angles.
14. Describe these triangles based on the measures of their sides and the measures of their angles.



By angles:

By sides:

$\triangle BOL$	$\triangle DPF$	$\triangle QRS$
right	obtuse	acute (equiangular)
scalene	isosceles	equilateral