



# MATH NEWS



LAFAYETTE  
PARISH SCHOOL SYSTEM

Grade 4, Module 4, Topic D

## 4<sup>th</sup> Grade Math

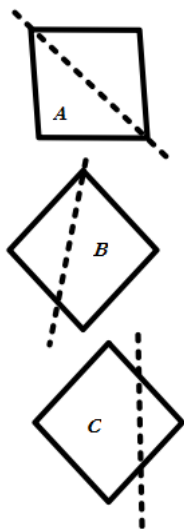
Module 4: Topic D: Two-Dimensional Figures and Symmetry

### Math Parent Letter

This document is created to give parents and students a better understanding of the math concepts found in Eureka Math (© 2013 Common Core, Inc.) that is also posted as the Engage New York material which is taught in the classroom. Module 4 of Eureka Math (Engage New York) covers angle measures and plane figures.



**Line of Symmetry** - line through a figure such that when the figure is folded along the line two halves are created that match up exactly



Consider figures A, B, and C. Only one of them shows a line of symmetry. Students will need to see that figure A can be folded along the dotted line making the halves line up exactly. Therefore, figure A has the line of symmetry.

### OBJECTIVES OF TOPIC B

- ▶ Recognize lines of symmetry for given two-dimensional figures; identify line-symmetric figures and draw lines of symmetry.
- ▶ Analyze and classify triangles based on side length, angle measure, or both.
- ▶ Define and construct triangles from given criteria. Explore symmetry in triangles.
- ▶ Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size.
- ▶ Reason about attributes to construct quadrilaterals on square or triangular grid paper.

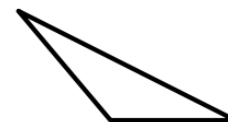
## Focus Area – Topic D

Two-Dimensional Figures and Symmetry

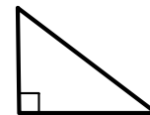
### Words to Know:

**Triangle** - A triangle consists of three points and the three line segments between them. The three segments are called the sides of the triangle and the three points are called the vertices.

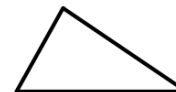
**Obtuse triangle** - triangle with an interior obtuse angle



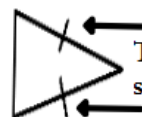
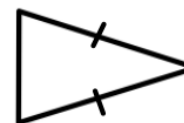
**Right triangle** - triangle that contains one 90° degree angle



**Scalene triangle** - triangle with no sides or angles equal



**Isosceles triangle** - triangle with at least two equal sides

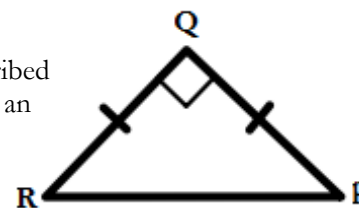


These marks mean the sides are the same length.

### Example Problem and Answer

Students are asked to decide if a given triangles can be described as right triangle and an isosceles triangle. Consider this example.

Can  $\triangle PQR$  be described as a right triangle and an isosceles triangle?



Answer: Yes because it has a right angle and two equal sides.

# Module 4: Topic D:

## Two-Dimensional Figures and Symmetry

### Words to Know:

**Attribute** - a characteristic that describes an object

**Polygon** - closed two-dimensional figure with straight sides

**Quadrilateral** - polygon with four sides

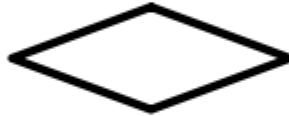
**Rectangle** - quadrilateral with four right angles



**Square** - rectangle with all sides of equal length



**Rhombus** - quadrilateral with all sides of equal length



**Parallelogram** - quadrilateral with two pairs of parallel sides



**Trapezoid** - quadrilateral with at least one pair of parallel sides



### Example Problem and Answer

Explain the attribute that makes a square a special rectangle.



A rectangle has 4 sides and 4 right angles. A square has 4 sides and 4 right angles as well so a square is a rectangle. We say it is a special rectangle because it has 4 equal sides.

## Two-Dimensional Figures and Symmetry



### Example Problem and Answer

Follow the directions below to draw a figure.

Directions	Answer
<b>Step 1</b> Draw 2 points. Label one point as <b>J</b> and the other point as <b>K</b> .	
<b>Step 2</b> Draw $\overleftrightarrow{JK}$	
<b>Step 3</b> Draw point <b>L</b> that is not on $\overleftrightarrow{JK}$	
<b>Step 4</b> Draw $\overrightarrow{KL}$	
<b>Step 5</b> Draw $\overline{JL}$	

Which figure did you draw? What attributes does it have?

I drew triangle  $\triangle JKL$  or  $\overline{JKL}$ . It has 3 sides. It is a scalene triangle because it has no sides or angles that are equal.