



# MATH NEWS



Grade 4, Module 4, Topic D

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

Module 4: Angle Measure and Plane Figures

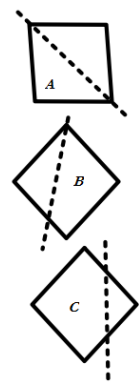
### Math Parent Letter

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. This newsletter will discuss Module 4, Topic D.

Topic D: Two-Dimensional Figures and Symmetry



**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


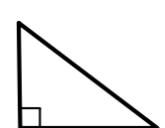

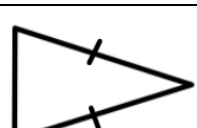


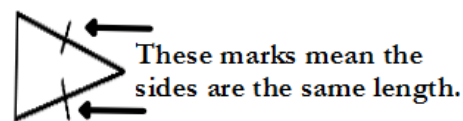
Consider figures A, B, and C. Only one of them shows a line of symmetry. Students will need to see that figure A can be folded along the dotted line making the halves line up exactly. Therefore, figure A has the line of symmetry.

## Focus Area – Topic D

Two-Dimensional Figures and Symmetry

**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.

<b>Obtuse triangle</b> - triangle with an interior obtuse angle	
<b>Right triangle</b> - triangle that contains one 90° degree angle	
<b>Scalene triangle</b> - triangle with no sides or angles equal	
<b>Isosceles triangle</b> - triangle with at least two equal sides	



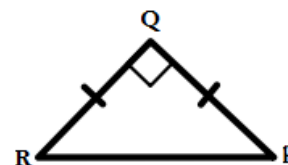
## OBJECTIVE OF TOPIC D

- 1 Recognize lines of symmetry for given two-dimensional figures; identify line-symmetric figures and draw lines of symmetry.
- 2 Analyze and classify triangles based on side length, angle measure, or both.
- 3 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.
- 4 Reason about attributes to construct quadrilaterals on square or triangular grid paper.

### 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?



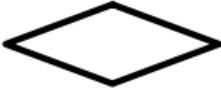




Answer: Yes because it has a right angle and two equal sides.

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



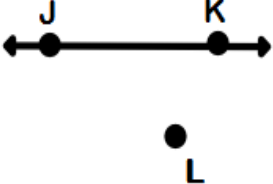
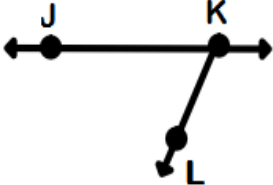
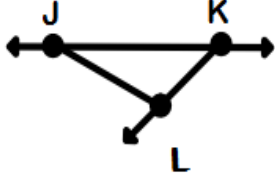
**Polygon** - closed two-dimensional figure with straight sides

**Quadrilateral** - polygon with four sides

<b>Rectangle</b> - quadrilateral with four right angles	
<b>Square</b> - rectangle with all sides of equal length	
<b>Rhombus</b> - quadrilateral with all sides of equal length	
<b>Parallelogram</b> - quadrilateral with two pairs of parallel sides	
<b>Trapezoid</b> - quadrilateral with at least one pair of parallel sides	

### 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 $\overline{JL}$	

### 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.

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

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