# MATH NEWS

4th 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
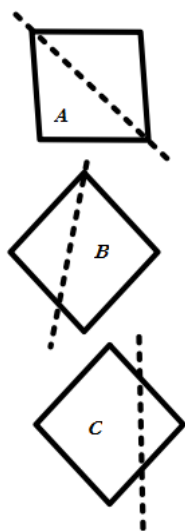
Consider figures A, B, and C. Only one of them shows a line of symmetry. Students will need to see that figure **A** can be folded along the dotted line making the halves line up exactly. Therefore, figure **A** has the line of symmetry.

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.

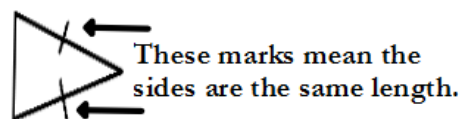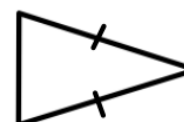**Obtuse triangle** - triangle with an interior obtuse angle

Right triangle- triangle that contains one 90° degree angle
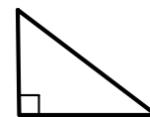
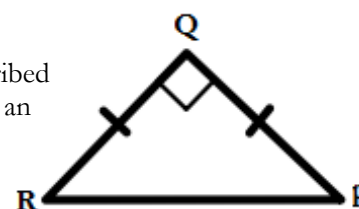**Scalene triangle** - triangle with no sides or angles equal

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 △PQR be described as a right triangle and an isosceles triangle?

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

Two-Dimensional Figures and Symmetry

Words to Know:

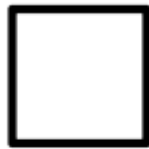**Attribute -** a characteristic that describes an object
Polygon - closed two-dimensional figure with straight sides
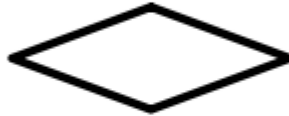**Quadrilateral -** polygon with four sides

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.

Example Problem and Answer

Follow the directions below to draw a figure.

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

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

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