Eureka Math

4th Grade
Module 4
Lesson 13

At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this project!

Directions for customizing presentations are available on the next slide.

Icons

RDW	Read, Draw, Write
	Learning Target
	Personal White Board
Problem Set 1 2 3 4 5	Problem Set
	Manipulatives Needed
+ − × ÷	Fluency

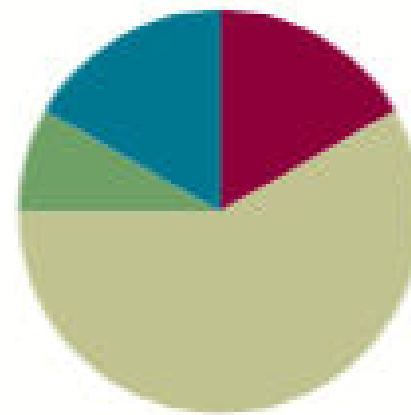|	
	Think Pair Share
	Whole Class
	Individual
	Partner
	Small Group
	Small Group Time

Lesson 13

Objective: Analyze and classify triangles based on side length, angle measure, or both.

Suggested Lesson Structure

- ■ Fluency Practice   (10 minutes)
- ■ Application Problem   (5 minutes)
- ■ Concept Development   (35 minutes)
- ■ Student Debrief   (10 minutes)

Total Time   **(60 minutes)**

Analyze and classify triangles based on side length, angle measure, or both.

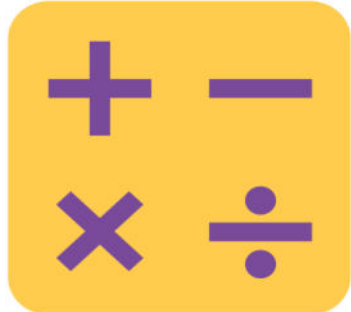# ➕➖✖️➗ Divide 3 different way
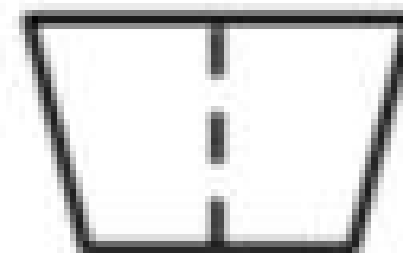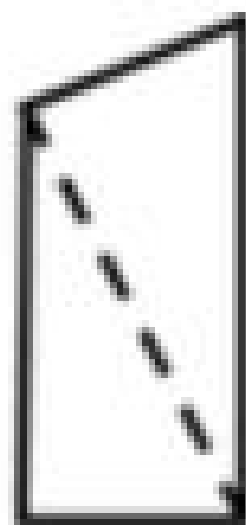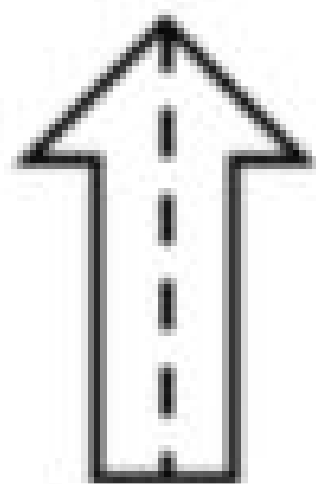
532/4=_____

854/3=_____

Physiometry

Fall directions on page 4.D.18

Lines of Symmetry

Application Problem

Use triangle template. Follow directions on page 4.D.19

Triangle Attributes.

- What types of attributes can triangles have?
- In your small groups talk about how you would classify these triangles. Be ready to explain why.

Classify by side length

- Spend some time sorting angles by side length.
- Which triangles did you put together based of of side length? Why?
- Triangles that have NO sides the same length are called scalene triangles.
- Triangles that have TWO sides the same length are called isosceles triangles.
- Triangles that have ALL sides the same length are called equilateral triangles.
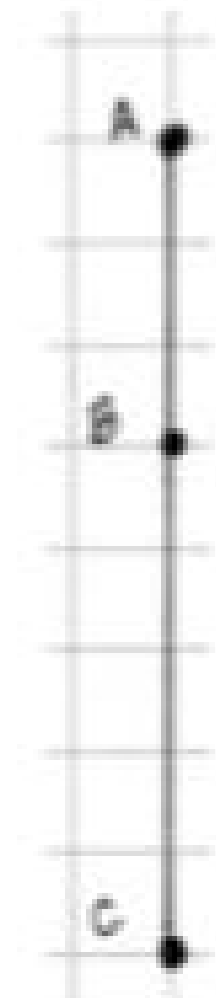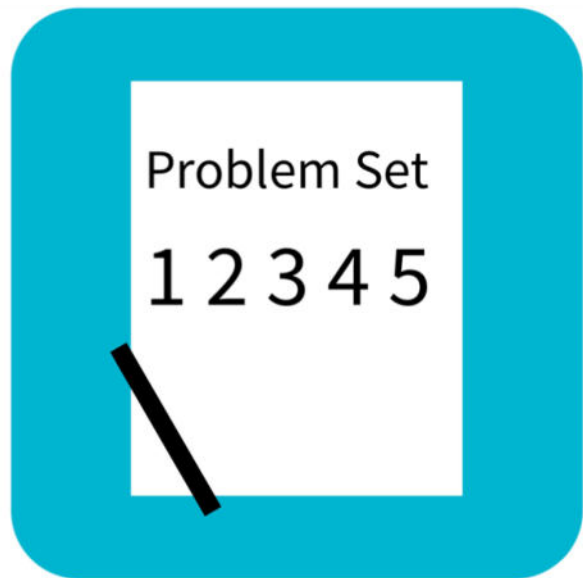
Classify by angle measure

- Spend some time sorting angles by angle measure.
- Which triangles did you put together based of of side length? Why?
- Triangles that have an obtuse angle are called OBTUSE triangles.
- Triangles that have a right angle are called RIGHT triangles.
- Triangles that have an acute angle are called ACUTE triangles.

Define a triangle

- What do we know about triangles that will help us draw one?
- On your graph paper draw three points and label them A, B, and C.
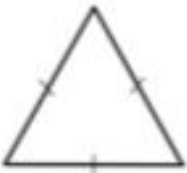- Is this figure a triangle? Why?

Problem Set

Problem Set

1 2 3 4 5

Name _____   Date _____

1. Classify each triangle by its side lengths and angle measurements. Circle the correct names.

	Classify Using Side Lengths	Classify Using Angle Measurements
a.	Equilateral Isosceles Scalene	Acute Right Obtuse
b.	Equilateral Isosceles Scalene	Acute Right Obtuse
c.	Equilateral Isosceles Scalene	Acute Right Obtuse
d.	Equilateral Isosceles Scalene	Acute Right Obtuse
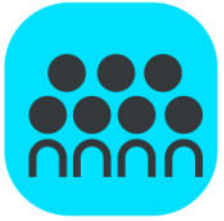
Debrief

- How do the tick marks and angle symbols allow classification of triangles without using tools in Problem 1?

- What strategy did you use to solve Problem 3(b)?

- Explain your answer to Problem 5(b). Recall from Lesson 6 that the word *collinear* describes three points that are on a line.

- A **triangle** can be defined as three points that are not collinear and that have line segments between them. Discuss this definition with your partner. Make sure you understand it completely.

- How many lines of symmetry can be found in **scalene triangles**? **Equilateral triangles**? **Isosceles triangles**?

- Can you determine if a triangle will have a line of symmetry just by knowing whether it is an **acute triangle** or an **obtuse triangle**? How about scalene or isosceles? Sketch an example of a scalene and isosceles triangle to verify your answer.

- Sketch some examples to prove your answer to Problem 6. How many acute angles do **right triangles** have?

- How did the Application Problem connect to today's lesson?

Exit Ticket

Name _____   Date _____

Use appropriate tools to solve the following problems.

1. The triangles below have been classified by shared attributes (side length _or_ angle type). Use the words _acute, right, obtuse, scalene, isosceles,_ or _equilateral_ to label the headings to identify the way the triangles have been sorted.