Eureka Math

4th Grade
Module 4
Lesson 3

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

Read, Draw, Write

Learning Target

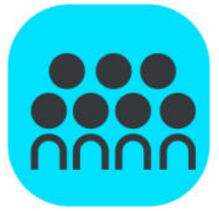
Personal White Board

Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

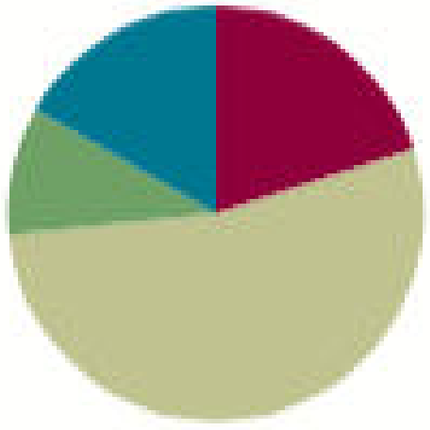
Small Group Time

Lesson 3

Objective: Identify, define, and draw perpendicular lines.

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(6 minutes)
Concept Development	(32 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Identify, define, and draw perpendicular lines.

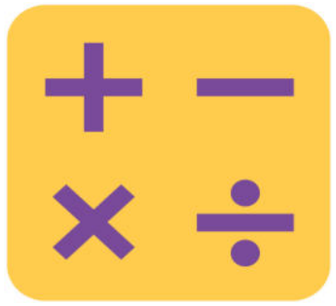
Multiply

34 x 2=_____

34 x 20=_____

23 x 2=

23 x 20=_____



Physiometry

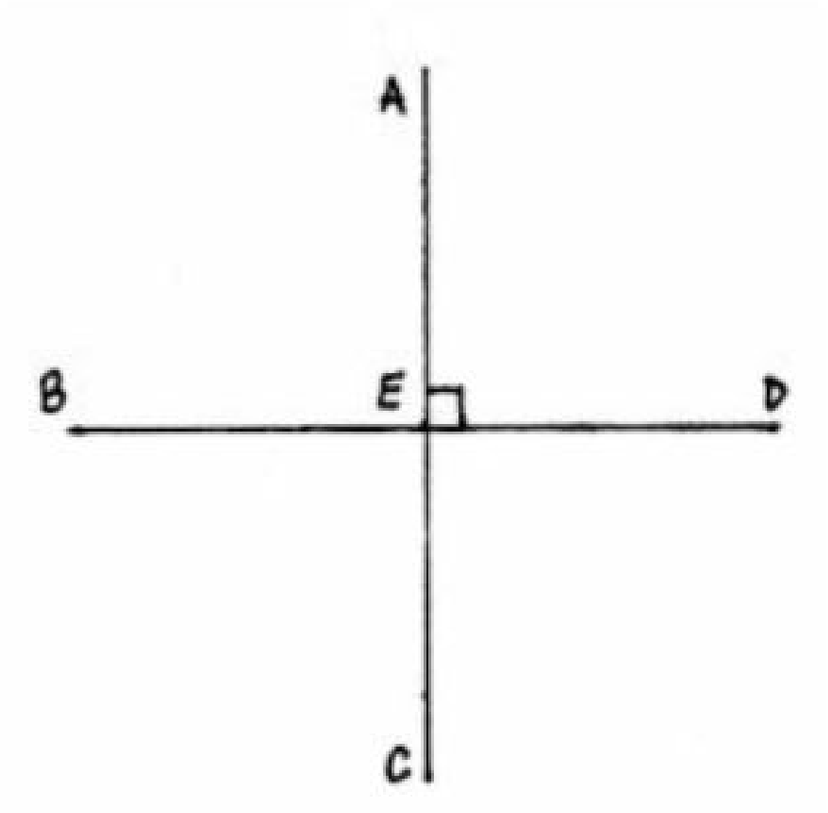
Look on page 4.A.33 for directions

Application Problem

- Use a straightedge to draw and label segment AB, segment CD and segment EF as seen on the board.
- Estimate to draw point X halfway up segment AB
- Estimate point Y halfway up segment CD
- Connect point X and Y. What word do you just draw?

Create right angle template

- What do you notice between these two figures?

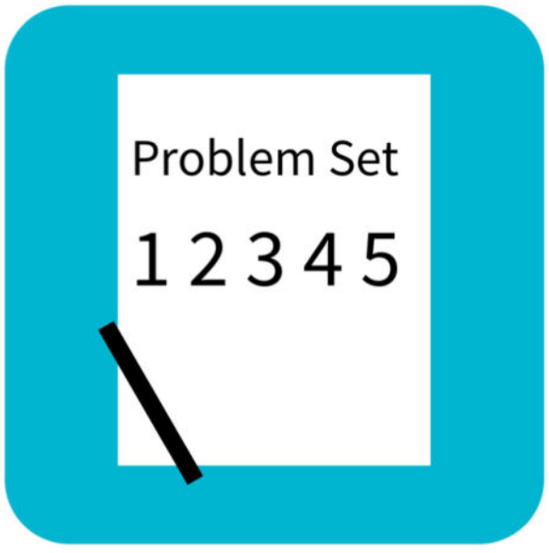


We call lines that cross over and that create 90 degree angles PERPENDICULAR lines. Lines that only cross over are called INTERSECTING LINES.

Recognize and write Perpendicular Lines

- Look at the figure below. What do you notice?
- What do you think the symbol means?

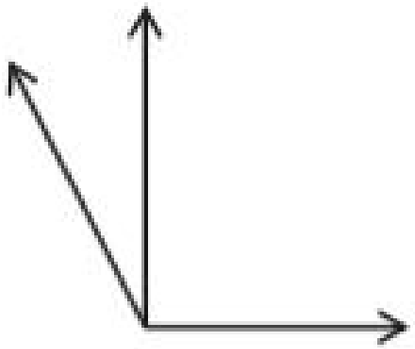
$\overline{AB} \perp \overline{BD}$

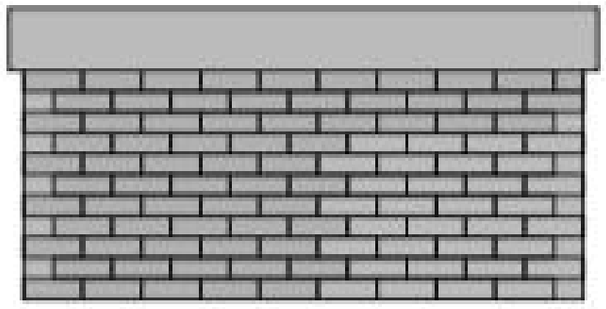


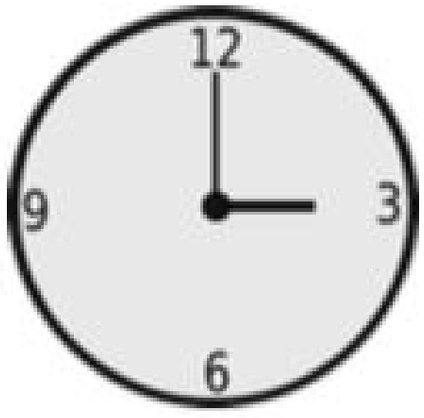
Problem Set

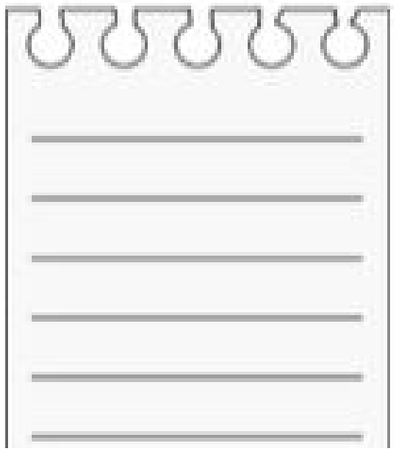
Name _____ Date _____

1. On each object, trace at least one pair of lines that appear to be perpendicular.









Debrief

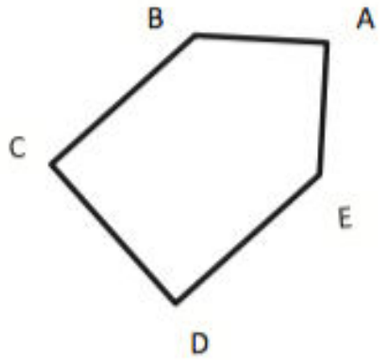
- Look at the grid lines in Problem 3. Are the grid lines perpendicular or intersecting? Or both?
- In Problem 4, which figures had no perpendicular lines? Explain.
- In Problem 5, I only located eight right angles (on the interior of the figure). How many more right angles are there? What did this problem show you about locating angles on figures?
- How are perpendicular lines related to right angles? Acute angles? Obtuse angles?
- How might you use your understanding of perpendicular lines to solve a problem in real life? How might you use perpendicular lines when building something, for example?
- As you search for lines in your environment, notice if you find perpendicular or **intersecting lines** in nature. Analyze upright perpendicular lines, **diagonal** perpendicular lines, and intersecting lines as used by human beings.

Exit Ticket

Name _____ Date _____

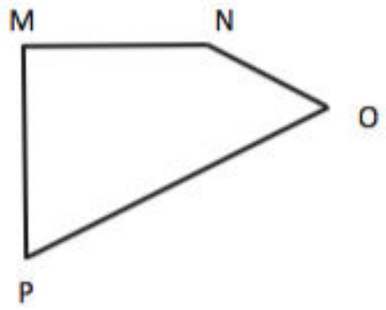
Use a right angle template to measure the angles in the following figures. Mark each right angle with a small square. Then, name all pairs of perpendicular sides.

1.



$\overline{BC} \perp$ _____

2.



$\overline{MN} \perp$ _____