Materials List:

- Template 2 Game Cards
- Template 1 polygon
- whiteboard
- Ruler with inches and centimeters
- Right angle tool
- workbook

Eureka Math

3rd Grade
Module 7
Lesson 6

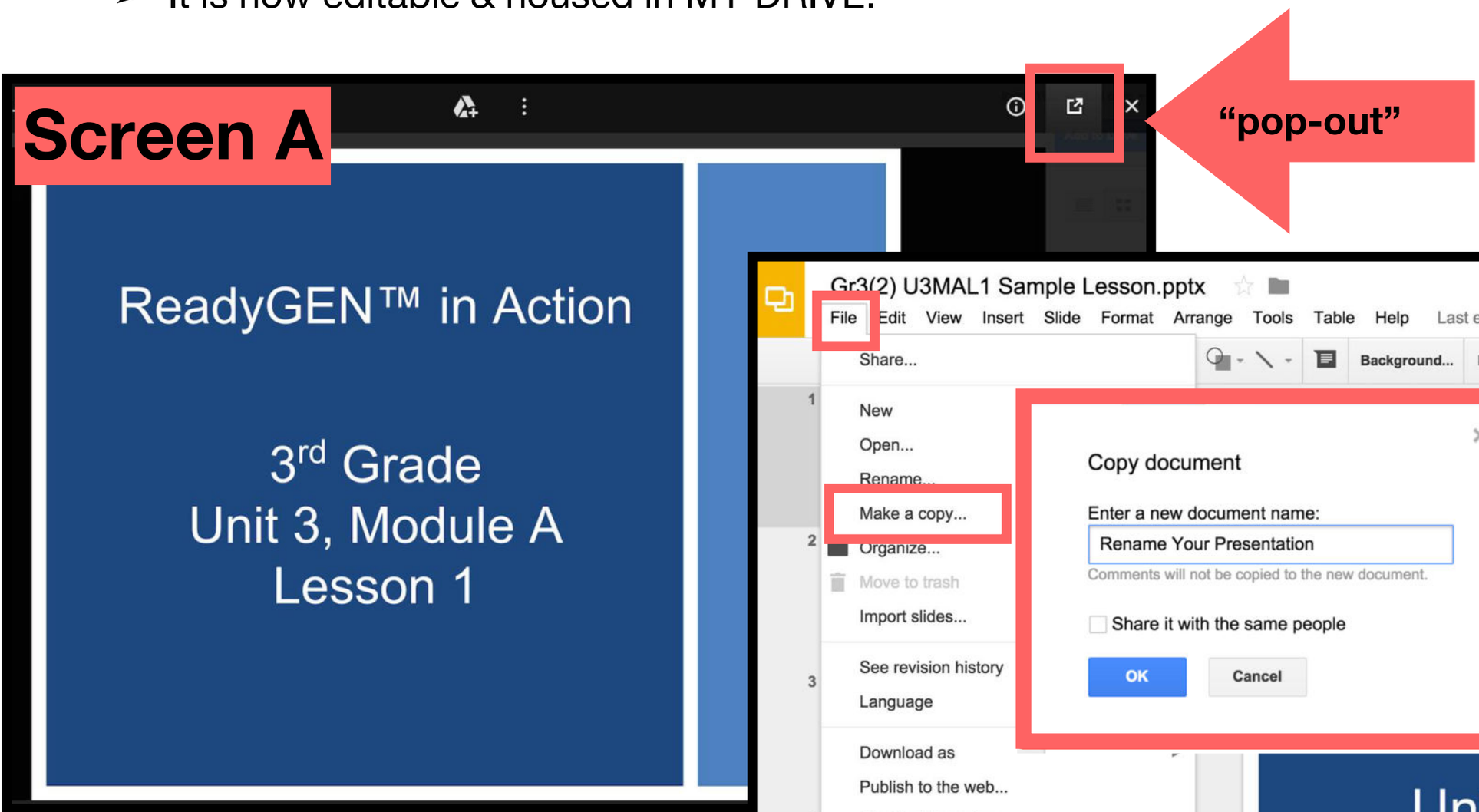
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this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

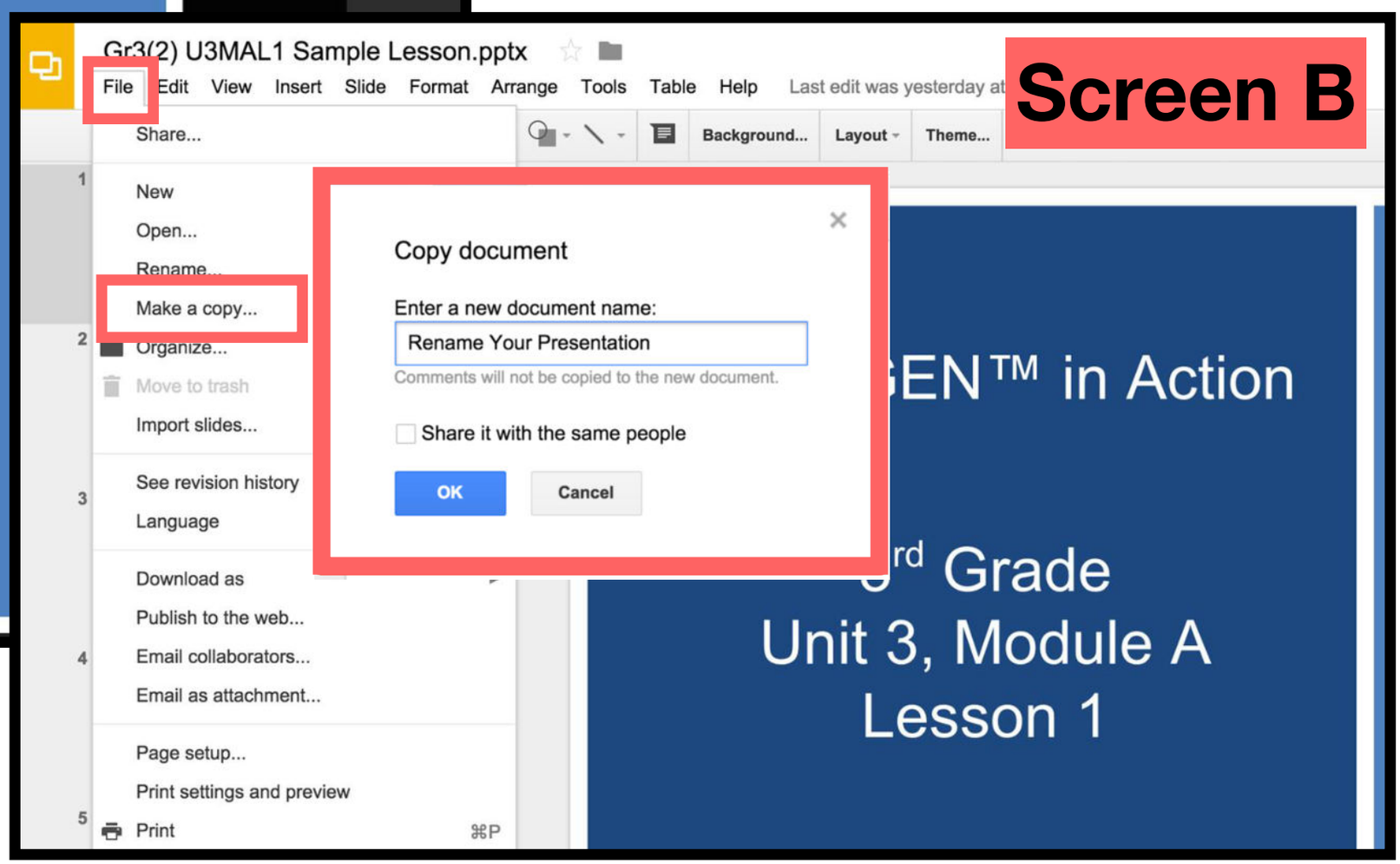
Directions for customizing presentations are available on the next slide.

Customize this Slideshow

Reflecting your Teaching Style and Learning Needs of Your Students

- When the Google Slides presentation is opened, it will look like Screen A.
- Click on the “pop-out” button in the upper right hand corner to change the view.
- The view now looks like Screen B.
- Within Google Slides (not Chrome), choose FILE.
- Choose MAKE A COPY and rename your presentation.
- Google Slides will open your renamed presentation.
- It is now editable & housed in MY DRIVE.





Icons

Read, Draw, Write

Learning Target

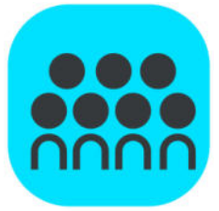
Personal White Board

Problem Set

Manipulatives Needed

Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

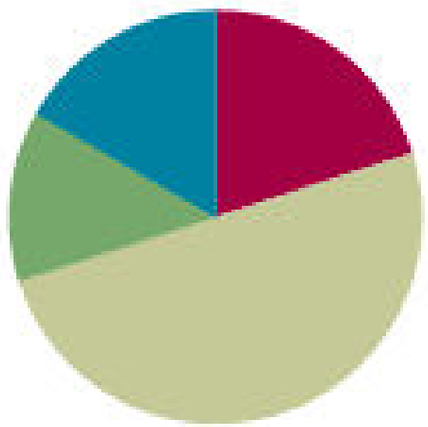
Small Group Time

Lesson 6

Objective: Draw polygons with specified attributes to solve problems.

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(8 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



I can draw polygons to solve problems.

Fluency Practice

Equivalent Counting with Units of 7 (4 minutes)

Count to 10 as I write. Please do not count faster than I can write.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Count to 10 sevens.

1 seven, 2 sevens, 3 sevens, 4 sevens, 5 sevens, 6 sevens, 8 sevens, 9 sevens, 10 sevens

Count by sevens to 70

Alternate between units of 7 and the number

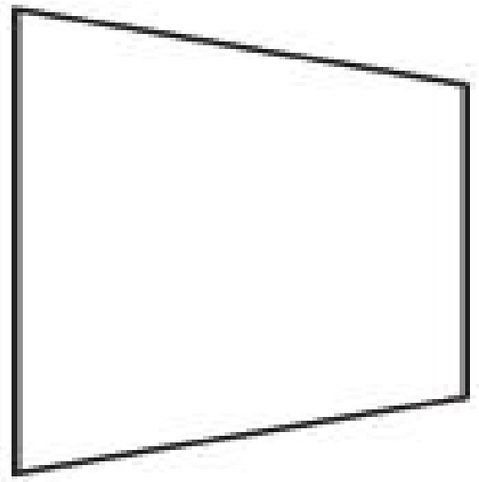
Fluency Practice

Equivalent Counting with Units of 7 (4 minutes)

1	2	3	4	5	6	7	8	9	10
1 seven	2 sevens	3 sevens	4 sevens	5 sevens	6 sevens	7 sevens	8 sevens	9 sevens	10 sevens
7	14	21	28	35	42	49	56	63	70
1 seven	14	3 sevens	28	5 sevens	42	7 sevens	56	9 sevens	70
7	2 sevens	21	4 sevens	35	6 sevens	49	8 sevens	63	10 sevens

Fluency Practice

Classify the Polygon (4 minutes)



How many sides does this polygon have?

What do we call a polygon with four sides?

How many sets of parallel lines does this quadrilateral have?

What do we call quadrilaterals that have AT LEAST one set of parallel lines?

Fluency Practice

Classify the Polygon (4 minutes)

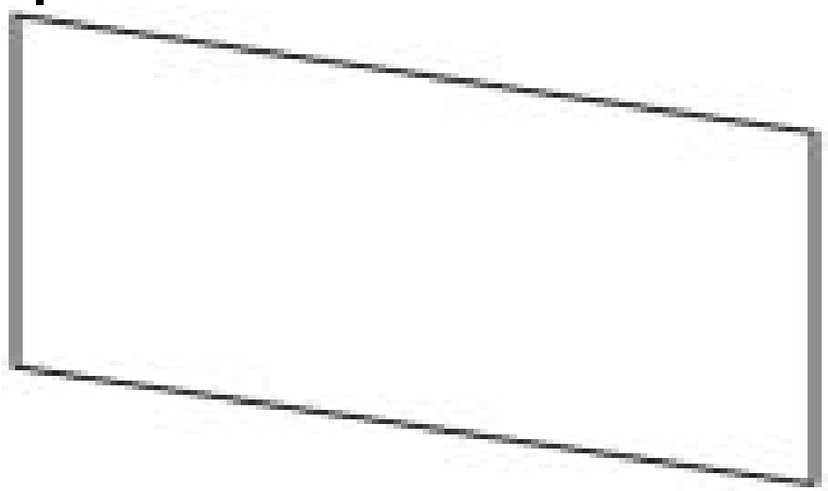
Is this polygon a quadrilateral? Why?

How many right angles does this quadrilateral have?

Is this quadrilateral a trapezoid? Why?

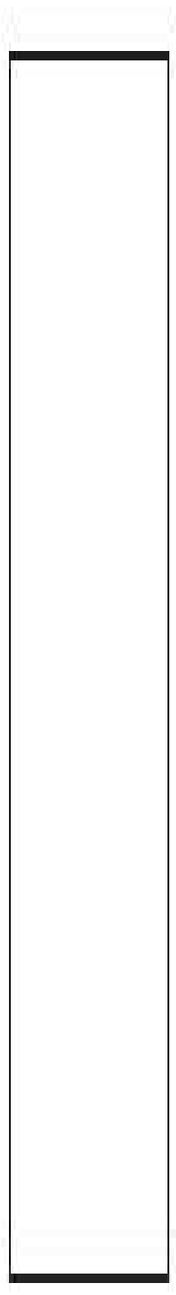
How many sets of parallel sides does it have?

What do we call a quadrilaterals that have two sets of parallel sides?



Fluency Practice

Classify the Polygon (4 minutes)



Is this polygon a quadrilateral? Why?

How many right angles does this quadrilateral have?

Is this quadrilateral a trapezoid? Why?

Is this trapezoid also a parallelogram? Why?

Is this parallelogram also a rectangle? Why?

What do we call a quadrilaterals that have two sets of parallel sides?

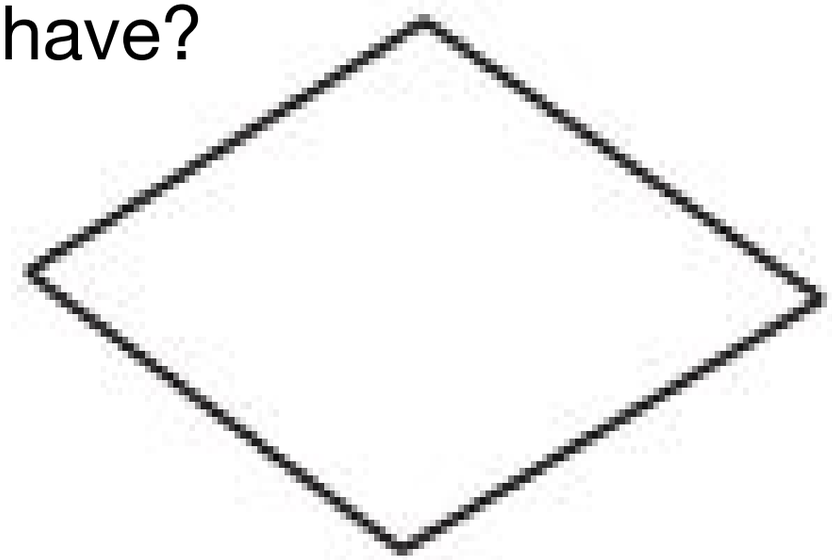
Fluency Practice

Classify the Polygon (4 minutes)

Is this polygon a quadrilateral? Why?

How many right angles does this quadrilateral have?

Is this quadrilateral a trapezoid? Why?

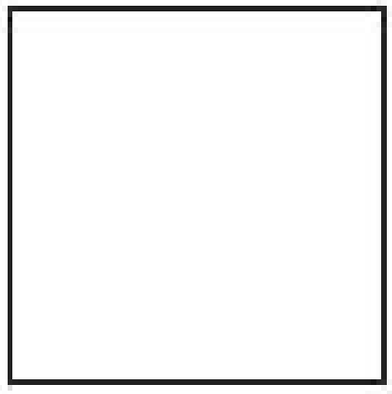


Is this trapezoid also a parallelogram? Why?

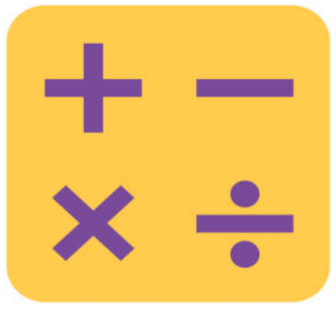
Is this parallelogram also a rectangle? Why?

What do we call a parallelogram with 4 equal-length sides?

What is a rhombus with 4 right angles called?



How else can we classify a square?



Fluency Practice

Physiometry (3 minutes)

Stand up.

What type of angle am I modeling?

Model a right angle with your arms.

Now, model another right angle.

How many sides does a triangle have?

Using your arms, model a triangle with the person standing next to you.

What do we call a four-sided figure?

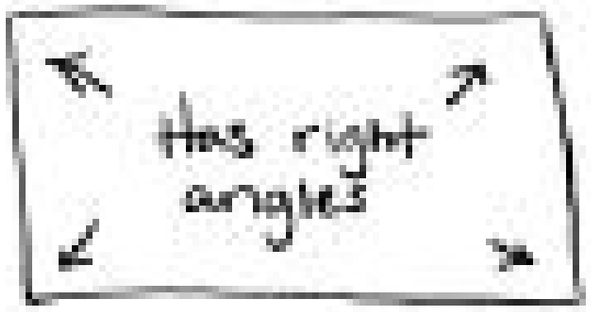
Use your body to make a quadrilateral with your partner.

Application Problem

Frankie says that all squares are rectangles, but not all rectangles are squares. Do you agree with this statement? Why or why not? Draw diagrams to support your statement.

Application Problem

Rectangles:



- Has 4 sides.
- Has 2 sets of parallel sides.
- Sides don't have to be the same length (but they can be).

Squares:

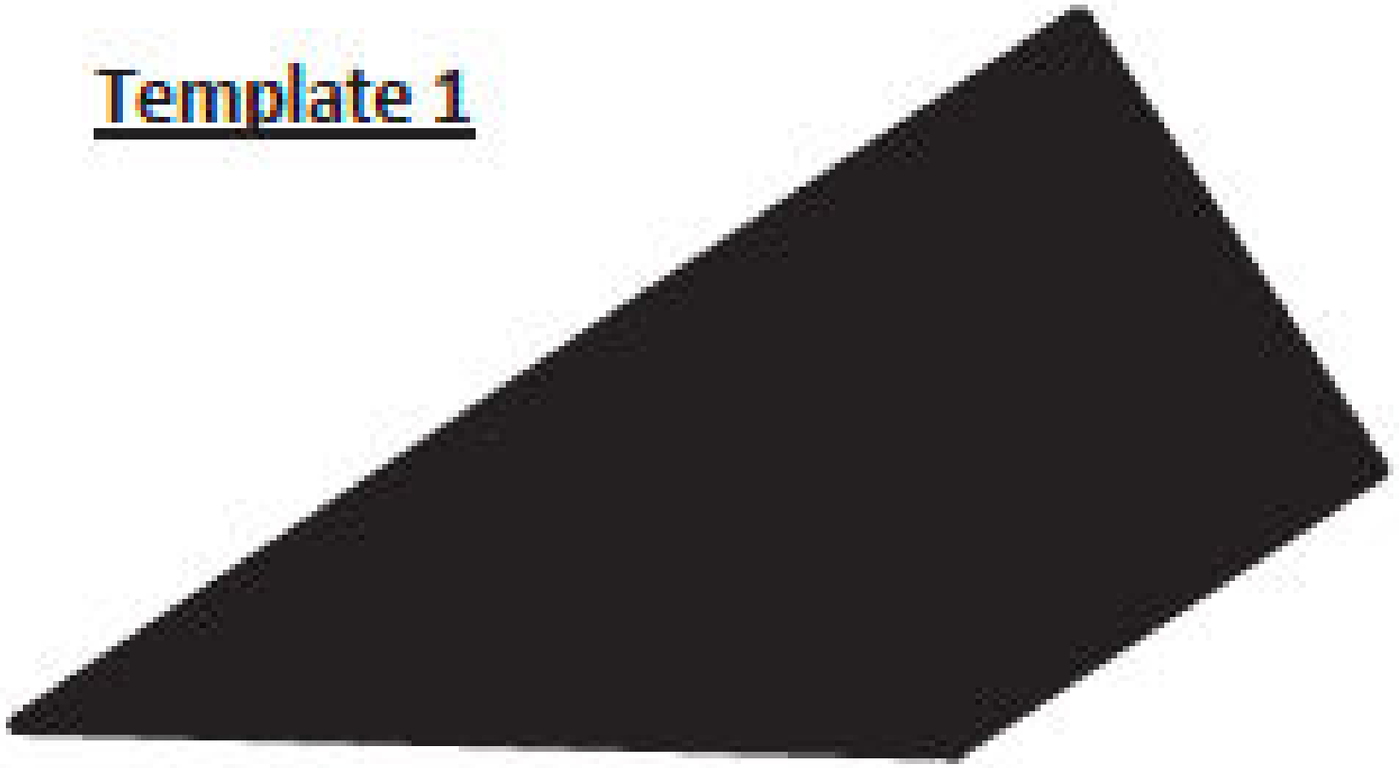
- Has 4 sides
- Has 2 sets of parallel sides.
- All sides are same length.

I agree with Frankie. A square has all the same things as a rectangle. It's a rectangle with 4 equal sides. But rectangles don't always have to have equal sides.

Concept Development

With your partner, analyze this shape and list as many of its attributes as you can on your whiteboard. Use your right angle tool and ruler to help you.

Template 1

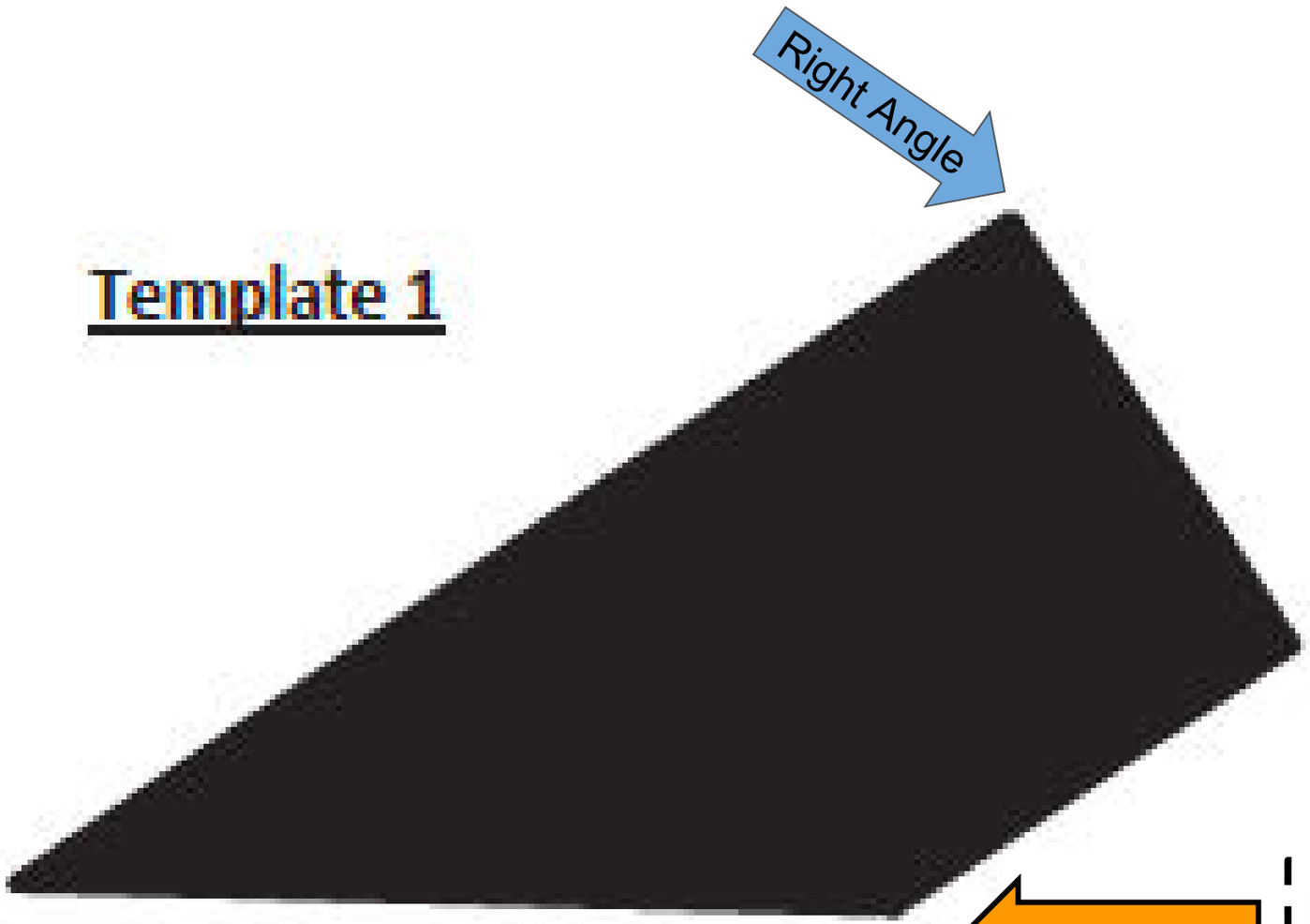


Possible responses:

- Polygon
- Quadrilateral
- Trapezoid
- Four sides
- One pair of parallel sides
- Two right angles
- Two equal sides

Concept Development

Let’s talk about how to describe the angles that are not right angles.



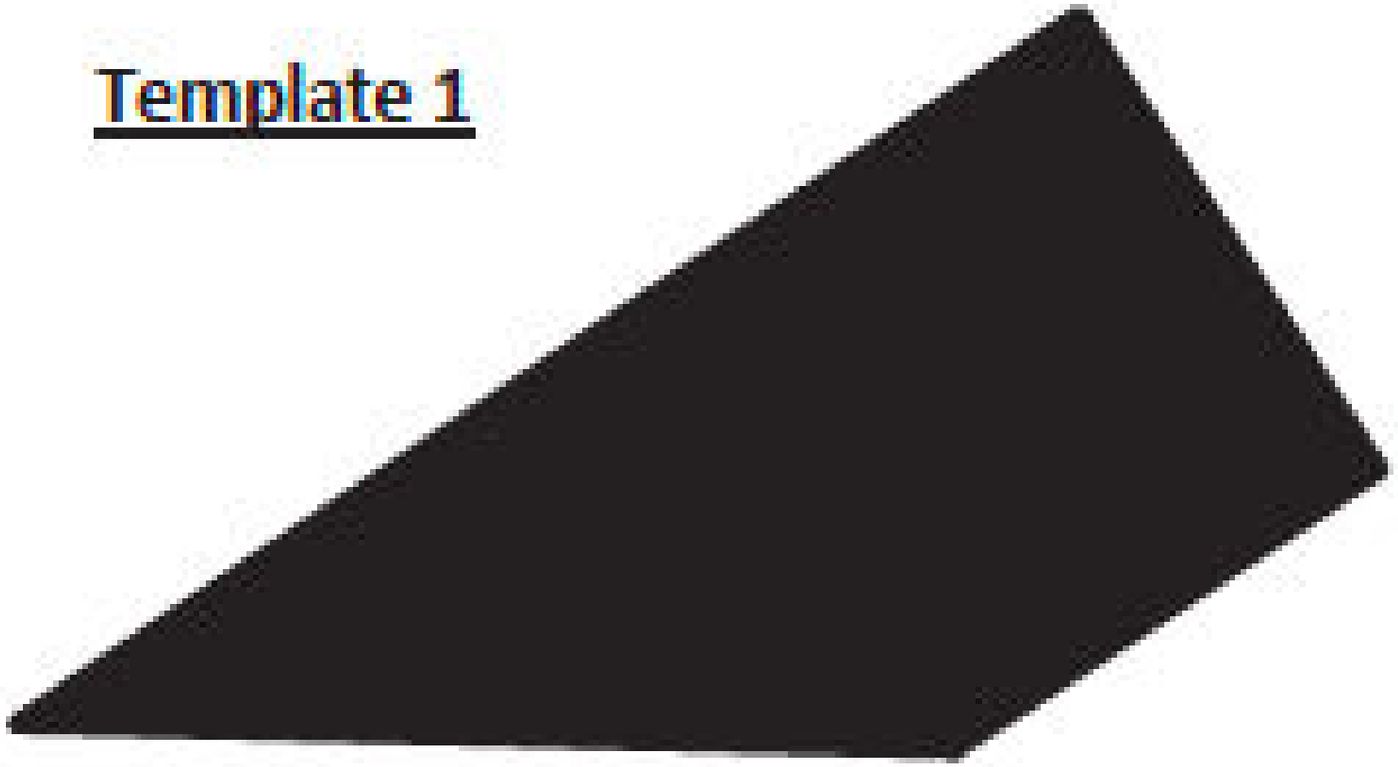
Possible responses:

- Polygon
- Quadrilateral
- Trapezoid
- Four sides
- One pair of parallel sides
- Two right angles
- Two equal sides

Is this angle greater or less than a right angle? How do you know?

Concept Development

Let’s talk about how to describe the angles that are not right angles.



Is this angle greater or less than a right angle? How do you know?

Possible responses:

- Polygon
- Quadrilateral
- Trapezoid
- Four sides
- One pair of parallel sides
- Two right angles
- Two equal sides
- 1 angle greater than a right angle

Concept Development

Draw a shape with one angle that is greater than a right angle.

Draw a figure with 2 right angles.

What tool or tools can we use to help us draw a shape with 2 right angles?

Concept Development

Draw a shape with the following attributes:

- Quadrilateral
- 2 equal sides
- 1 pair of parallel sides

What tool or tools can we use to help us draw a shape with those attributes?

Concept Development

Work with a partner to figure out whether or not you can draw a quadrilateral with more than 4 angles. What do you think?

Concept Development

Part 2: Polygon game

Game rules:

- Place the cards facedown
- Pick one card from each letter, A, B, and C
- Flip over the cards you chose. Write down the card descriptions
- Use the appropriate tools (ruler and/or right angle tool) to draw the shape on your whiteboard or paper. If the shape is not possible, list the reasons why it is not.

Template 2 Front

has at least 1 angle **greater than** a right angle	is a quadrilateral	has all equal sides (label side lengths)
has at least 1 angle **less than** a right angle	is a trapezoid	has at least 2 equal sides (label side lengths)
has at least 1 right angle	is a hexagon	has at least 1 set of parallel sides
has more than 4 angles	is a parallelogram	has no parallel sides

Template 2 Back

A	B	C
A	B	C
A	B	C
A	B	C

Problem Set (P 88)

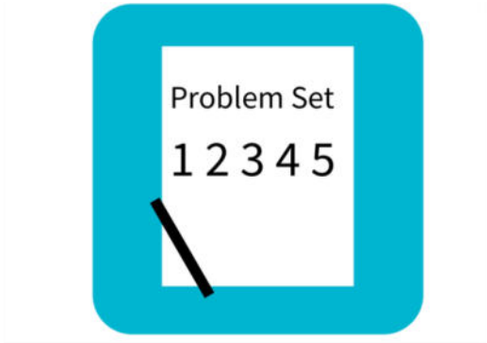
Name _____ Date _____

Use a ruler and a right angle tool to help you draw the figures with the attributes given below.

1. Draw a triangle with 1 right angle.

2. Draw a quadrilateral with 4 right angles and sides that are all 2 inches long.

3. Draw a quadrilateral with at least 1 set of parallel sides. Trace the parallel sides green.



Problem Set

4. Draw a pentagon with at least 2 equal sides. Label the 2 equal side lengths of your shape.

5. Draw a hexagon with at least 2 equal sides. Label the 2 equal side lengths of your shape.

6. Sam says that he drew a polygon with 2 sides and 2 angles. Can Sam be correct? Use pictures to help you explain your answer.

Debrief

- Besides *quadrilateral*, what is another name for the shape you drew for Problem 3? How can it be that so many names describe our shape?
- Which shape was most difficult to draw precisely? Why?
- Share your ideas about Problem 6. How did he concept development help you answer it?

Exit Ticket (3 minutes)

Name _____ Date _____

Use a ruler and a right angle tool to help you draw a shape that matches the attributes of Jeanette's shape. Label your drawing to explain your thinking.

Jeanette says her shape has 4 right angles and 2 sets of parallel sides. It is not a regular quadrilateral.