Title: Protector of Polygon Place

# Exploration of basic geometry and two dimensional shapes

**Brief Overview:**

This four-day lesson takes students through a mystery in which they will use the knowledge of geometry to discover the hero of Polygon Place. Students will learn to identify and categorize angles, triangles, quadrilaterals and other polygons through their use of various manipulatives including pattern blocks, tangrams, and pre-cut shapes. Students use their problem solving skills to determine the hero of Polygon Place by the end of day four.

**NCTM Content Standard/National Science Education Standard**:

- Identify, compare and analyze attributes of two-dimensional shapes and develop vocabulary to describe the attributes.
- Classify two-dimensional shapes according to their properties and develop definitions of classes of shapes such as triangles and quadrilaterals.

**Grade/Level:**

Grade 3

**Duration/Length:**

Four days (60 min.) each day

**Student Outcomes:**

Students will:

- Define, identify and compare right, acute and obtuse angles.
- Define and identify polygons.
- Compare polygons according to their angles, sides.
- Define, identify and compare equilateral, isosceles and scalene triangles.
- Define, identify and compare quadrilaterals such as trapezoid, parallelograms, rectangle, square and rhombus.

**Materials and Resources:**

Day 1

- Two coffee straws per student
- One inch length of pipe cleaner per student
- Ruler

Day 2

- Pattern blocks, one set per group
- Pre-cut polygon shapes, one per group

Day 3

- Pre-cut triangles shapes, one per group

Day 4

- Tangrams, one set per pair

**Development/Procedures:**

## Lesson 1: Angles

**Preassessment:**

Place teacher- directed matching activity on the overhead to review basic geometry concepts. (Student Resource Sheet 1. Answers may be found on Teacher Resource Sheet 1.) Distribute the handout to students. Review vocabulary orally. Call on students to match vocabulary with their corresponding definitions and pictures.

**Launch:**

Ask the students if they have ever read a mystery. Engage in a short discussion allowing students to share their experiences. Hook: We will solve a mystery this week using our knowledge of geometry. Read the mystery (on Teacher Resource Sheet 2) and reveal the first clue (on Teacher Resource Sheet 3).

**Teacher Facilitation/ Student Application:**

Teacher states objective for the day. (Students will be able to classify angles according to their size.)

Pass out coffee straws and pipe cleaners and explain that the straws will stand for line segments and the pipe cleaners will represent vertices. Model inserting the small pipe cleaner piece into the end of one straw and then inserting the other end of the straw to make an angle. Allow 5 min. for students to explore.

Pass out Student Angle Worksheet. (Student Resource Sheet 2)

Instruct students to create a 90º, right angle next to number one. Discuss other ways to show a right angle by rotating the angle. Have students record on student worksheet two other 90º, right angles with a ruler.

Repeat the steps above with the acute and obtuse angle and compare their attributes to the right angle. See Teacher Resource Sheet 4 for answers.

**Embedded Assessment:**

Pass out Student Assessment Worksheet (Student Resource Sheet 3). Instruct students to independently complete numbers 1, 2 and 3. Check answers with a partner, and complete the scavenger hunt at the bottom of the sheet. Answers may be found on Teacher Resource Sheet 5.

**Reteaching/ Extension:**

Pass out BCR (Student Resource Sheet 4) for students to complete independently and have students discuss answers. Answer key is on Teacher Resource Sheets 6, 7, and 8.

Show a transparency of "Who is the Protector of Polygon Place?" (Teacher Resource Sheet 9). Refer to answers on Teacher Resource Sheet 10. Engage students in a short discussion about the mystery clue and decide as a group who should be eliminated from the chart as the possible hero.

## Lesson 2: Polygons

**Preassessment:** Review the clue from day one and the reasons that the shapes were eliminated. Discuss what clue would help eliminate more shapes. Make predictions about who they think the hero is.

**Launch**: Students will identify the definition of a polygon through a yes/ no activity, "What Makes a Polygon?" Place a copy of Teacher Resource Sheet 11 on the overhead. Pre-cut the transparency shapes on Teacher Resource Sheet 12 to use on the overhead. Answer key may be found on Teacher Resource Sheet 13.

Place the shapes on the overhead based on the category Open/ Closed. Place the closed shapes under the yes column and the open shapes under the no column. Ask students to determine the rule. (Polygons are closed shapes.) Repeat the same process for the curved lined shapes and the line-segment shapes, (Teacher Resource Sheet 14) and the shapes that meet at their endpoints and ones that do not meet at their endpoints (Teacher Resource Sheet 16). Answer key may be found on Teacher Resource Sheets 15 and 17.

Goal: Polygon is a closed plane figure formed from line segments that meet only at their endpoints.

**Teacher Facilitation:** Direct students into a discussion about the attributes of a trapezoid from a set of pattern blocks on the overhead. Discuss the number of vertices, sides, and the type of angles and lengths of sides. Repeat steps for a square.

**Student Facilitation:** Pass out student worksheet (Student Resource Sheet 5) and a set of pattern blocks per group. Have groups of students work together to determine the

attributes of each shape. Discuss the answers as a whole group. Answer key is on Teacher Resource Sheet 18.

**Embedded Assessment**: Pass out pre-cut polygons to groups of students (Student Resource Sheet 6). Have students sort the polygons by number of sides (number of vertices), shapes with a right angle, shapes with an obtuse angle, similar angles, lengths of sides. Answers may be found on Teacher Resource Sheet 19.

**Reteaching/ Extension**: Pass out BCR (Student Resource Sheet 7) for students to complete independently and have students discuss answers. Answers may be found on Teacher Resource Sheet 20.

Reveal Day 2 Clue (Teacher Resource Sheet 3) and eliminate the polygons that do not meet the criteria. Show transparency of Teacher Resource Sheet 10. Answer key may be found on Teacher Resource Sheet 21.

## Lesson 3: Triangles

**Preassessment:** Review the clue from day one and two and discuss the reasons that the shapes were eliminated. Discuss what clue would help eliminate more shapes. Make predictions about who they think the hero is.

**Launch**: Have students draw a triangle of their choosing in their notebooks. Engage students in a discussion about the different angles and lengths of sides or engage students in a sorting activity to review the similarities and differences using the knowledge they learned in the previous lessons.

**Teacher Facilitation**: Students will learn the attributes of an equilateral, isosceles, and scalene triangle.

Display the Venn Diagram (Teacher Resource Sheet 22) on the overhead. Facilitate a discussion comparing the attributes of an equilateral and a scalene triangle. When students have named all relevant attributes, introduce the names of each category (equilateral and scalene). Answer key is on Teacher Resource Sheet 23.

**Student Facilitation**:
Have students draw other equilateral and scalene triangles by experimenting with side length and angle size. Discover that all equilateral triangles are *similar* (figures that have the same shape, but not the same size) Discover that scalene triangles may or may not be similar.

**Teacher/ Student Facilitation:**
Draw an isosceles triangle on the overhead and ask students to name the category into which it fits. (It does not fit in either.) It is not an equilateral triangle because all of the

sides are not the same and it is not a scalene triangle because two of the sides are the same. Introduce the new category of isosceles triangles and discuss its attributes.

**Embedded Assessment**: Distribute bags of pre-cut triangles (Student Resource Sheet 8) to groups of 2-4 students and instruct students to group them into groups of equilateral, scalene and isosceles triangles. Isolate the equilateral triangles for further discussion. Discuss the similarities and differences. Repeat this for the scalene and isosceles triangle groups. For further investigation with scalene and isosceles triangles have students sort according to angle size.

**Extension/ Reteaching**: Pass out BCR (Student Resource Sheet 9) for students to complete independently and have students discuss answers found on Teacher Resource Sheet 24.

Reveal Day 3 Clue on Teacher Resource Sheet 3 and eliminate the polygons that do not meet the criteria. Use a transparency of Teacher Resource Sheet 21. Answers can be found on Teacher Resource Sheet 25.

## Lesson 4: Quadrilaterals

**Preassessment**: Review the previous clues and discuss the reasons that the shapes were eliminated. Discuss what clue would help eliminate more shapes. Make predictions about who they think the hero is.

**Launch**: Distribute a set of Tangrams (Student Resource Sheet 11) to a group of 2-4 students. Allow 5 minutes for exploration. Instruct students to sort the shapes into triangles and quadrilaterals.

**Teacher/ Student Facilitation**: Students will discover the properties of quadrilaterals by manipulating tangrams.

Explore creating shapes using the following questions and discuss the properties of each created shape (Student Resource Sheet 10):

- Can you put two triangles together to make a square?
- Can you put three triangles together to make a square?
- Can you make a rectangle?
- Can you make a parallelogram without right angles?
- Can you make a trapezoid

* Discuss a rhombus. (Note- a rhombus cannot be made with tangrams)

Answer key can be found on Teacher Resource Sheet 26.

**Embedded Assessment**: Have students complete the polygon tree in a group (Student Resource Sheet 12). Discuss the answers that can be found on Teacher Resource Sheet 27.

**Extension/ Reteaching**: Pass out BCR (Teacher Resource Sheet 13) for students to complete independently and have students discuss answers that can be found on teacher Resource Sheet 28.

Reveal Day 4 Clue (Teacher Resource Sheet 3) and eliminate the final polygons that do not meet the criteria revealing the real hero. Show a transparency of Teacher Resource Sheet 25. Read the end of the story. Answers can be found on Teacher Resource Sheet 29.

**Summative Assessment**:

Students will use information from their daily discussions about the clues to create a newspaper article where they step-by step explain their geometric reasoning that lead them to uncover the hero of the story. Student should include specific vocabulary acquired each day in their analysis (Student Resource Sheet 14). Answer key can be found on Teacher Resource Sheet 30.

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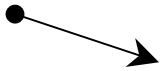
# Geometry Match

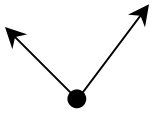
*Directions: Match the vocabulary word on the left with the picture and definition on the right.*

Line



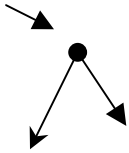
A part of a line that has one endpoint and extends in one direction

Line segment



Two rays that share an endpoint

Point

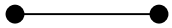


The point at which two line segments, lines, or rays meet to form an angle.

Ray

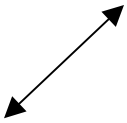
An exact location in space

Angle



A part of a line defined by two endpoints

Vertex



A straight path that extends in both directions.

# Geometry Match – Answer Key

*Directions: Match the vocabulary word on the left with the picture and definition on the right.*

Line

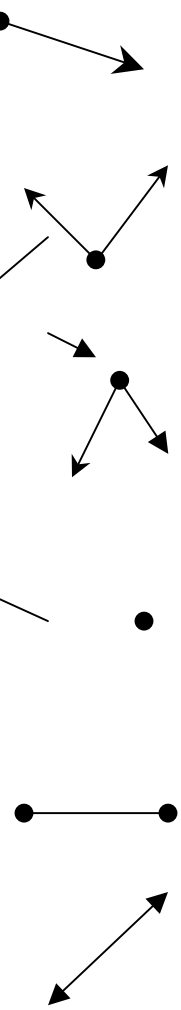
Line segment

Point

Ray

Angle

Vertex



A part of a line that has one endpoint and extends in one direction

Two rays that share an endpoint

The point at which two line segments, lines, or rays meet to form an angle.

An exact location in space

A part of a line defined by two endpoints

A straight path that extends in both directions.

Polygon Place

Polygon Place was a place where shapes big and small lived. Every kind of polygon was welcome to live in Polygon Place from the smallest triangle to the largest dodecagon. Everyone lived a peaceful and happy existence until two troublemakers from a nearby town decided to cause mischief.

Squiggle and Disjointed were two of the most notorious troublemakers in all of Geometry Land. Squiggle and Disjointed were two shapes that because of their poor character, never fully developed into proper polygons. Squiggle and Disjointed grew up hating Polygon Place and all of the polygons that lived so happily there. They made an evil plan to get their revenge on the town. They knew that only proper polygons were allowed to live in polygon place, so they thought of ways to change the happy polygons living in there so that they were polygons no longer. Then the altered shapes would no longer be welcome in Polygon Place. Squiggle and Disjointed thought this was an excellent way to get their revenge.

Having the polygons changed was easy. On the first night, Squiggle and Disjointed snuck into Polygon Place and bent some of the line segments on the polygon citizens. When the town awoke the next day, many shapes had curved and bent sides. Since a polygon is made up of only line segments, all of the shapes with bent and curved lines had to leave the town. The curved and bent shapes were sad indeed. Squiggle and Disjointed were delighted with their success and decided to strike again the next night.

On the second night, Squiggle and Disjointed snuck into Polygon Place with a different plan. They were awfully tired from all the bending and curving they did the night before and thought it would be easier to just steal the line segments. So Squiggle and Disjointed attacked Polygon Place again and when the town awoke the next day they were dismayed to find that many shapes were left open because of a missing side. Because polygons have to be closed shapes, all of the shapes with missing sides were forced to leave Polygon Place. Again, Squiggle and Disjointed were tired from their nights work, but delighted with the outcome. They decided to attack one last time to take care of the rest of the polygons living in Polygon Place only they were too tired to bend or to steal any more line segments. This time they planned to stick shapes together at their vertices so that the shapes no longer met at their endpoints.

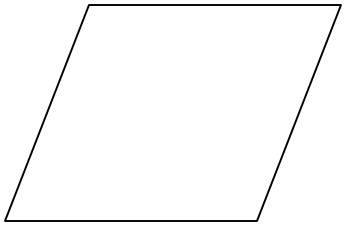
The bandits set out the third night with polygon glue and stuck all of the remaining shapes together at their vertices. Because polygons can only have line segments that meet at their endpoints, these altered shapes were no longer polygons and were forced to leave their town.

Now polygon place was empty. No triangles or quadrilaterals roamed the streets, no baby trapezoids or little pentagons could be found comparing their angles or line segments and no adult squares or rectangles were about discussing their parallel lines and right angles. Polygon place was completely deserted except for one single shape. This shape avoided the attacks by disguising itself each night. It had seen it all and knew who the bandits were and set out to put things right.

On the next three nights this lone polygon traveled from town to town to fix all of the ruined polygons. Soon the curved and bent lines were straightened out, the missing line segments were returned and the glued vertices were separated. Then the polygon caught up with Squiggle and Disjointed and took them to jail.

When these shapes awoke and found themselves polygons again, they hurriedly moved back into Polygon Place. When the town was assembled again, a meeting was held to honor the hero that fixed the town and brought the criminals to justice. Square stepped forward and claimed it was the town hero. Trapezoid then yelled that it had seen square being unbent with the rest of the bent and curved shapes. Then Hexagon claimed to be the hero, followed by Triangle, Pentagon and Rhombus. This was no good. The town decided to investigate the matter and set up a team to gather all the facts to determine the real town hero. Since the hero did his work at night, there were only a few witnesses who reported seeing anything. Here is what they said.

- The polygon had two acute angles.
- The polygon had less than five angles.
- The polygon had all equal sides.
- The polygon is a parallelogram.

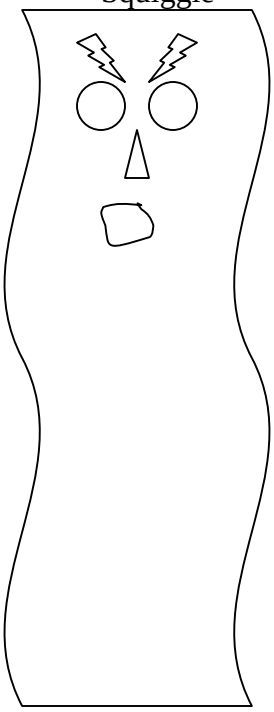


Can you help Polygon Place find its hero?

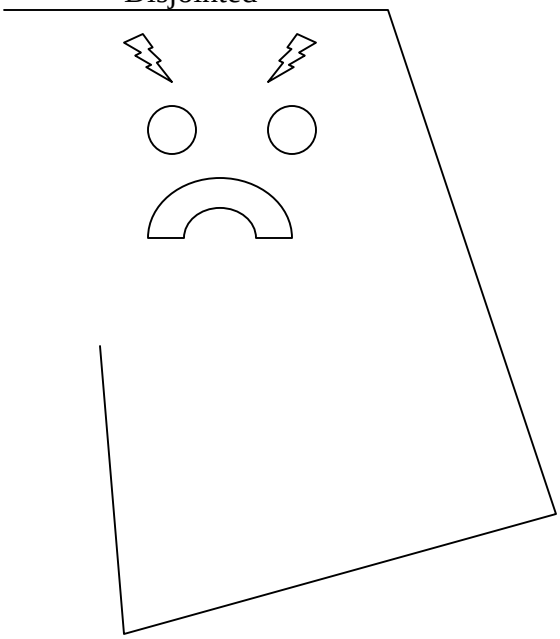
(Read at end of the lesson.)

With your help, Polygon Place's team of investigators determined that the town hero was the rhombus. The rhombus has two acute angles, four angles, and equal sides and is a parallelogram. The town was thrilled. They decided to reward Rhombus with a metal for bravery. They renamed the town square, town parallelogram and erected a statue of the brave Rhombus to remember the triumph of good over evil. If you are wondering what ever became of Squiggle and Disjointed, it is said that they are still trying to straighten themselves out and become regular polygons.

Squiggle



Disjointed



# Protector of Polygon Place Clues

Lesson 1: The polygon had two acute angles.

Lesson 2: The polygon had less than five angles.

Lesson 3: The polygon had all equal sides.

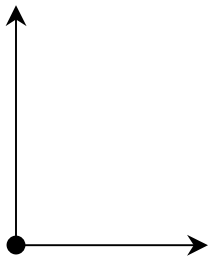
Lesson 4: The polygon is a parallelogram.

***Angle Worksheet***

*Directions: Name the angles according to their size. Using your ruler, create three different angles that match each description.*

Create your own below.

1.



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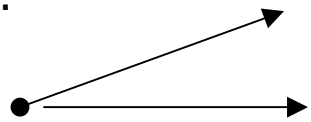
2.



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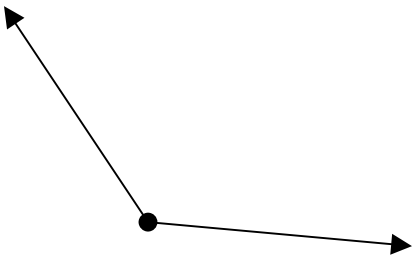
3.



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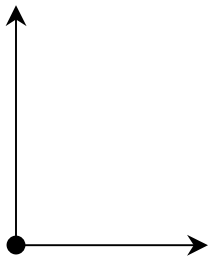
***Angle Worksheet (Answers)***

*Directions: Name the angles according to their size. Using your ruler, create three different angles that match each description.*

Create your own below.

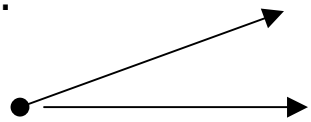
1.



* Angles must be right angles.

<u>Right Angle</u>

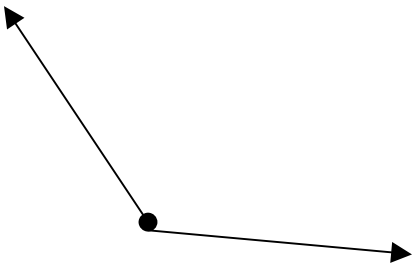
2.



* Accept all angles less than 90º

<u>Acute Angle</u>

3.

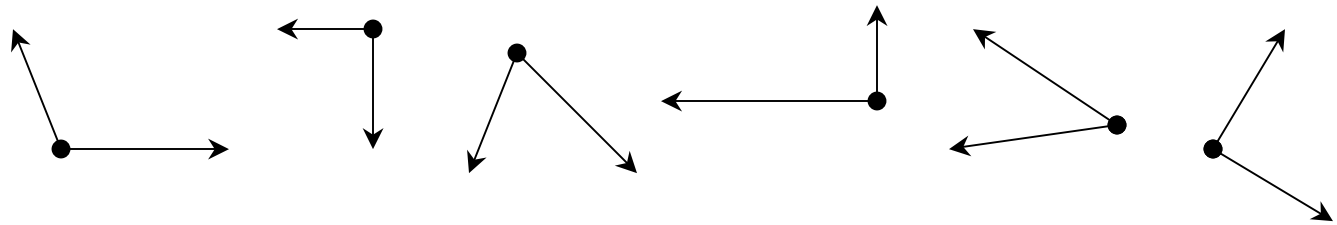


* Accept all angles greater than 90º and less than 180º. (Note: angles greater than 180º and less than 360º are “Reflex Angles”)

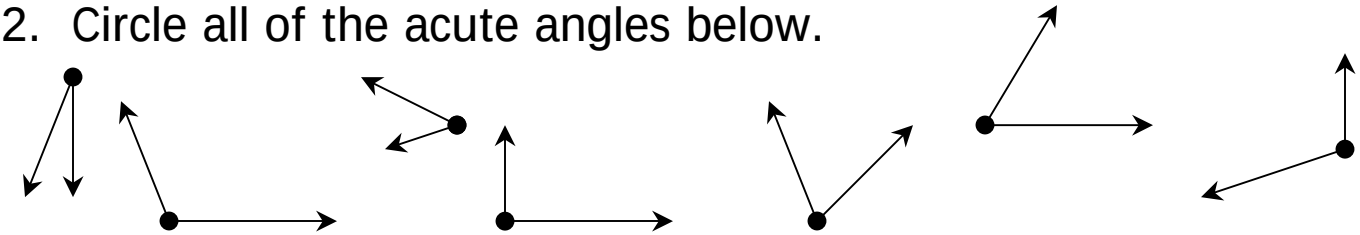
<u>Obtuse Angle</u>

***Angle Assessment Worksheet***

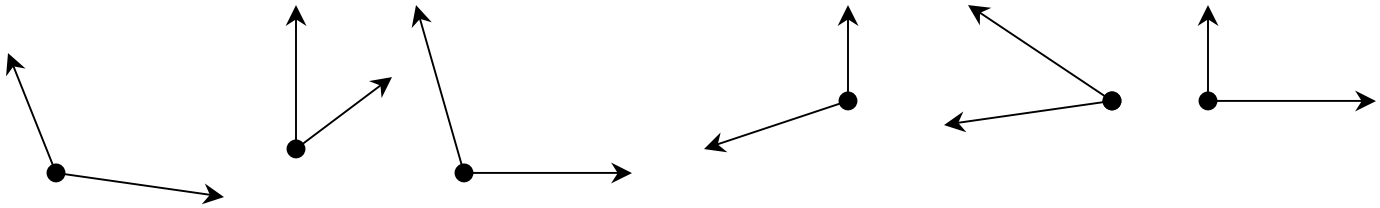
1. Circle all of the 90º, right angles below.



2. Circle all of the acute angles below.



3. Circle all of the obtuse angles below.

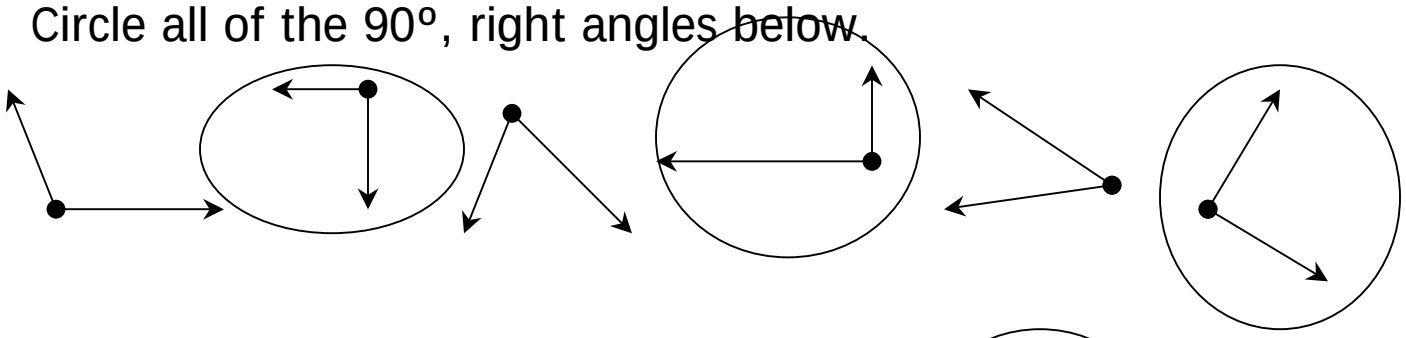


Now look for examples of right, acute and obtuse angles in the classroom. List your findings below.

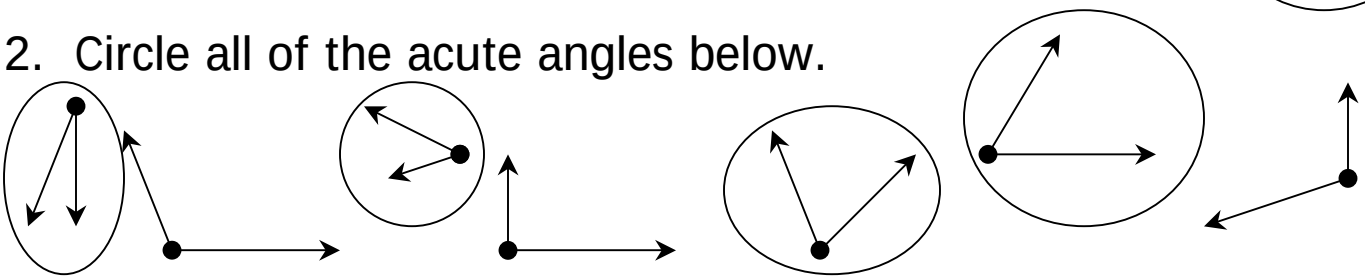
| **Right Angles** | ***Acute Angles*** | Obtuse Angles |
|---|---|---|
| | | |

***Angle Assessment Worksheet (Answers)***

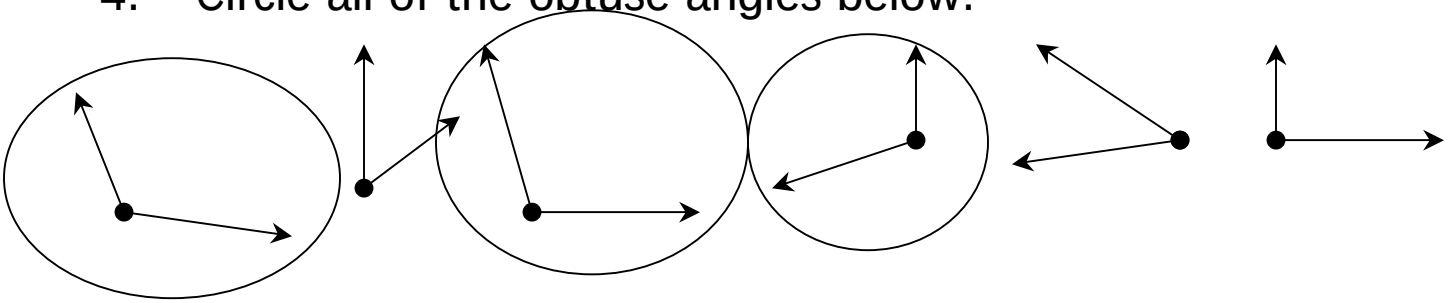
1. Circle all of the 90º, right angles below.



2. Circle all of the acute angles below.



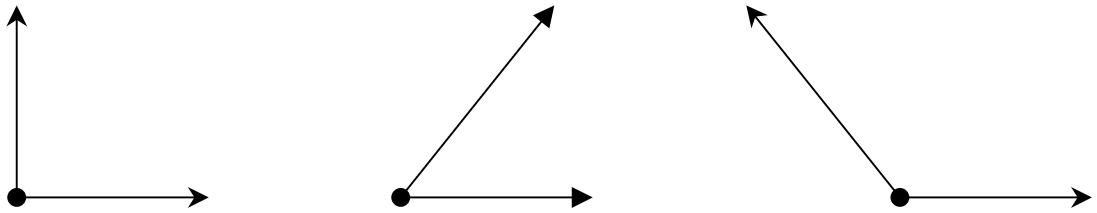
4. Circle all of the obtuse angles below.



Now look for examples of right, acute and obtuse angles in the classroom. List your findings below.

| **Right Angles** | ***Acute Angles*** | Obtuse Angles |
|---|---|---|
| Answers will vary. | | |

## Brief Constructed Response



*Part A*

Circle the obtuse angle.

_____

*Part B*

Use what you know about geometry to explain why your answer is correct. Use number and/or words in your explanation.

_____

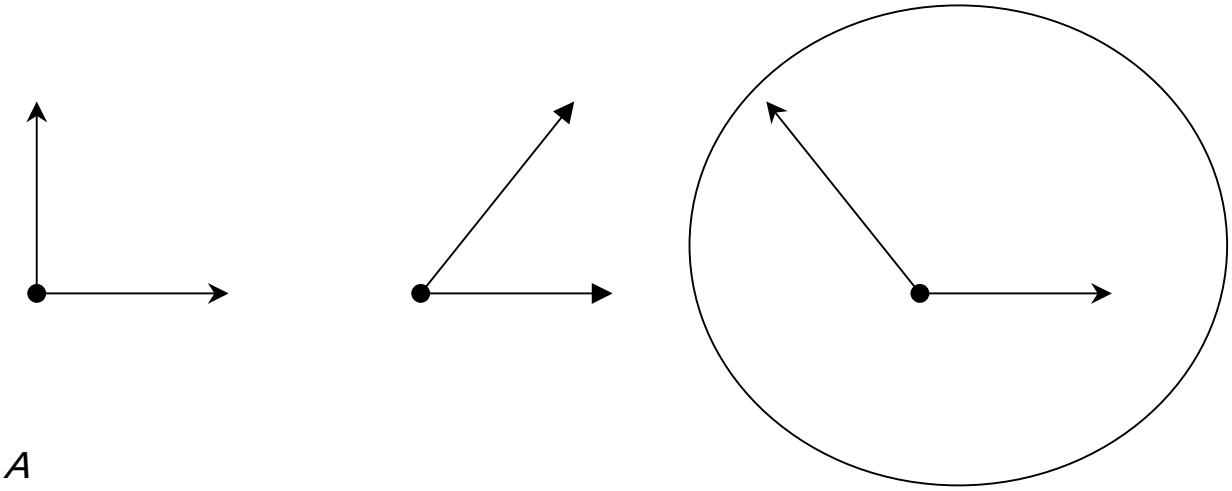
_____

_____

_____

_____

## Brief Constructed Response



*Part A*

Circle the obtuse angle.

_____

*Part B*

Use what you know about geometry to explain why your answer is correct. Use number and/or words in your explanation.

*Answers will vary but should include that an obtuse angle is one that is greater than 90 degrees.*

# MSA Brief Constructed Response "Kid Speak" Mathematics Rubric
# Grades 1 through 8

| Score | |
|---|---|
| **2** | **My answer shows I completely understood the problem and how to solve it:**<br><br>• **I used a very good, complete strategy to correctly solve the problem.**<br>• **I used my best math vocabulary to clearly explain what I did to solve the problem. My explanation was complete, well organized and logical.**<br>• **I applied what I know about math to correctly solve the problem.**<br>• **I used numbers, words, symbols or pictures (or a combination of them) to show how I solved the problem.** |
| **1** | **My answer shows I understood most of the problem and how to solve it:**<br><br>• **I used a strategy to find a solution that was partly correct.**<br>• **I used some math vocabulary and most of my reasons were correct to explain how I solved the problem. My explanation needed to be more complete, well organized or logical.**<br>• **I partly applied what I know about math to solve the problem.**<br>• **I tried to use numbers, words, symbols or pictures (or a combination of them) to show how I got my answer, but these may not have been completely correct.** |
| **0** | **My answer shows I didn't understand the problem and how to solve it:**<br><br>• **I wasn't able to use a good strategy to solve the problem.**<br>• **My strategy wasn't related to what was asked.**<br>• **I didn't apply what I know about math to solve the problem.**<br>• **I left the answer blank.** |

# MSA Mathematics BCR Rubric

*Grades 3 through 8*

**2 The response demonstrates a complete understanding and analysis of a problem.**

- Application of a reasonable strategy in the context of the problem is indicated.
- Explanation[1] of and/or justification[2] for the mathematical process(es) used to solve a problem are clear, developed, and logical.
- Connections and/or extensions made within mathematics or outside of mathematics are clear.
- Supportive information and/or numbers are provided as appropriate. [3]

**The response demonstrates a minimal understanding and analysis of a problem.**

- Partial application of a strategy in the context of the problem is indicated.
- Explanation[1] of and/or justification[2] for the mathematical process(es) used to solve a problem is partially developed, logically flawed, or missing.
- Connections and/or extensions made within mathematics or outside of mathematics are partial or overly general, or flawed.
- Supportive information and/or numbers may or may not be provided as appropriate. [3]

**0 The response is completely incorrect, irrelevant to the problem, or missing.** [4]

**Notes:**

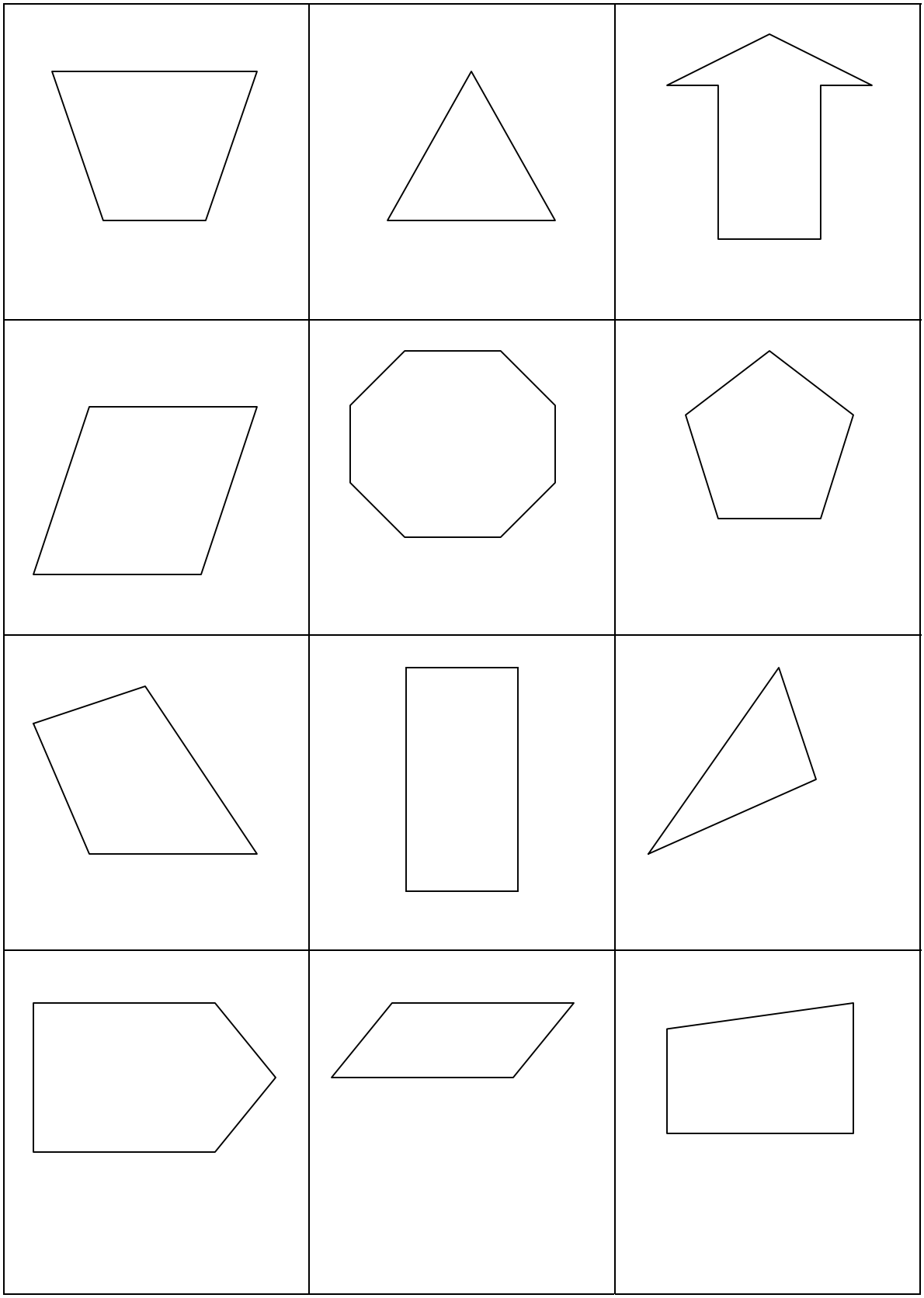
[1] **Explanation** refers to students' ability to communicate **how** they arrived at the solution for an item using the language of mathematics.

[2] **Justification** refers to students' ability to support the reasoning used to solve a problem, or to demonstrate **why** the solution is correct using mathematical concepts and principles.

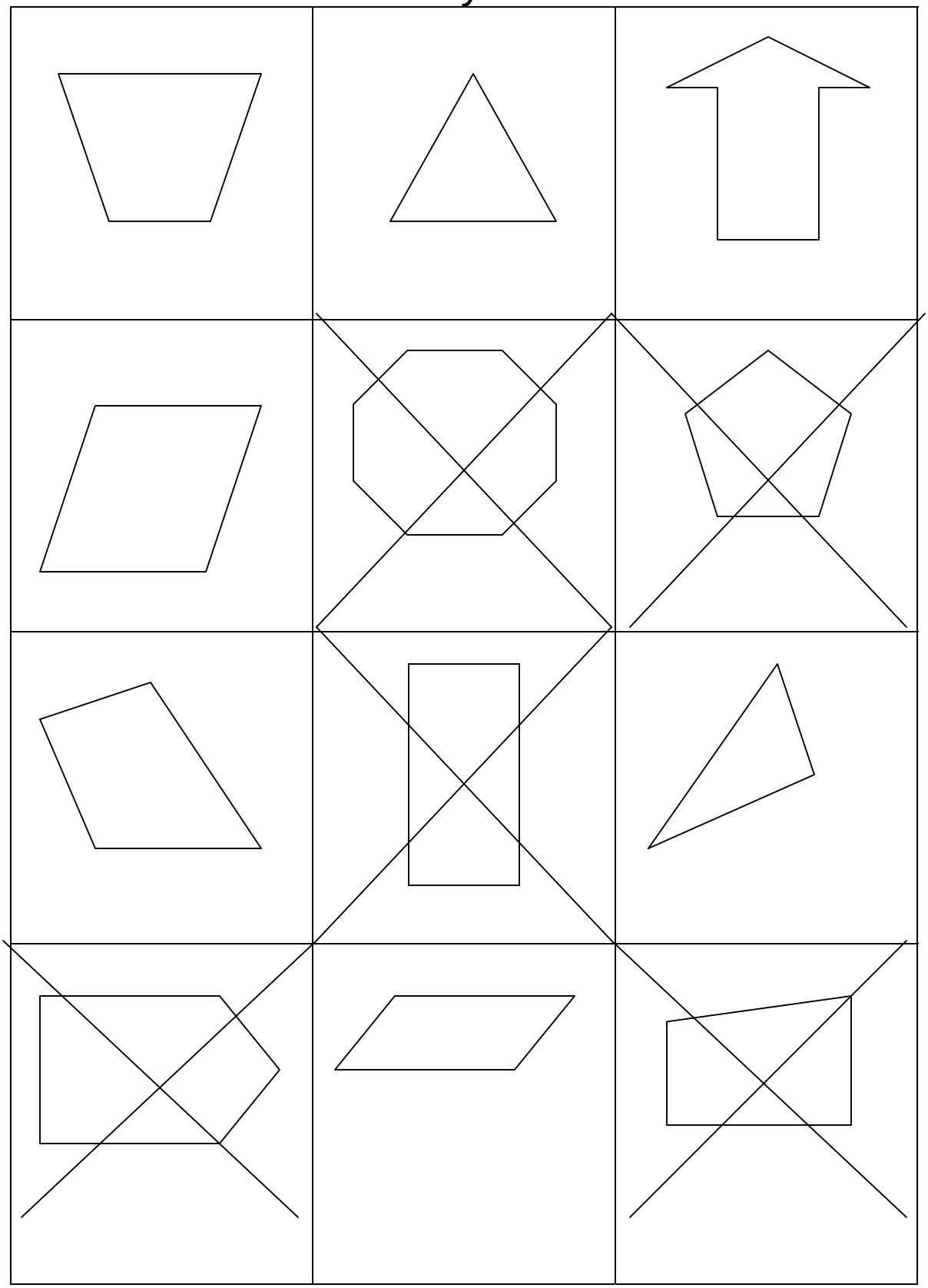
[3] Students need to complete rubric criteria for ***explanation, justification, connections*** and/or ***extensions*** as cued for in a given problem.

[4] Merely an exact copy or paraphrase of the problem will receive a score of "0".

# Who is the Protector of Polygon Place?



# Who is the Protector of Polygon Place?
## Day 1

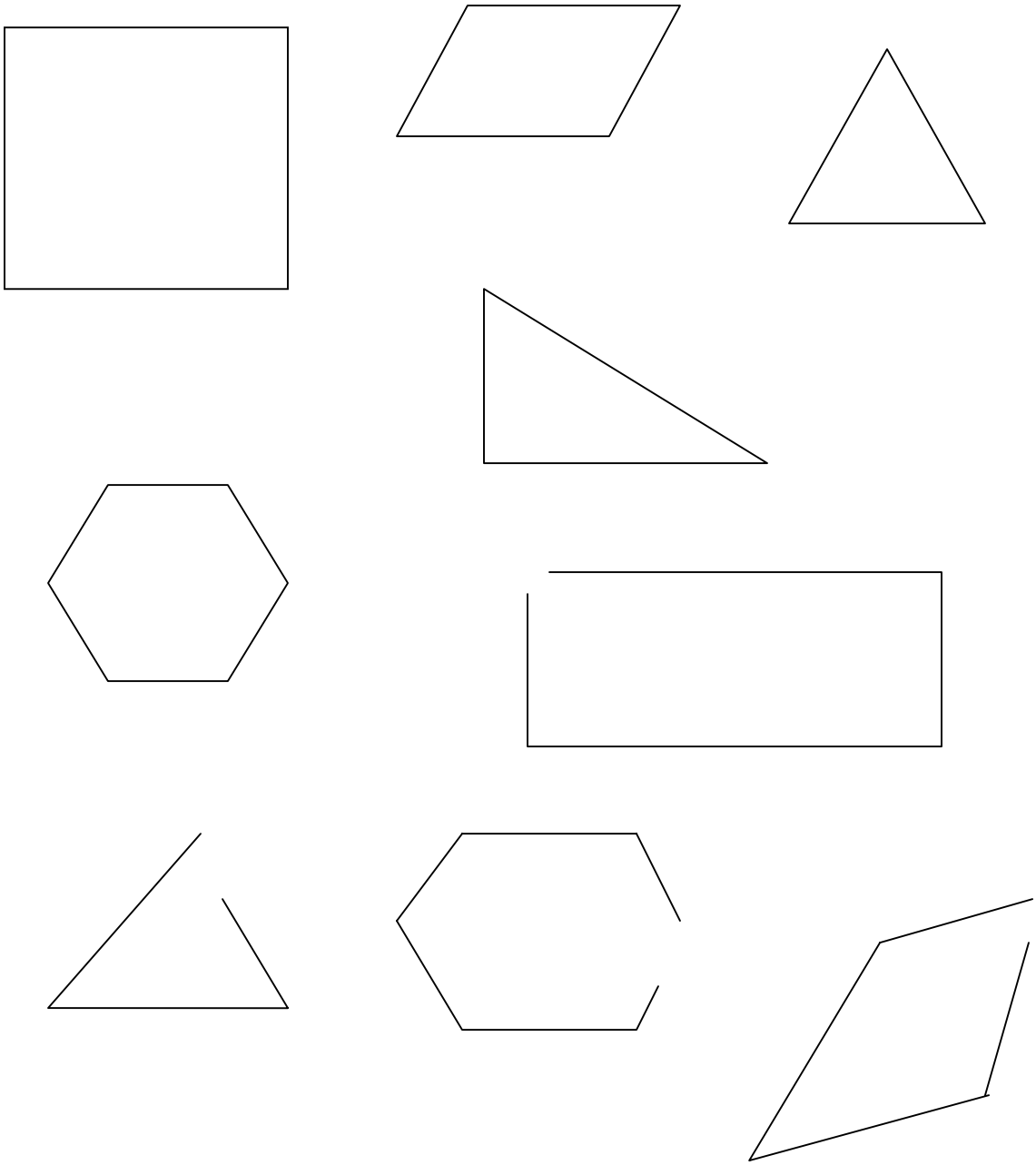


# What Makes a Polygon?

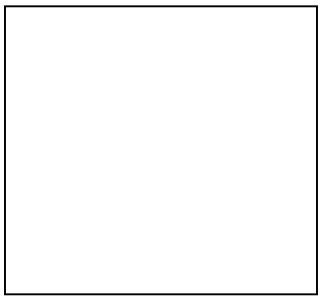
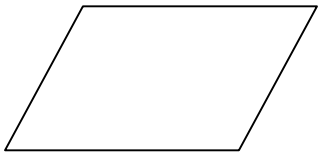
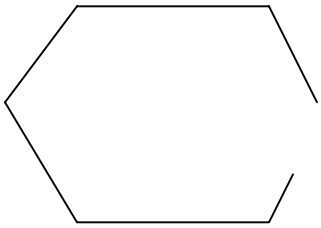
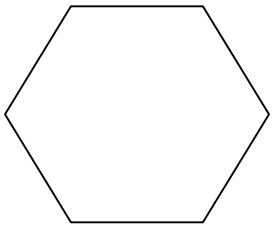
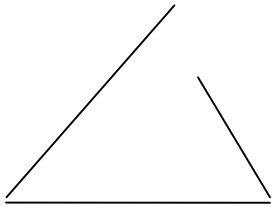
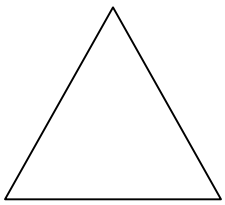
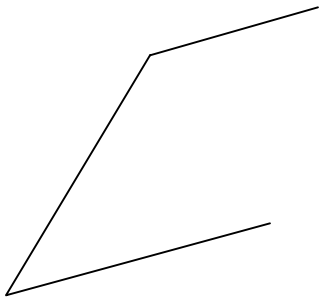
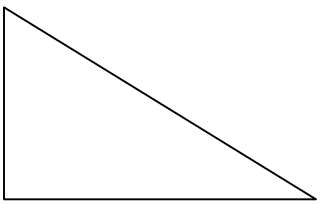
| Yes ☑ | No ⊘ |
| --- | --- |
| | |

# Shapes

**(Open /Closed)**

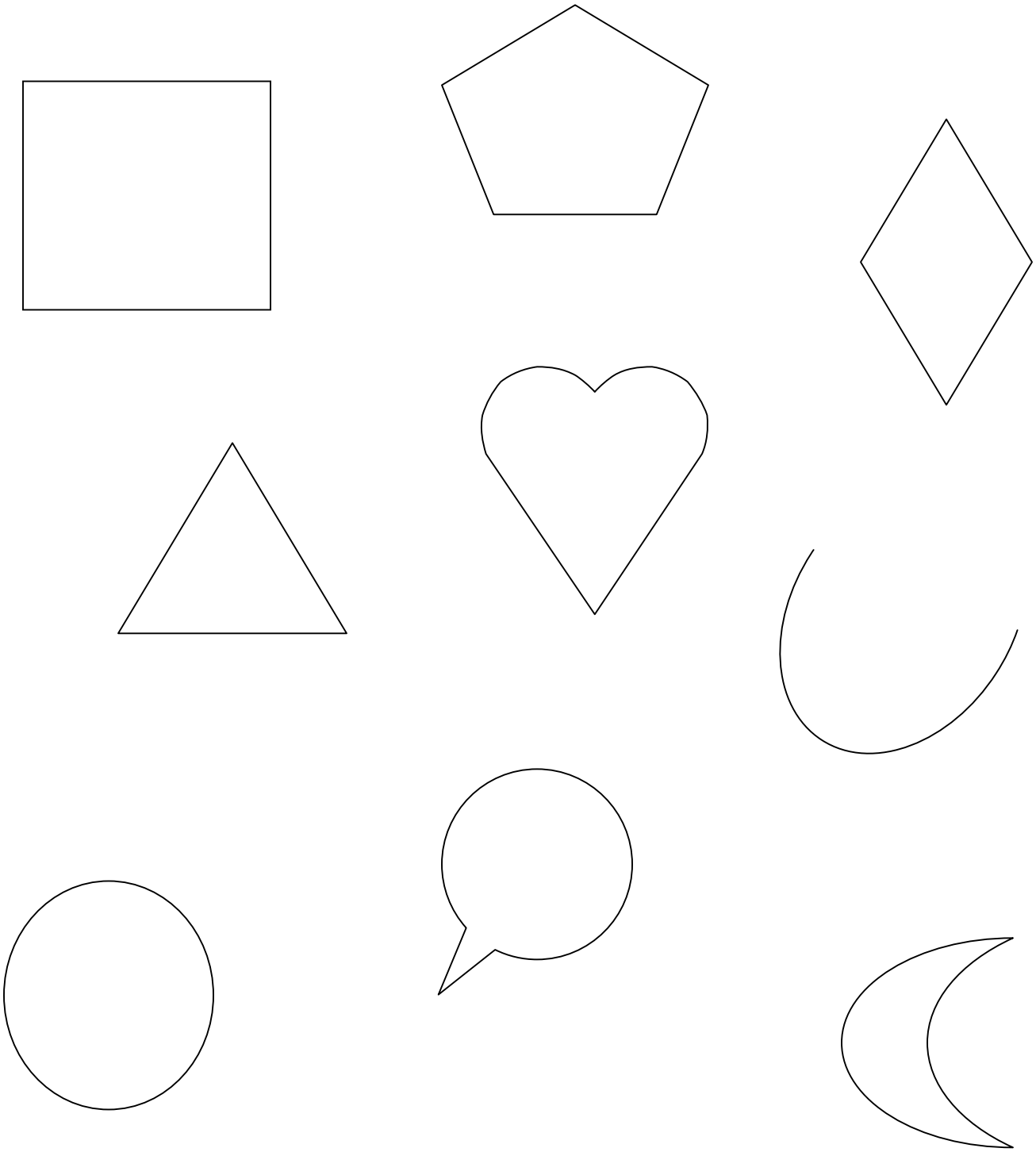


# What Makes a Polygon?

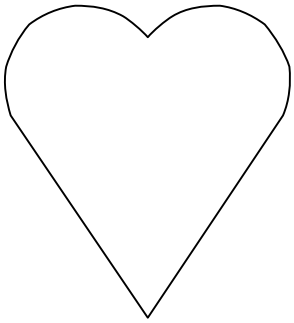
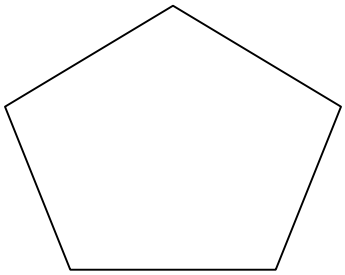
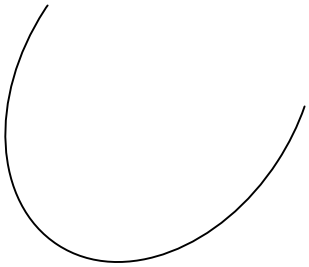
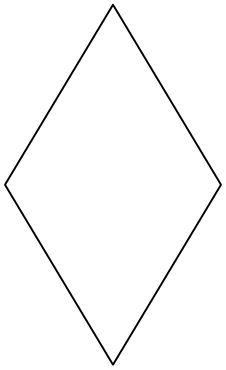
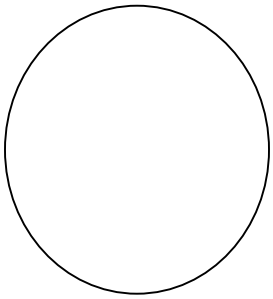
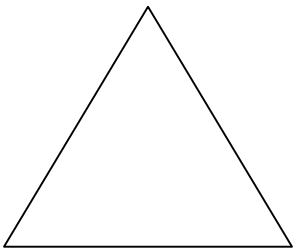
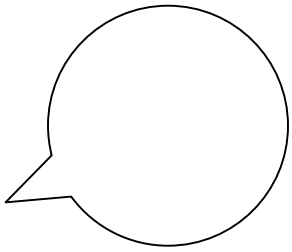
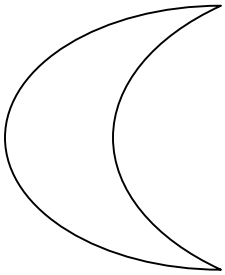
| Yes ☑ | No ⊘ |
|---|---|
|  | |
|  |  |
|  |  |
|  |  |
|  | |

# Shapes

## (Curved /Line Segment)

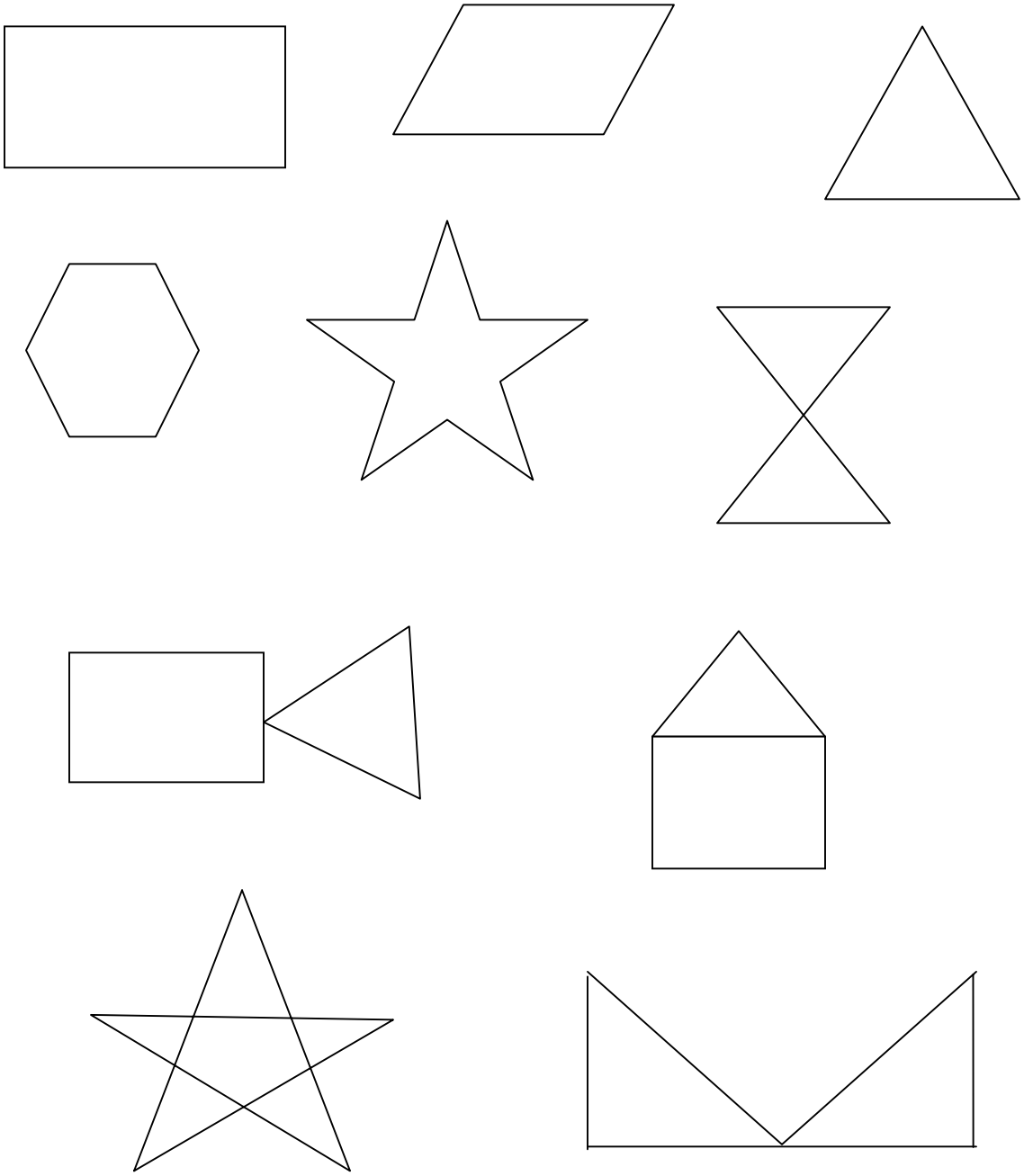


# What Makes a Polygon?

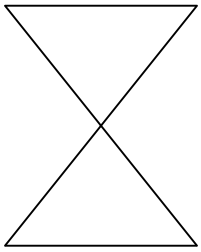
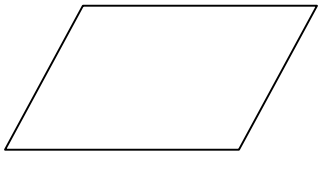
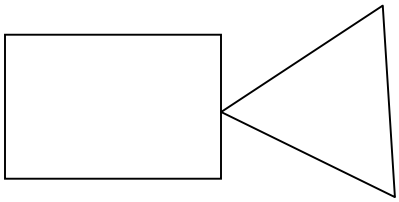
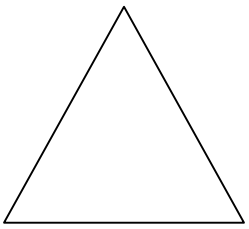
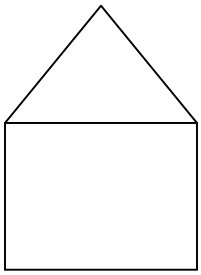
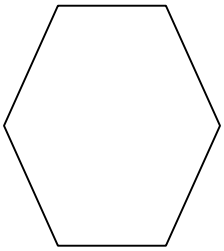
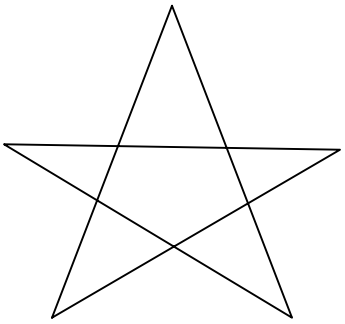
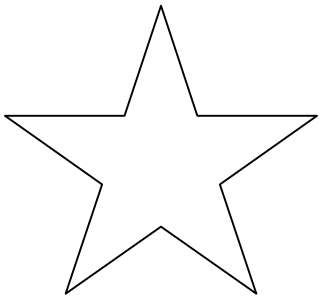
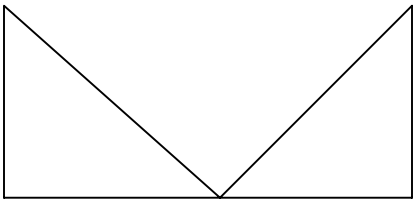
| Yes ☑ | No ⊘ |
|---|---|
| |  |
|  |  |
|  |  |
|  |  |
| |  |

# Shapes

## (Endpoints)

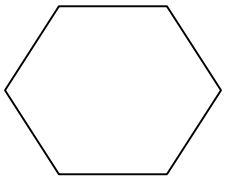
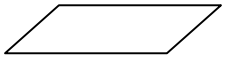
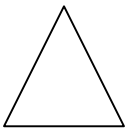


# What Makes a Polygon?

| Yes ☑ | No ⊘ |
|---|---|
| |  |
|  |  |
|  |  |
|  |  |
|  |  |

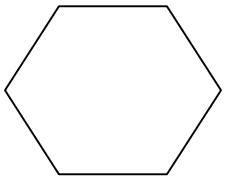
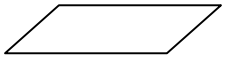
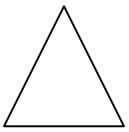
# All About Polygons

Directions: In your group, discuss the characteristics of each pattern block. Be ready to share with the class.

| **Polygon name** | Number of sides | Number of vertices | Describe the angles | Describe the lengths of the sides |
|---|---|---|---|---|
| Hexagon  | | | | |
| Parallelogram | | | | |
| Parallelogram  | | | | |
| Triangle  | | | | |

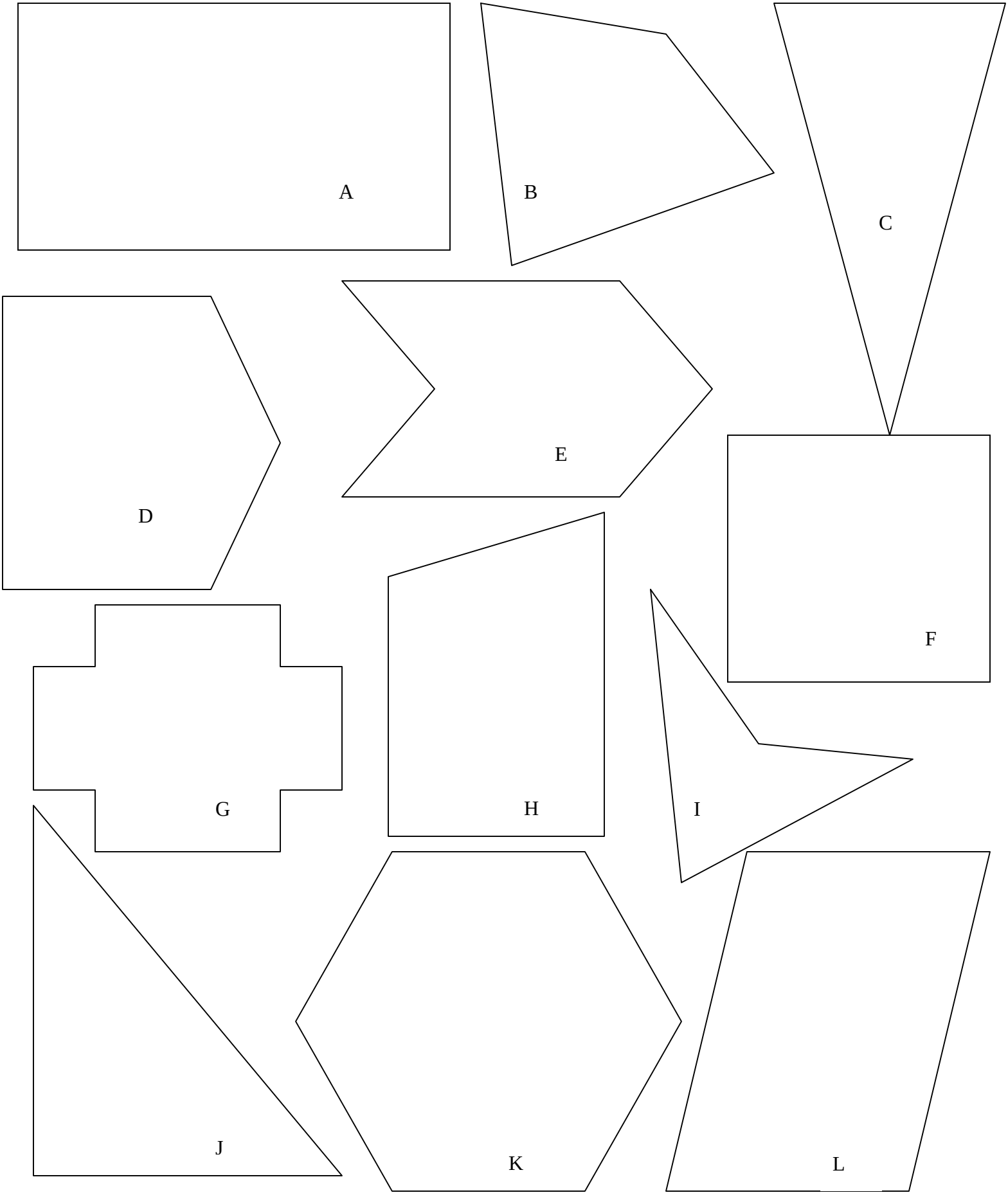
# All About Polygons (Answers)

Directions: In your group, discuss the characteristics of each pattern block. Be ready to share with the class.

| **Polygon name** | Number of sides | Number of vertices | Describe the angles | Describe the lengths of the sides |
|---|---|---|---|---|
| Hexagon  | 6 | 6 | All obtuse | All the same |
| Parallelogram | 4 | 4 | Two are obtuse<br><br>Two are acute | Opposite sides are equal in length |
| Parallelogram  | 4 | 4 | Two are obtuse<br><br>Two are acute | Opposite sides are equal in length |
| Triangle  | 3 | 3 | All are acute | All are equal |

Polygon Sort

Student Resource Sheet 6



Polygon Sort
(Lesson 2)

Sort by:

Number of Sides
- 3 sided: C, J
- 4 sided: A, B, F, H, L, I
- 5 sided: D
- 6 sided: K, E
- 12 sided: G

Type of angles
- All acute angles: C
- All right angles: A, F, G
- All obtuse angles: K
- Mixture of angles: B, D, E, G, H, I, L

*G and I have reflexive angles: angles that are greater than 180 degrees but less that 360 degrees.

Length of sides
- All the same sides: K, F
- At least 2 equal sides: A, C, D, E, F, G, L, K
- All different sides: B, I, H, J

---

Triangle Sort
(Lesson 3)

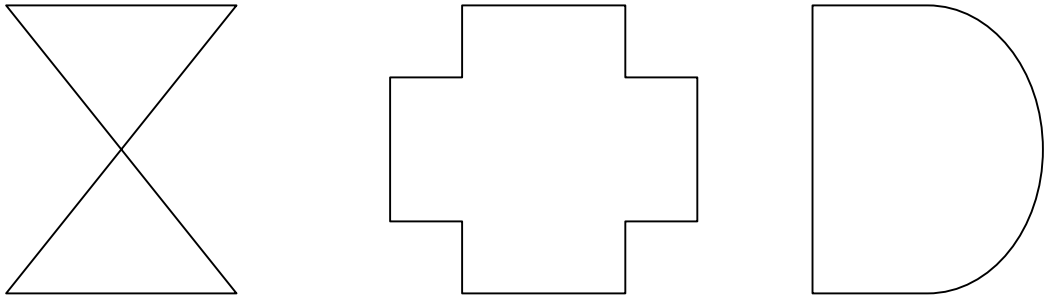
Sort by

Sides:
- Scalene Triangles: A, B, G, H, K
- Equilateral Triangles: E, I, J
- Isosceles Triangles: C, D, E, F, I, J

* Teacher note: equilateral triangles are also isosceles triangles

Angles:
- All acute: A, D, E, F, I, J
- One right angle: B, C, H
- One obtuse angle: G, K

## Brief Constructed Response



*Part A*

Circle the polygon.

_____

*Part B*

Use what you know about polygons to explain why your answer is correct. Use number and/or words in your explanation.

_____

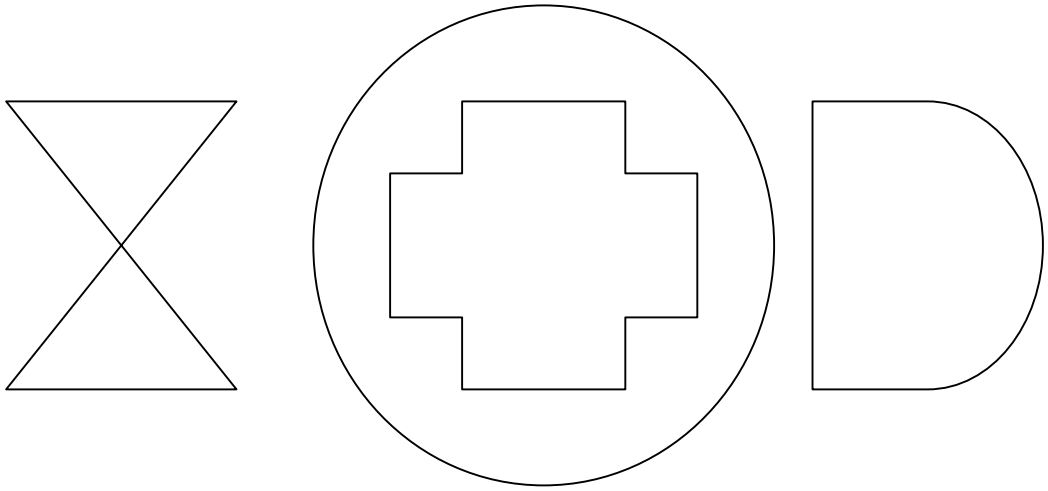
_____

_____

_____

_____

## Brief Constructed Response



*Part A*

Circle the polygon.

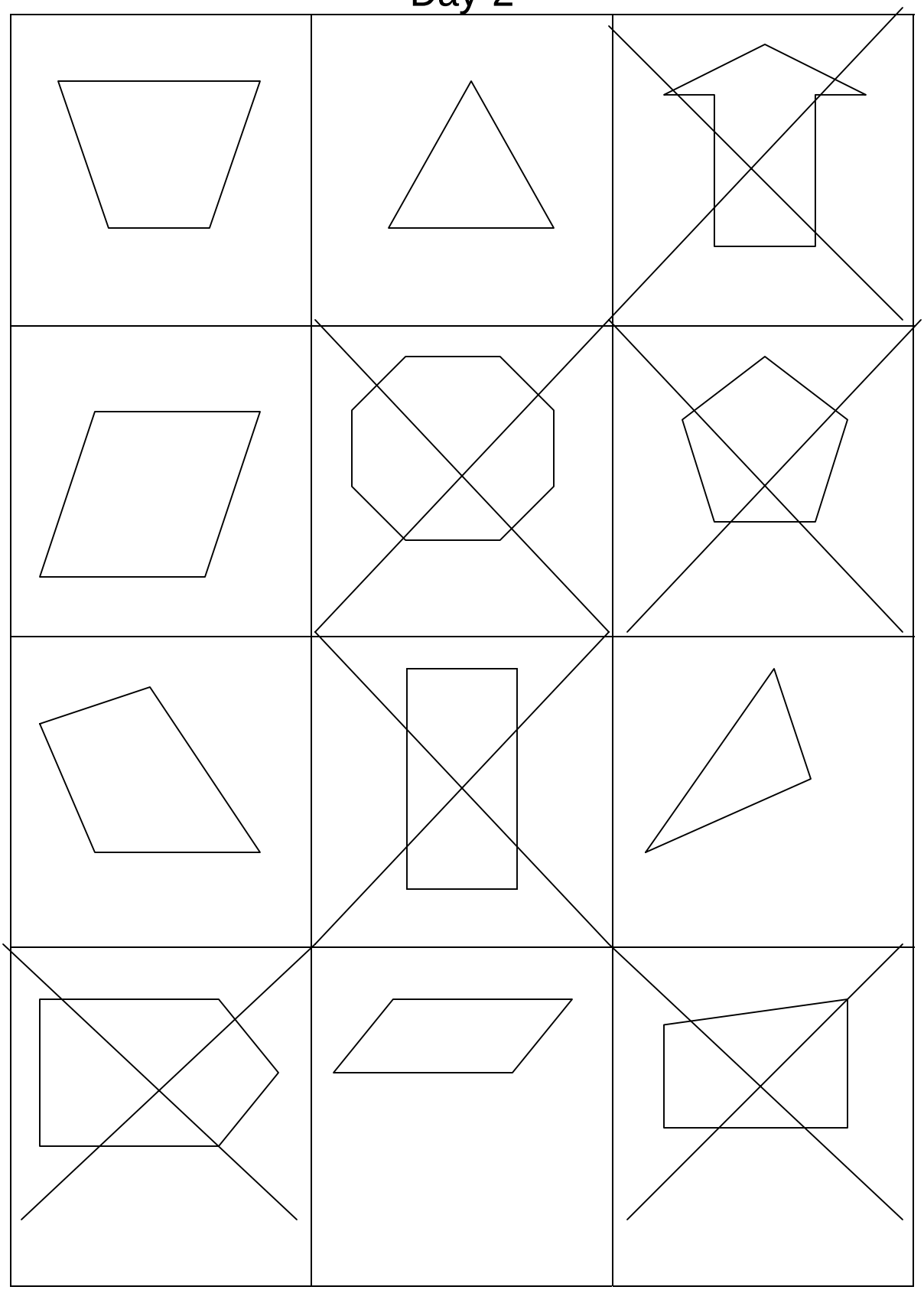
_____

*Part B*

Use what you know about polygons to explain why your answer is correct. Use number and/or words in your explanation.

*Answers will vary but should include that a polygon is made up of line segments and that the sides only meet at endpoints.*

# Who is the Protector of Polygon Place?
## Day 2



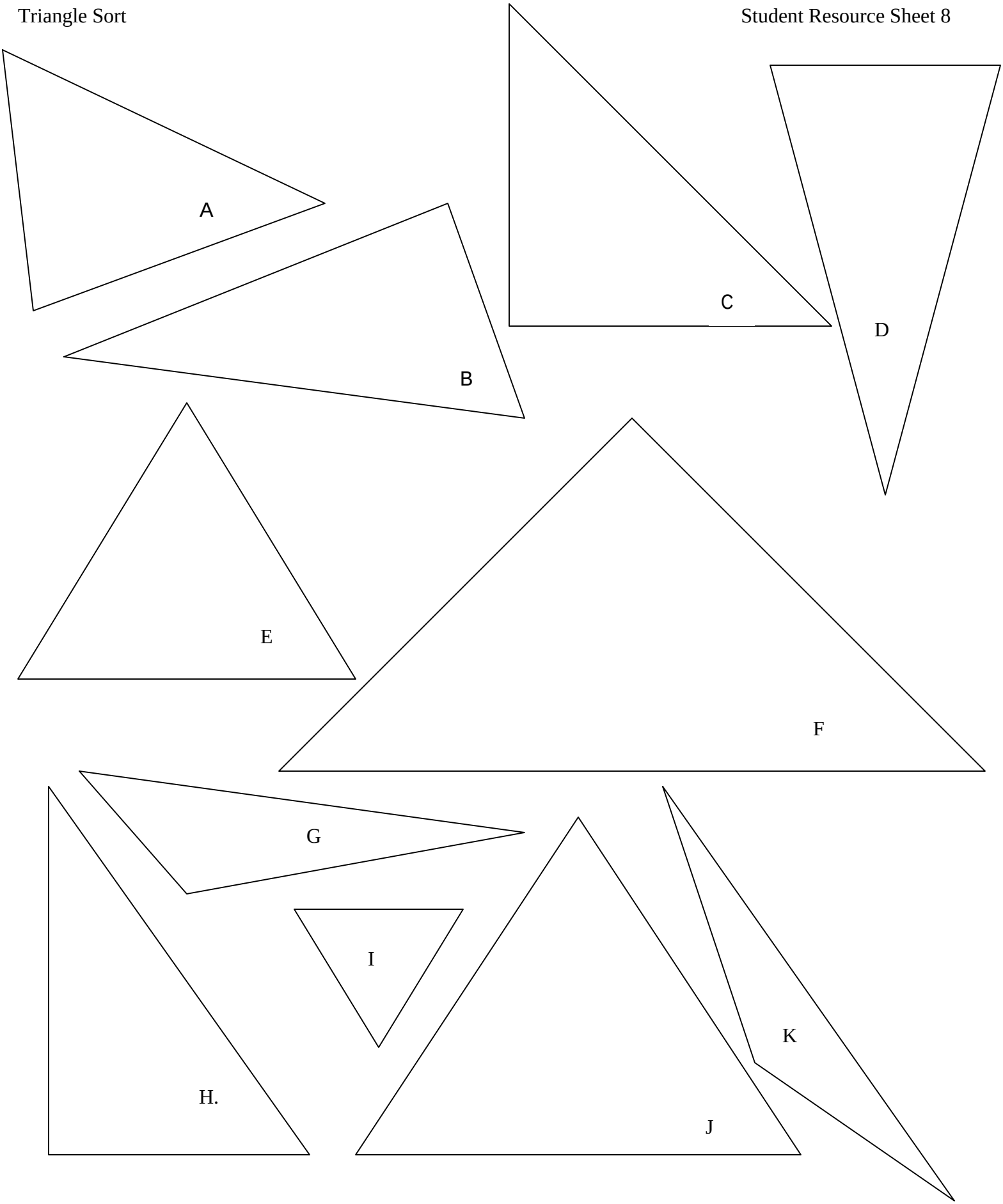
| Equilateral Triangle | Both | Scalene Triangle |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| Equilateral Triangle | Both | Scalene Triangle |
|---|---|---|
| | | |
| All the sides are the same length | Polygons | All sides are different in length |
| All the same size angles | 3 sided shapes | All different size angles |
| | 3 vertices | |
| | | |
| | | |
| | | |
| | | |

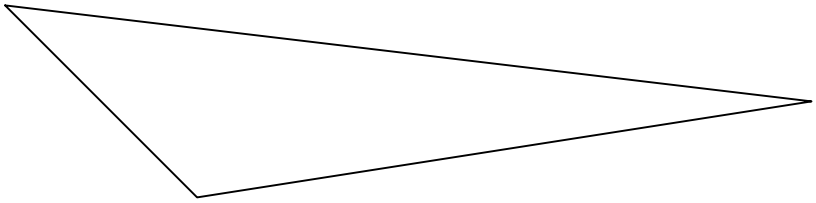
* Answers may vary

Triangle Sort

Student Resource Sheet 8



Brief Constructed Response



*Part A*

Name the type of triangle above. Circle your answer below. (Hint: You may use your ruler to measure the sides.)

Equilateral Isosceles Scalene

*Part B*

Use what you know about triangles to explain why your answer is correct. Use number and/or words in your explanation.

_____

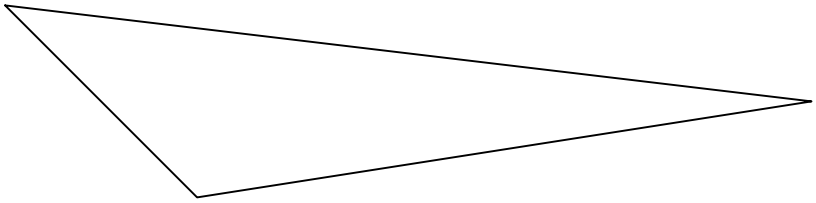
_____

_____

_____

_____

Brief Constructed Response



*Part A*

Name the type of triangle above. Circle your answer below. (Hint: You may use your ruler to measure the sides.)

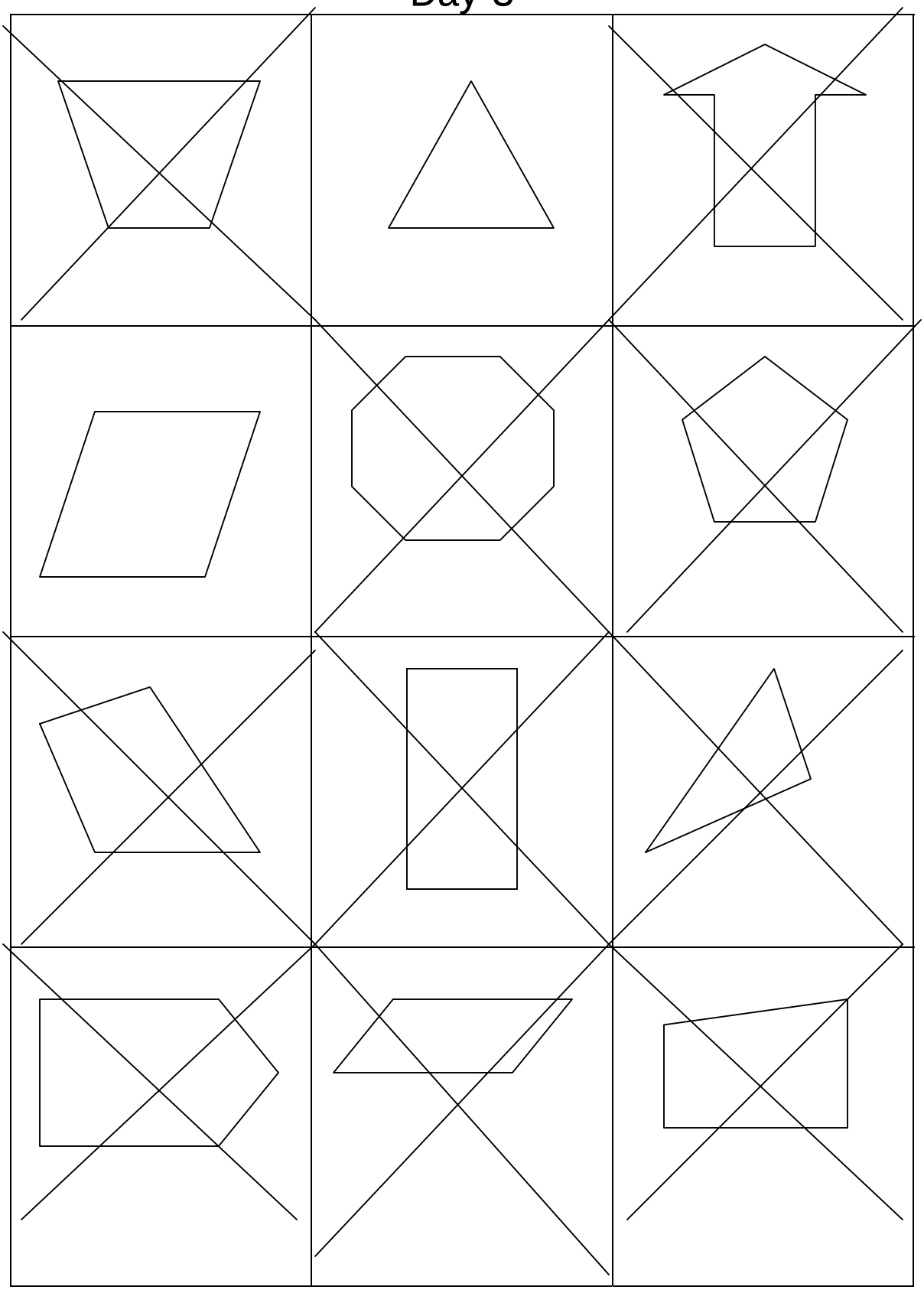
Equilateral Isosceles Scalene

*Part B*

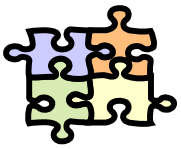
Use what you know about triangles to explain why your answer is correct. Use number and/or words in your explanation.

*Answers will vary, but should include that a scalene triangle has sides of all different lengths and angles of different sizes.*

# Who is the Protector of Polygon Place?
## Day 3



# Tangram Fun



**Directions:** Using your knowledge of geometry, construct the figures below using the allotted tangrams.

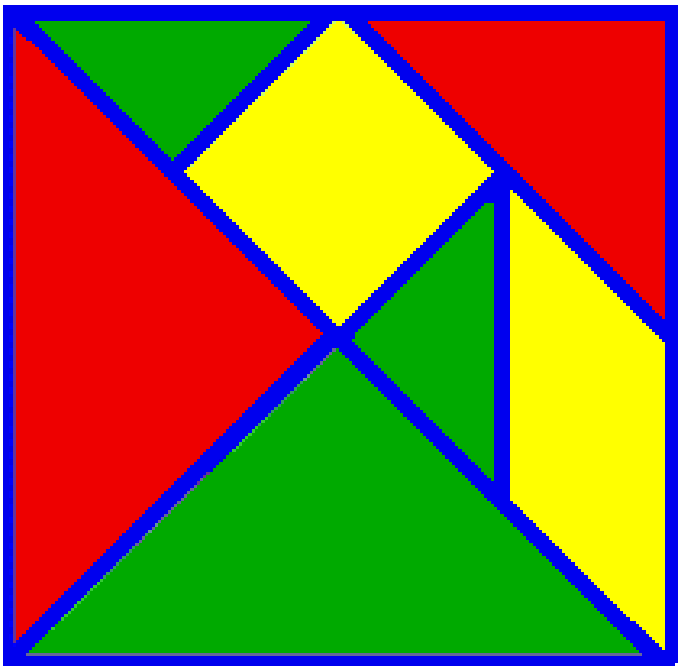
1. Make a **square** using only 2 triangles. Draw your answer below.

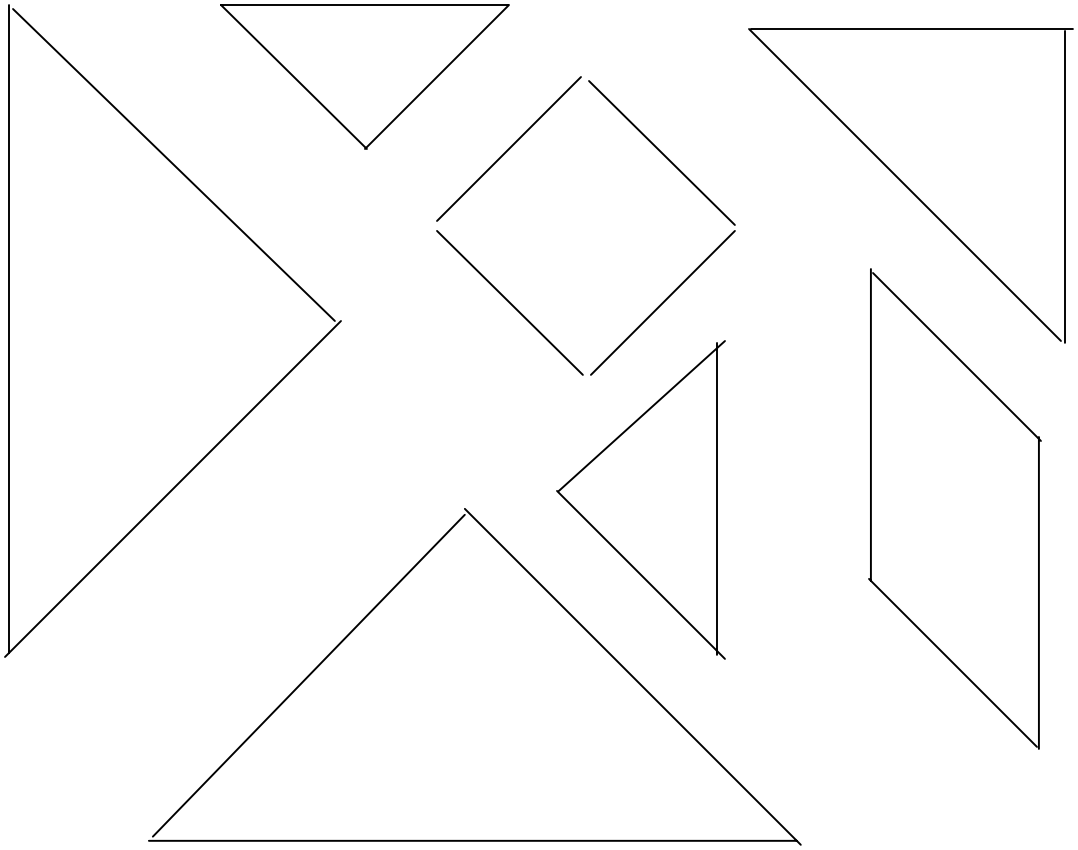
2. Make a **square** using only 3 triangles. Draw your answer below.

3. Find two different ways to make a **rectangle** using 3 tangrams. Draw your answer below.

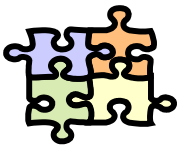
4. Make a **parallelogram** without right angles. Draw your answer below. (Hint: Use 4 tangrams)

5. Make a **trapezoid**. Draw your answer below.





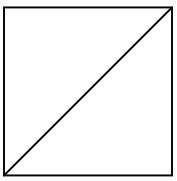
# Tangram Fun



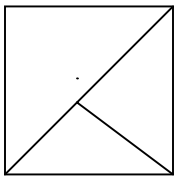
**(Answer Sheet)**

**Directions:** Using your knowledge of geometry, construct the figures below using the allotted tangrams.

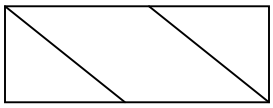
1. Make a **square** using only **2** triangles. Draw your answer below.



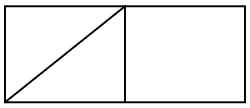
2. Make a **square** using only **3** triangles. Draw your answer below.



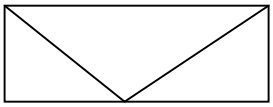
3. Make two different ways to make a **rectangle** using 3 tangrams. Draw your answer below.



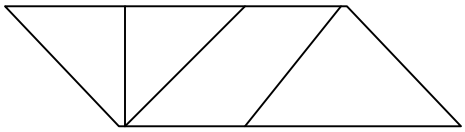
or



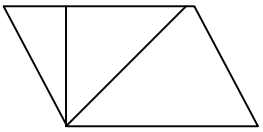
or



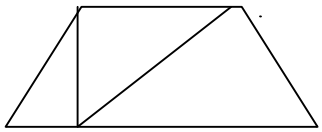
4. Make a **parallelogram** without right angles. Draw your answer below. (Hint: Use 4 tangrams)



or

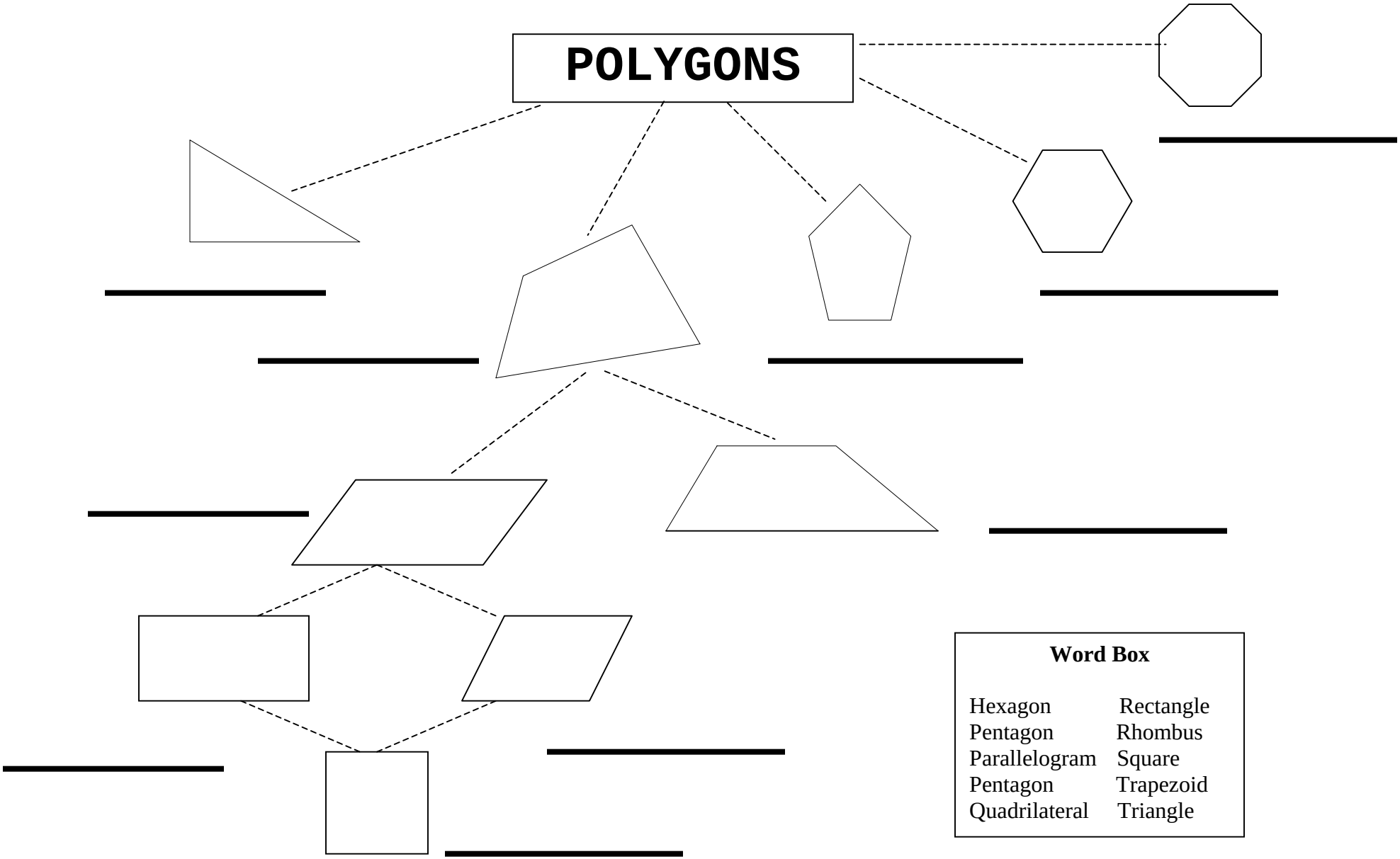


5. Make a **trapezoid**. Draw your answer below.



**Name** _____ **Date** _____

# Polygon Shape Tree



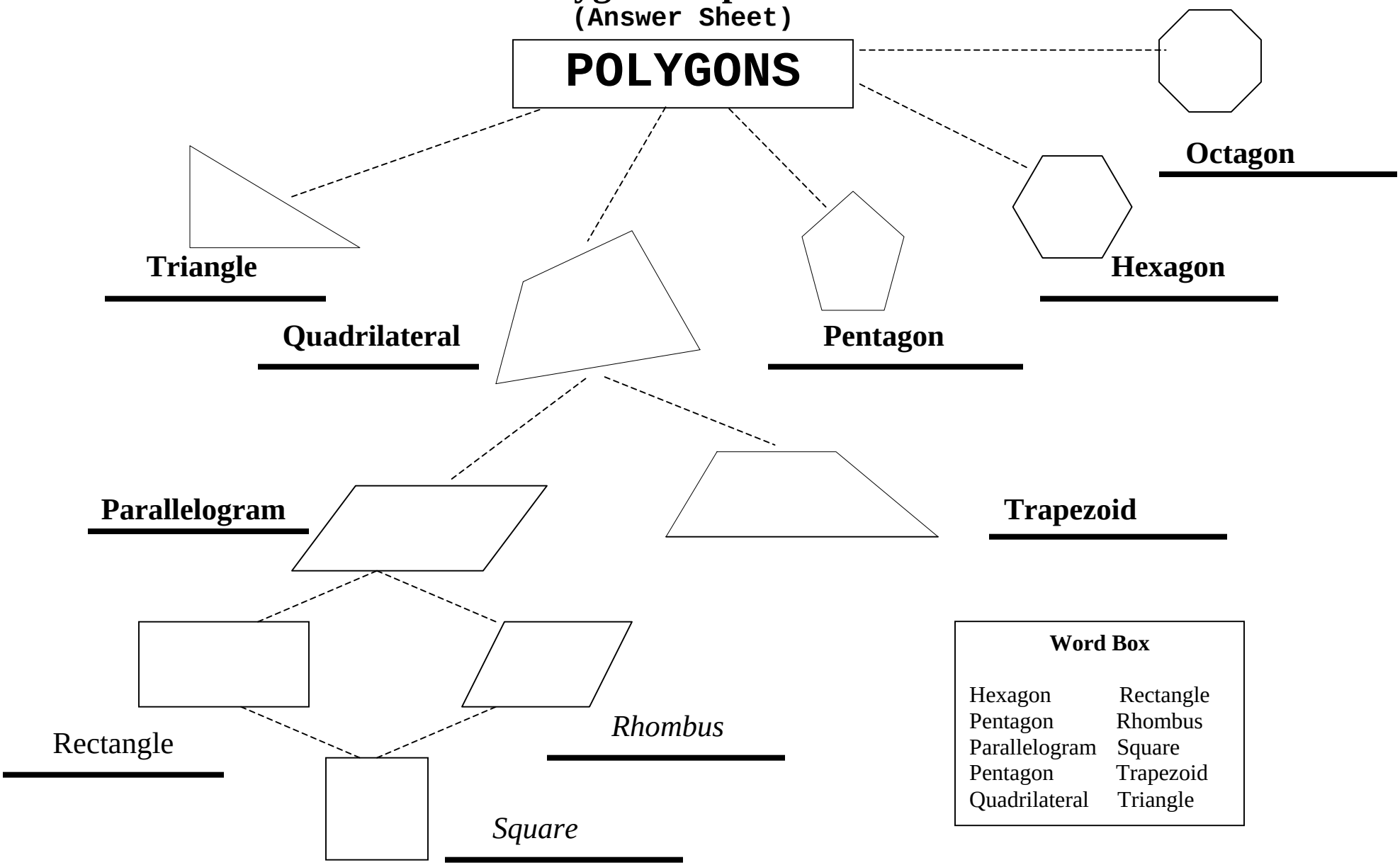

**Word Box**

| | |
|---|---|
| Hexagon | Rectangle |
| Pentagon | Rhombus |
| Parallelogram | Square |
| Pentagon | Trapezoid |
| Quadrilateral | Triangle |

**Name** _____ **Date** _____

# Polygon Shape Tree

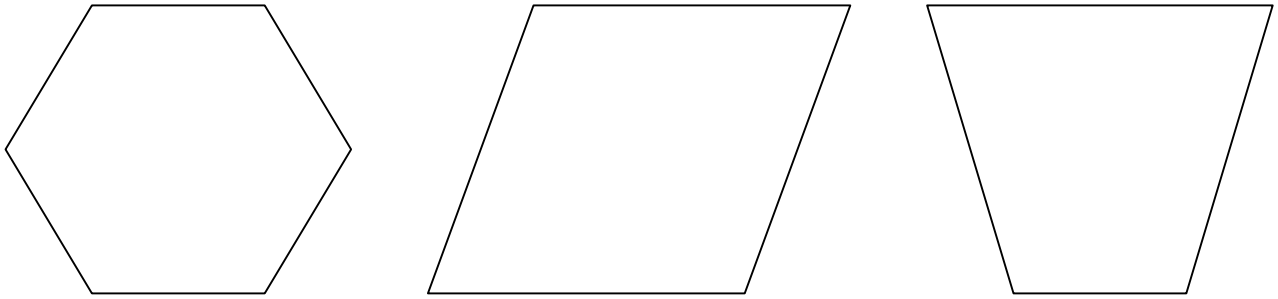
**(Answer Sheet)**




**Word Box**

| | |
|---|---|
| Hexagon | Rectangle |
| Pentagon | Rhombus |
| Parallelogram | Square |
| Pentagon | Trapezoid |
| Quadrilateral | Triangle |

## Brief Constructed Response



*Part A*

Circle the two quadrilaterals above.

_____

*Part B*

Use what you know about the attributes of quadrilaterals to compare these two shapes. Use number and/or words in your explanation.

_____

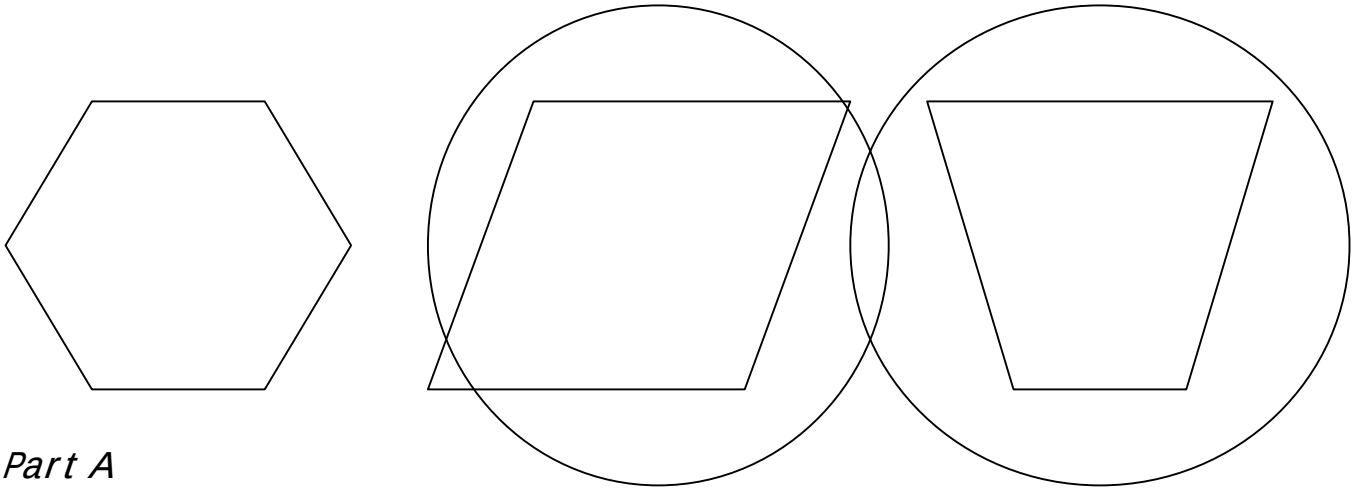
_____

_____

_____

_____

## Brief Constructed Response



*Part A*

Circle the two quadrilaterals above.

_____

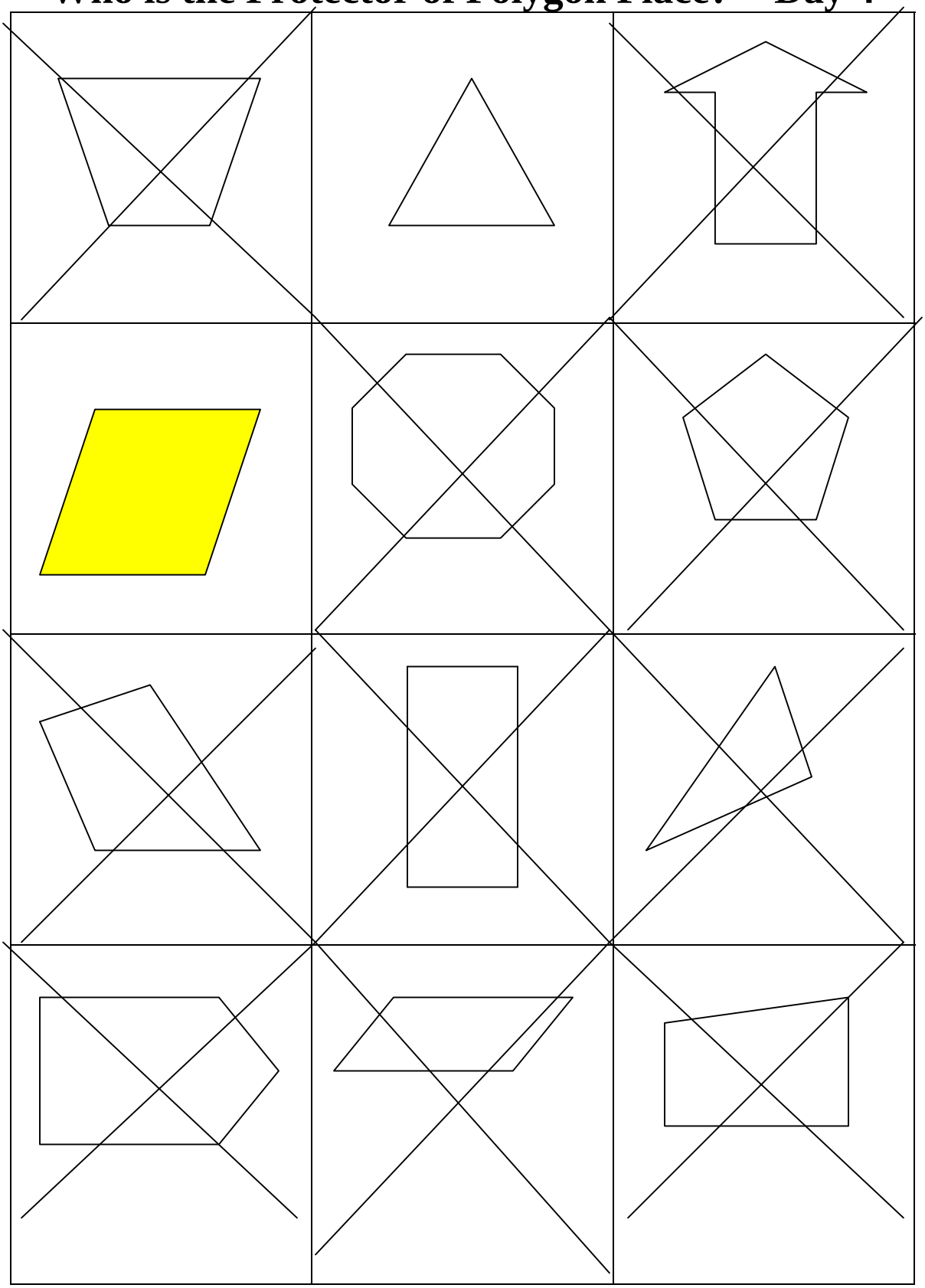
*Part B*

Use what you know about the attributes of quadrilaterals to compare these two shapes. Use number and/or words in your explanation.

*Answers will vary, but should include discussion about quadrilaterals having four sides and four vertices, and that both shapes have two acute angles and two obtuse angles. Answers may include discussion about the parallelogram having two sets of parallel lines whereas the trapezoid has*

Teacher Resource Sheet 29

# Who is the Protector of Polygon Place? - Day 4



**Name** _____ **Date** _____

# Making Headlines

**Directions:** Using the knowledge you have learned and the data you have gathered, determine who the "Polygon Place" protector is. Write a news article revealing the hero and the step-by-step process you used to eliminate the other possibilities. Be sure to use the math vocabulary in your description. Be Creative!

_____

**Name** _____ **Date** _____

# Making Headlines

**Directions:** Using the knowledge you have learned and the data you have gathered, determine who the "Polygon Place" protector is. Write a news article revealing the hero and the step-by-step process you used to eliminate the other possibilities. Be sure to use the math vocabulary in your description. Be Creative!

_____

*__Answers will vary, but should include analysis using angle size, number of vertices, length of sides and attributes of a polygon.*