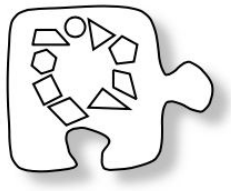
Lessons 1.1.1, 1.1.2 -- **I can characterize polygons using reflection, rotation, or translation symmetry, and identify them by name.**

1.1.1 How can I classify this polygon?



Attributes of Polygons

1-1 SILENT SQUARES

1. Your teacher gave you a puzzle piece that you will use to make a square.
2. Find the other students in your class who have the same color piece.
3. These students will be your teammates, so find a table and sit together.
4. Introduce yourselves.
5. Determine who will be which role:
    a. The Facilitator is the person with the ***trapezoid***.
    b. The Recorder/Reporter is the person with the ***rectangle***.
    c. The Resources Manager is the person with the ***square***.
    d. The Task Manager is the person with the ***triangle***.
6. Review the team roles sheet with one another. Write who is in which role on your team on the sheet provided.
7. Working together with your new team, complete the Silent Squares task outlined below.

TASK: The task is for each individual to make a square using three polygons. Your team will have four completed squares when the task is done.

RULES:

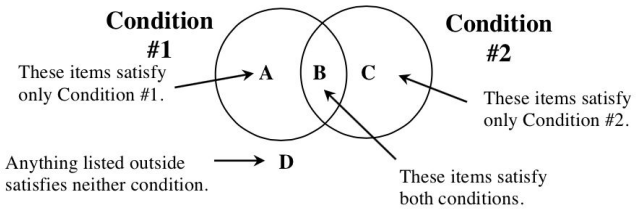
- You may not *talk.*
- You may not *gesture*.
- You may not *take* a polygon piece from someone (they have to give it to you without any gestures or encouragement).
- You *may* give your polygon piece to any of your team members.
- Your whole team must complete the task.

1-2 THE POLYGON BUCKET

1. Review your team roles.
2. Examine the polygons in your "bucket." Make sure you have all 16 polygons. Notice the similarities and differences among them. Are there any alike? Are any very different?
3. Work as a team to build the composite figures on your resource pages by filling in their outlines with the polygons in your bucket.

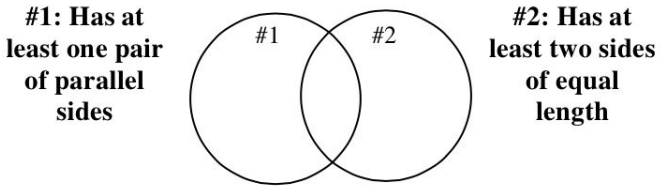
1-3 VENN DIAGRAMS

1. Obtain a Venn Diagram page. A Venn diagram is a tool used to classify objects. An item is placed in the Venn diagram in the appropriate region based on the conditions it meets.

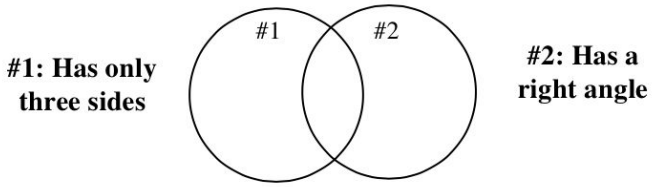


2. Use the post-it notes to label the following scenarios on your Venn Diagrams, then sort the polygons on your diagrams. After each scenario, check your answers with the teacher.

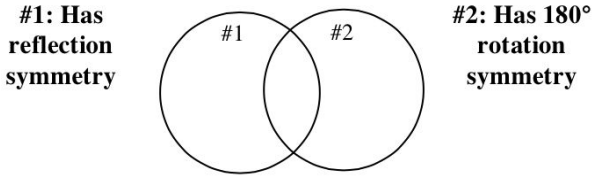
a.



b.



c.



1.1.2 How can I describe it?

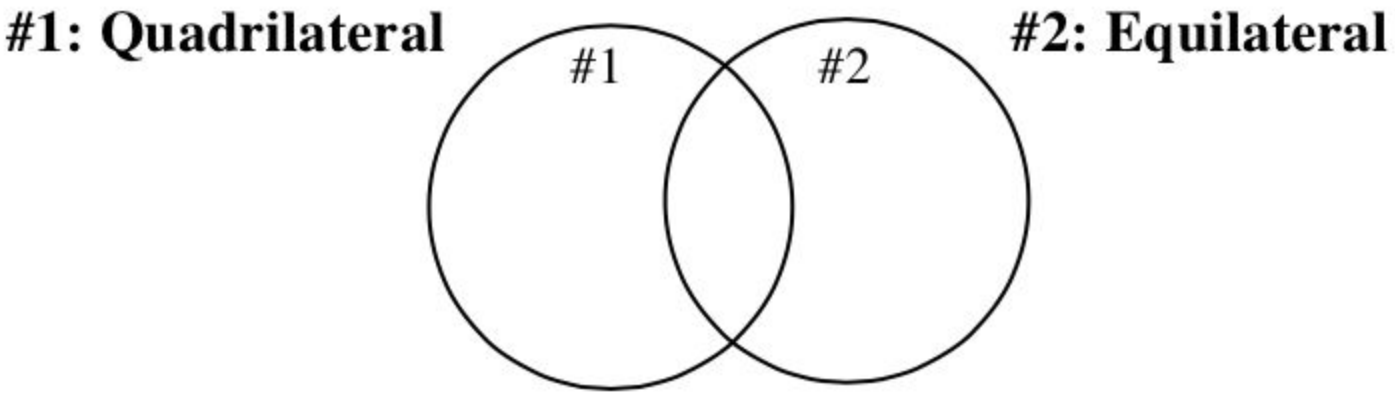
More Attributes of Polygons

1-9

Review the **Collaborative Learning Expectations** as a team.

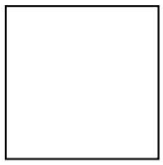
1-10

Using your Venn Diagram, categorize the polygons in the following diagram. Write your results below.



1-11 DESCRIBING A SQUARE

How can you describe a square? With your team, find a way to describe a square using attributes so that anyone could draw it based on your description.



square

1-12 DESCRIBING POLYGONS

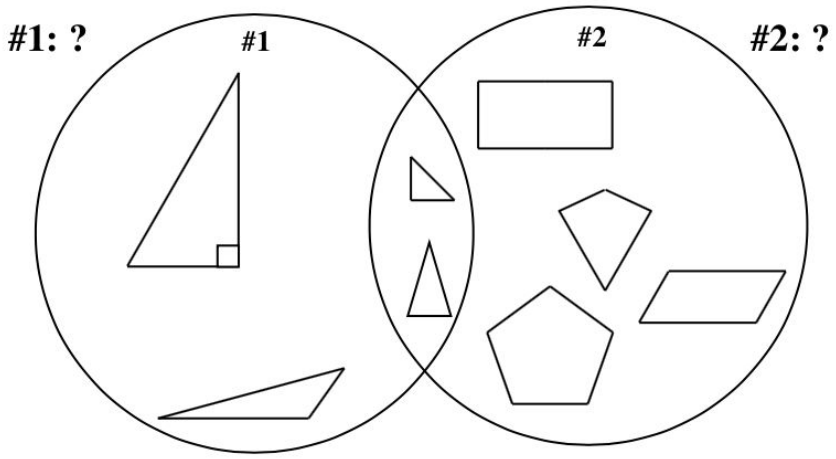
Each team has been assigned a few polygons to describe as completely as possible for the class. As you work with your team to create a complete description, consider the questions below.

- What do you notice about your polygon?
- What makes it different from other polygons in the bucket?
- If you wanted to describe your polygon to a friend on the telephone who could not see it, what would you need to include in the description?

Team 1 - Equilateral Triangle, Parallelogram
Team 2 - Isosceles Triangle, Regular Hexagon
Team 3 - Scalene Triangle, Right Trapezoid
Team 4 - Isosceles Right Triangle, Rhombus
Team 5 - Trapezoid, Rectangle
Team 6 - Scalene Right Triangle, Kite
Team 7 - Quadrilateral, Regular Pentagon
Team 8 - Isosceles Trapezoid, Square

1-14

Some polygons have been placed in the Venn Diagram below based on unknown attributes.



a) What attributes does each circle represent?

b) Where does the regular hexagon from your polygon bucket go in this diagram? Why?

c) Where does the right trapezoid go? Why?

d) Create another polygon that belongs outside both circles. Be creative and name your polygon.