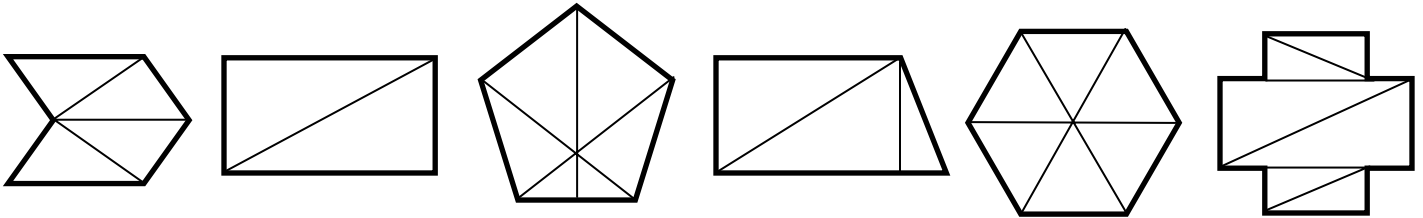


Answer Key/Possible Solutions

Polygons A-F

- Day 1, step C: The hexagon has one line of symmetry, the rectangle has two, the *regular pentagon has one, the quadrilateral has zero, the regular hexagon has 6 and the dodecagon has 2. (*Note: The regular pentagon should have 5 lines of symmetry, but when I cut out the shape provided and tried to fold it accordingly, only one true line of symmetry could be found. I then measured the length of its sides and found that 4 of the sides measured 5.5 cm and 1 side measured 5 cm. Although the pentagon had been computer-generated to be a regular pentagon--all sides and all angles equal--it is not. The lesson plan refers to it as a regular pentagon (Day 1, step B) but it is not.)
- Day 1, step D: Here are some sample diagrams of how triangles could be used to construct these polygons. Other answers are possible.



Tricky Triangles

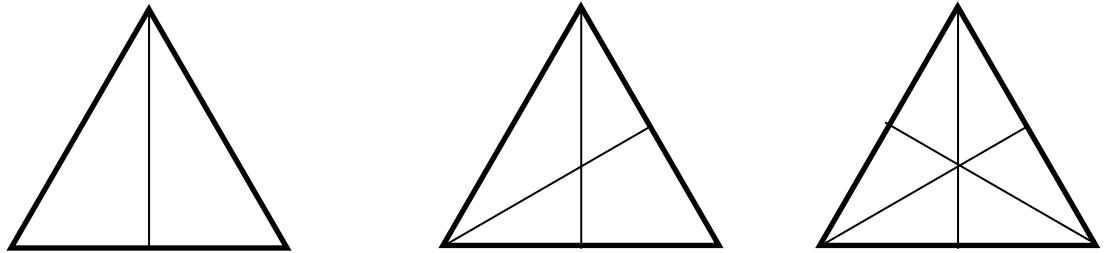
- Since students have not been taught yet (in this series of lessons) that there is a total of 180 degrees in triangles, this initial problem-solving task may seem quite tough. However, students have been shown that congruent polygons are formed when lines of symmetry occur, and that congruent shapes have the exact same side and angle measurements. Therefore, they could find the angle measurements of the 60-60-? Triangle and the 45-90-? Triangle since they both contain a line of symmetry. Whether or not they then compared the total angle measurements of the two triangles to find a pattern (i.e., both triangles contain 180 degrees), would be dependent on the knowledge base and ideas of the students. **Remember, the process of the problem-solving is more important than the solution at this point and stage in the game.** If kids get stumped and struggle and are unable to find a solution at this time, let them know that it is okay...that's just part of problem-solving ☺.
- Note: Some students may use the wax paper wedges since the instructions say they can not use a protractor. They'd have to convert the degrees to unit angle measurements if they tried to find a pattern/correlation among all the triangles, but at least they'd be devising a plan about how to figure out the measurement of the missing angles.

True Triangles

- Make sure that students notice there are strips on the bottom of the second page that they can cut out and use to help them test their hypotheses.
- Also, students could use the side measurements from the **Classification and Measurement Chart** to test their various hypotheses about the given statement.

Building Code Check-Up #4

- Part B, #4
 - The triangle with one line of symmetry has one pair of congruent triangles.
 - The triangle with two lines of symmetry has one pair of congruent triangles.
 - The triangle with three lines of symmetry has **three pairs** of congruent triangles (see diagrams below). Since students were only given the direction to label the congruent triangles with a “C,” it would be unfair to penalize them for not distinguishing between the different pairs of congruent triangles in the last triangle. This distinction could be clarified when the results of the check-up are passed back to them.



- Part C
 - The following is one possible sample of a simple design that has been created and then “flipped.”

