# Congruent and Similar Triangle Investigation

## Activity Two

1. Only ONE person in each pair or group: Using the three strips of paper from Activity One, fold and cut each strip of paper in half. Create a triangle using one half of each of the original strips and place the strips together corner-to-corner.

2. Compare this triangle to the first one. Describe any similarities and differences.

3. Carefully trace this triangle and label the sides in the same way you did the first triangle in Activity One.

4. Place the smaller triangle inside the larger triangle and line up the corresponding parts. Measure each side of both triangles and write the ratios of the corresponding sides of the larger triangle to the smaller triangle below.

| | | | |
|---|---|---|---|
| Larger: | | | |
| Smaller: | $\frac{AB}{AB} = \_\_\_\_$ | $\frac{BC}{BC} = \_\_\_\_$ | $\frac{AC}{AC} = \_\_\_\_$ |

What do you notice about the ratio of the sides?

5. Measure each angle of both triangles.

| | | | |
|---|---|---|---|
| Larger: | $\angle A =$ | $\angle B =$ | $\angle C =$ |
| Smaller: | $\angle A =$ | $\angle B =$ | $\angle C =$ |

What do you notice about the measures of the angles?

6. What things need to be true in order for two triangles to be similar? Are these two triangles similar? Use mathematics to justify your answer.

Answers: The triangles will be similar to one another, with a ratio of 2:1 for all of the sides (original:new). In order to be similar, all of the sides of a triangle must be in the same ratio and all of the angles need to be congruent. The two triangles in this activity are similar.