

Geometry
Chapter 4 Project
Congruent Triangles

To further our study of congruent triangles, you will be working in groups of 2-3 people in making your own piece of a class quilt. You will be using your measuring skills with a protractor and ruler to form a hexagon with a variety of triangles. Talk through the process with your group and be as creative as you can with different colors of construction paper.

- a. Pick three different colors of paper
- b. Use a protractor and a ruler to make 12 isosceles triangles (6 in one color and 6 in another). These should have a base that measures 4 inches long and base angles of 30° . What should the measure of the 3rd angle be in order to make it a legitimate triangle?
- c. Measure and record the length of the legs of the triangles that you have created.
- d. Place these triangles together by connecting the bases. What type of polygon have you formed?
- e. Once you have formed six new figures by connecting your triangles, place them all together so you have formed a six-pointed star. Be prepared to explain how you figured out which sides to connect.
- f. Recall your measurement from step c. This will be the length of the sides of the 12 equilateral triangles that need to be created next.
- g. Once these are cut out, connect them in pairs and decide how to fit them into your six-pointed star to make your final hexagon.
- h. Turn in your piece of the quilt to join the others.

What properties were necessary for you to recall in order to complete this process?

Where else in the world might you see the construction of triangles to make a larger end product? Explain your thoughts!