CEMC at Home

Grade 4/5/6 - Friday, March 27, 2020

Quarter Squares

Question 1: On the blank squares below, show six different ways to divide a square into four identical pieces, using only straight line segments.

In math, objects that are identical are called congruent. Congruent shapes have exactly the same shape and size, but may be rotations (turns) and/or reflections (flips) of each other. Can you divide the square into smaller congruent squares or congruent triangles? What other shapes might you use?

Question 2: For each of the templates 1. - 7. given below, discover whether four of these identical shapes could be arranged to create a square. For example, can you arrange four of the shapes from template 1. (of the same size) to form a square? If so, make a sketch on the grid paper on the following page showing how the four identical shapes create a square, and move onto the next template.

Hint: If your visual imagination gets stuck, cut out four copies of the templates to play with. Think about whether you need rotations (turns) and/or reflections (flips) of the pieces.

More info:
Check out the CEMC at Home webpage on Friday, April 3 for the solution to Quarter Squares.
Want another “shape-fitting” activity like this one? Try problem 6 here: 2008 Emmy Noether Circle.
Grid for Quarter Squares