SD 38 K-12 Mathematics & Numeracy

Grades 6-7: Week Seven

Big Idea: We can describe, measure and compare spatial relationships.
Curricular Content: geometry – triangles, transformations, comparing rectangular prisms and cylinders
Curricular Competencies: visualize to explore mathematical concepts, communicate mathematical thinking in many ways, use mathematical vocabulary
Core Competencies focus: Communication, Creative Thinking

Teachers and Families: The following are five problems/tasks to choose from for this week, based on the above curricular areas of focus.

Transformational geometry involves moving shapes, sometimes on a coordinate grid. Transformations include reflections (flips), translations (slides), and rotations (turns). Print or draw some grid paper. Draw a rectangle with coordinate points (0,0) (0,2), (3,2) (3,0). What transformations are needed to move it to be placed with coordinate points ((7,7) (7,10) (9,10) (9,7)? Provide instructions on how to move the rectangle, naming the transformations you used.
There are many different types of triangles. Find three sticks from outside, straws, toothpicks, chopsticks or rolled up paper sticks. Move them around to make different types of triangles – equilateral, acute, obtuse, scalene, right, isosceles. Take pictures or draw the different triangles and label their attributes. 
Choose and draw a triangle on paper using a ruler or something with a straight edge. Cut out the triangle. Trace it in the corner of a piece of paper. What transformations are needed to move the triangle to the diagonal corner of the paper, in a reflected position? How could you measure and describe the reflections (flips), translations (slides) and rotations (turns)?
These objects represent a rectangular prism and a cylinder. How are these 3D shapes the same and different? Describe their attributes/properties using mathematics vocabulary. What would you need to measure to find out how much each container holds? What connections can you make that might help develop your ideas? 
Numeracy Task: Find a piece of art (actual or photo) that interests you and that has either line (reflective) or rotational symmetry as part of its design. Why do you think symmetry is common in particular types of art? What do you think the artist does to ensure their art is symmetrical?

created by Janice Novakowski for the Richmond School District
SD38:3-5MATH-7

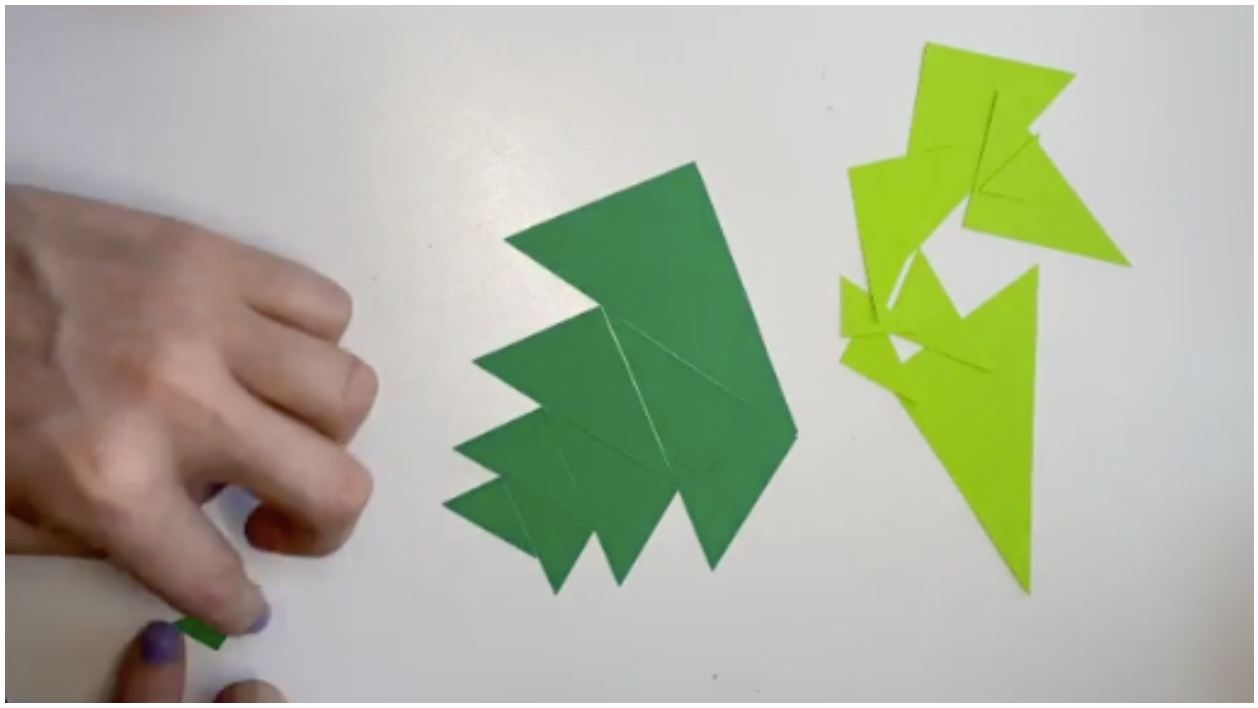
RICHMOND SCHOOL DISTRICT NO.38

The following Math Art Challenge connects to both triangle concepts and transformational geometry from this week.

Similar Right Triangle Patterns

https://arbitrarilyclose.com/2020/04/19/mathartchallenge-day-34-similar-right-triangle-patterns/

Students just need a straight edge or ruler, scissors, a pencil and paper.



If you use Twitter, you can share your patterns using the hashtag #MathArtChallenge and follow this hashtag and Annie Perkins at @anniek_p for daily math art challenges.