

Shrinking Square Challenge

by Dave Youngs

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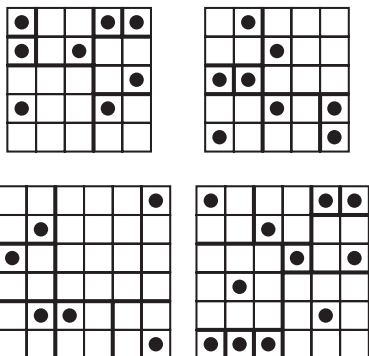
This month's *Puzzle Corner* activity is a seemingly simple one that may prove more difficult than one might expect. In it, students place four pennies on the corners of the square pictured. They are then challenged to move *only* two of the coins to create a new square that is smaller than the original. (The original square has sides of about 10 centimeters—the new one sides of about 7 centimeters.) Most students will need to exercise their spatial reasoning to solve this puzzle. Persistence will also help.

This activity is one that should be done individually and the solutions not shared until all the students have had ample time to try solving it on their own. Therefore, it is important to caution students *not* to share their solution with other students—doing so will rob these other students of the joy of discovery.

I hope that you and your students enjoy this challenge. The solution and another puzzle will appear next month.

Last Month's Puzzle

The July/August *Puzzle Corner* was called *Square One*. In this puzzle, students were challenged to divide square grids into a number of smaller squares so that each smaller square contained exactly one star. The solution for each of the four problems is shown here.



Reader Responses: *A Touchy Situation*

In March of 1997, the *Puzzle Corner* was an activity called *A Touchy Situation*. The challenge was to see how many rods (we suggested using Cuisenaire® Rods) could be placed flat on a table in such a way that each rod touched every other rod with no stacking allowed. The second part of the activity had the same goal, but allowed stacking. At the time, our best solution for the second part of the activity involved six rods. We challenged readers to see if they could determine a solution that had more than six rods touching. We are happy to share a response from Lydia Penner, a fifth-grade teacher at Ralph Brown School in Winnipeg, Manitoba, Canada. Her student, Louie Szigeti, came up with a solution using eight rods, which is pictured below. Thanks again Lydia for sharing your students' work!

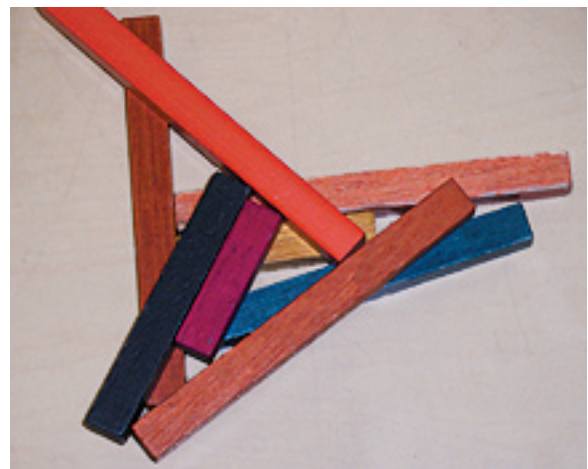


Photo by Richard Andrysiak

SHRINKING SQUARE CHALLENGE

Place four pennies at the vertices (corners) of the square below. The sides of this square are about 10 centimeters long, when measured from the centers of the coins. Your challenge in this puzzle is to move only two coins so that you form another square that is smaller. This new square has sides that are about 7 centimeters long. Sketch your solution in the space at the bottom of the page.

