

1135-VI-559

Jay A Malmstrom* (jmalstrom@occc.edu), Mathematics Dept, Oklahoma City Community College, 7777 S May Ave, Oklahoma City, OK 73159. *Using the Coin Jumping Puzzle to Introduce Students to Polya's Four Phases of Problem Solving*. Preliminary report.

A common puzzle is described as follows: Given seven spaces with three pennies in the three spaces on the left and three nickels in the three spaces on the right - move all the pennies to the right and all the nickels to the left. The rules are: 1) pennies may only move to the right, nickels can only move to the left; 2) A coin may move into an empty space in the appropriate direction or jump a single coin of the opposite type in the appropriate direction. This puzzle makes an ideal tool for introducing students to the problem solving process: 1) Understand the Problem, 2) Make a Plan, 3) Carry Out the Plan, and 4) Reflect on the Solution. In a guided activity, students learn to reduce the problem to a smaller problem (fewer coins and spaces) and use to results to solve the original problem. As a final step, the students are asked to generalize how many moves would be required to solve a larger version of the problem. (Received September 08, 2017)