

Penny Penning Puzzle

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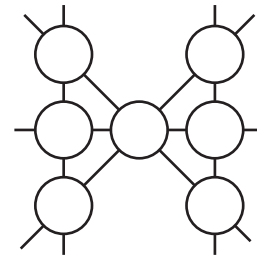
This month's puzzle is a good one to use early in the school year. It is fairly easy and shouldn't frustrate students too much in their early exposure to the puzzle-solving process. To do this puzzle, students need only the student sheet depicting the nine-penny arrays and a pencil. The puzzle challenges students to draw four "pens" around the nine pennies in the array in such a way that there is an odd number of pennies in each pen. Students should begin to realize, after several trial and error attempts, that there is no way to divide nine objects into four separate sets of odd numbers since any combination of four odd numbers produces an even sum. Once this realization has been made, the puzzle seems unsolvable. This is where an important puzzle-/problem-solving skill comes into play—thinking divergently. Since there is no way to draw four separate pens (with no overlap) that each contain an odd number of pennies, one or more of the pens *must* overlap. Once this insight is made, it is easy to see that there are several valid solutions to the puzzle.

As in any *Puzzle Corner* activity, students should be encouraged to work independently and asked not to share their solutions until the appropriate sharing time at the end of the week. While you should encourage students not to give away their solutions, you may want to allow them to offer hints to their fellow students. These hints can help those students who have not yet developed their abilities to think outside the box. Your role as the teacher is to facilitate this problem-solving process—not give students the answer.

I hope that you and your class find this puzzle enjoyable. I'll have one of the several solutions and a new puzzle in the next issue. If you have any questions or comments about this activity, please contact me at dyoungs@fresno.edu or at the AIMS address found on the back cover of this magazine.

Solution for The Seven Penny Puzzle

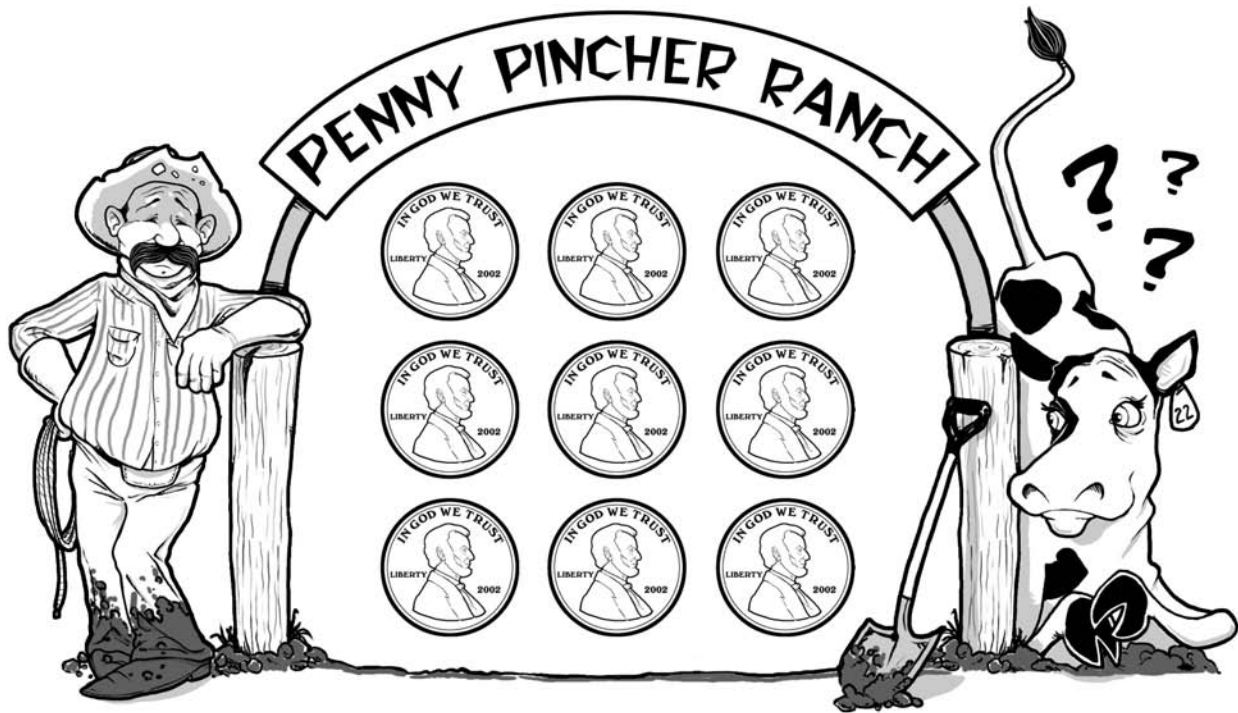
Last month's puzzle challenged students to arrange seven pennies in such a way that the pennies formed five rows of three pennies each. One of many possible solutions appears below.



PENNY PENNING

PUZZLE

The challenge in this puzzle is to draw four “pens” around the nine pennies pictured below in such a way that each pen surrounds an odd number of pennies.



Use the smaller pictures below to work on this problem. When you find your first solution, record it above. You can then continue to find additional solutions and record them below.

