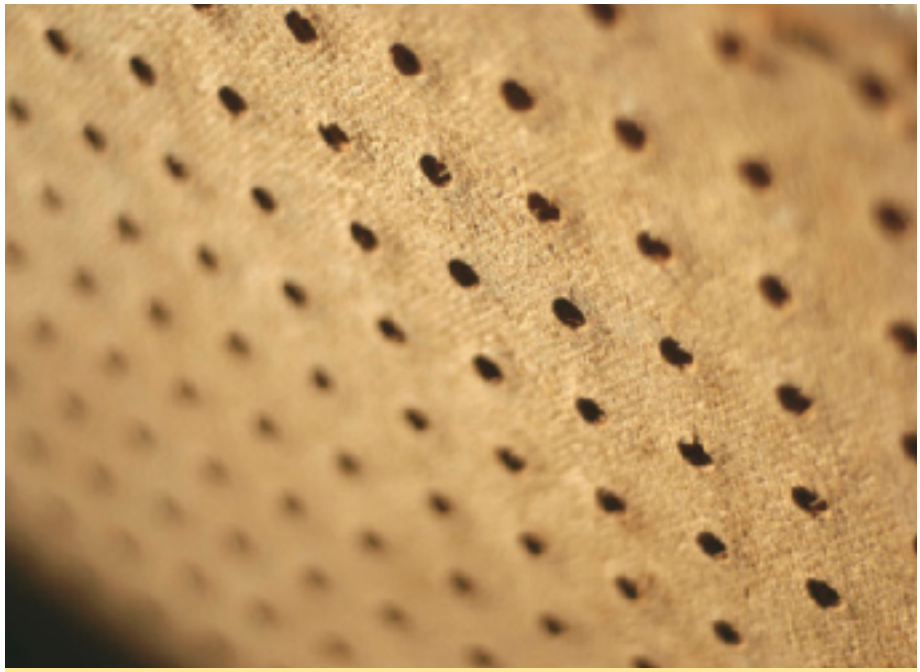
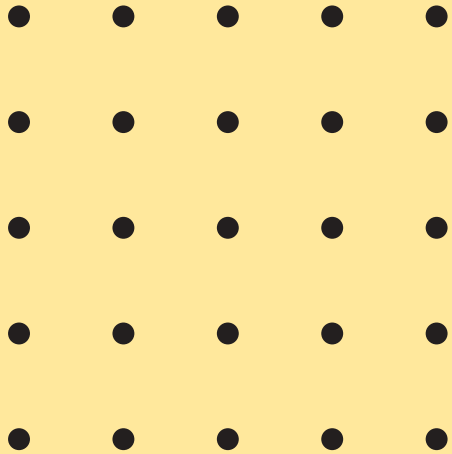
Edward S. Mooney and Sherry Meier



Squares and Pegs

Use a 5 peg × 5 peg geoboard, like the one shown here, or 5 × 5 dot paper. What different-sized squares can you create? Assume that you must use pegs (or dots) as vertices.



We encourage classroom teachers to pose this problem to your students and share their creative solutions. Please include a brief analysis of the specific strategy; examples of original student work or high-quality digital images; and your name, the school name and address, and your e-mail address. E-mail submissions to **Edward S. Mooney** at mooney@ilstu.edu, or send to him at Illinois State University, Campus Box 4520, Normal, IL 61790-4520, by **May 15, 2011**. Published solutions will be credited.

(*Solutions on page 510*)

TREVOR SMITH/ISTOCKPHOTO.COM

solve it! solutions

(*Continued from p. 455*)

Eight different-sized squares can be built on the 5 peg × 5 peg geoboard. By dimension the squares are—

- 1×1,
- $\sqrt{2} \times \sqrt{2}$,
- 2×2,
- $\sqrt{5} \times \sqrt{5}$,
- $2\sqrt{2} \times 2\sqrt{2}$,
- 3×3,
- $\sqrt{10} \times \sqrt{10}$, and
- 3×3.

By area, the squares are 1, 2, 4, 5, 8, 9, 10, and 16 square units. Although not all students will be able to determine the dimensions or area of these eight different-sized squares, they should be able to draw all eight.

Note: See the August 2009 "Mathematical Explorations: Tilting Squares" for further development of these squares and their area.