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Stretching probability explorations with geoboards.

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Summary: Students are faced with many transitions in their middle school mathematics classes. To build knowledge, skills, and confidence in the key areas of algebra and geometry, students often need to practice using numbers and polygons in a variety of contexts. Teachers also want students to explore ideas from probability and statistics. Teachers know that one way to help students navigate these transitions is to use hands-on activities and manipulatives, but it can be a struggle to find probability and statistics activities that go beyond employing spinners, M&M's[®], dice, coins, and bags of marbles. This led the authors to consider geoboards as an alternative manipulative for helping students explore probability. Geoboards, rectangular boards with equally spaced pegs, were invented in the 1950s by Egyptian mathematician Caleb Gattegno. Teachers using geoboards have shared many exciting investigations in geometry and discrete mathematics. Students can begin using geoboards as early as preschool, making shapes by stretching rubber bands or wrapping string around the pegs. Later, teachers use geoboards to help students learn about polygons, transformations (e.g., translations, rotations, reflections), angles, area, perimeter, and countless more topics. Geoboards are simple and inexpensive; free virtual versions are also available. In this article, the authors share an engaging geoboard activity that integrates key middle school concepts found in geometry, algebra, and probability. (ERIC)

Classification: U60 K50 G40

Keywords: probability; manipulative materials; geoboard; geometry

<http://www.nctm.org/Publications/Mathematics-Teaching-in-Middle-School/2016/Vol21/Issue6/Stretching-Probability-Explorations-with-Geoboards/>