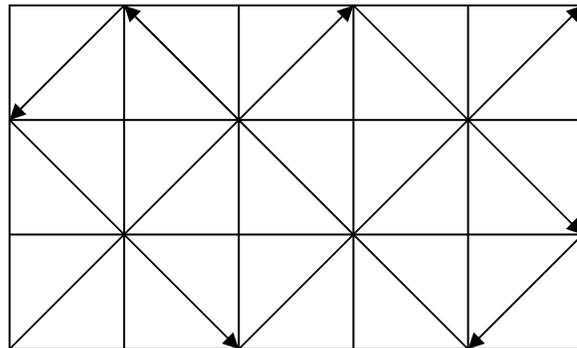


BILLIARD BALL MATH

Students investigate the path of a ball on a billiard table with sides of whole number length when the ball starts in a corner and always travels at a 45 degree angle. For example, a ball on the 3 x 5 table in the diagram starts in the lower left corner and takes the path shown, hitting the perimeter eight times (including the first and last corners) and going through all 15 squares, before ending at the top right corners. They make a table which records the length and width of the billiard table, the number of hits against the perimeter, and the number of squares passed through, for billiard tables of various sizes, and look for relationships. The number of hits against the perimeter of the table, including the first and last corners, is the sum of the width and the length of the billiard table divided by their greatest common factor.



[Source: New Jersey Mathematics Curriculum Frameworks]

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