Below is a $10 \times 10$ grid. Without counting, how many different ways could you calculate the number of one-by-one squares that make up the outer border of the checkerboard?


Use a scrap sheet of paper to document all of the different ways that you (and your group) invent to calculate the number of squares in the border of the grid. Be prepared to share your thinking with the whole group. How do you know that all of your methods are mathematically valid and equivalent?

Adapted from Boaler, J., \& Humphreys, C. (2005). Connecting mathematical ideas: Middle school video cases to support teaching and learning. Portsmouth, NH: Heinemann.

