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Doug Chatham* (d.chatham@moreheadstate.edu), Department of Mathematics, Morehead State University, Morehead, KY 40351. *Social Distancing on the Chessboard*. Preliminary report.

On an $n \times n$ chessboard, two squares are at most two queen moves (or rook moves) from each other. We ask how many blocking pieces (“pawns”) need to be placed on the board to increase the maximum possible distance d (“diameter”) from 2 to some other desired number. We produce an algorithm to answer the question for given values of n and d . We show that, for $n \geq 3$, to increase the diameter for queens and rooks to 3, one pawn is needed. Also, for $n \geq 4$, to increase the diameter to 4, three pawns are needed for the queens and two pawns for the rooks. (Received August 31, 2020)