

Playful Problems from a Math Capstone

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This talk highlights three projects from an undergraduate mathematics capstone course, all rooted in combinatorics and graph theory. Inspired by the puzzle game *Free Flow*, *The New York Times* game *Pips*, and tilings with magic properties, these projects led to natural and engaging open questions involving matchings on grids, counting problems on dominoes, and extensions of magic labelings. I will share how these questions emerged from student work and invite further exploration.

Keywords: dominoes, perfect matching, magic tilings