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Malgorzata Aneta Marciniak*, 31-10 Thomson Avenue room E223N, Long Island City, NY 11101, and **Ryan Alvarado, Maia Averett,, Benjamin Gaines, Christopher Jackson, Mary Leah Karker, Francis Edward Su** and **Shanise Walker**. *Using matrices for analyzing the Game of Cycles*. Preliminary report.

Playing the game of cycles (as introduced in Su's 2020 book *Mathematics for Human Flourishing*) can be interpreted as converting a planar non-directed graph into a planar directed graph. Thus, every stage of the game can be represented as a graph of mixed type with a suitable adjacency matrix. The rules of the game and the winning moves have interpretations in terms of that matrix, which suggests another way to analyze the game and its strategies. This is a preliminary report describing work in progress. (Received September 17, 2019)