1145-Q5-2284   **Betty Love*** (`blove@unomaha.edu`), Mathematics Department, University of Nebraska - Omaha, Omaha, NE 68144, **Victor Winter** (`vwinter@unomaha.edu`), Computer Science Department, University of Nebraska - Omaha, Omaha, NE 68144, **Michael Matthews** (`michaelmatthews@unomaha.edu`), Mathematics Department, University of Nebraska - Omaha, Omaha, NE 68144, and **Michelle Friend** (`mefriend@unomaha.edu`), Teacher Education Department, University of Nebraska - Omaha, Omaha, NE 68144. *Introduction to Mathematical and Computational Thinking: A New Gen-Ed Math Course.*

We report on an NSF-funded project to develop and assess a new course designed to satisfy the math general education requirement at our institution. The course combines mathematical thinking and computational thinking. At the heart of the course lies the study of patterns, which are fundamental to mathematics and to computer science. Specifically, we explore a variety of visual patterns and examine how to express these mathematically as algebraic expressions and sequences. These abstractions form the basis for creating algorithms that are then implemented in Bricklayer code to create a virtual visible representation of the pattern. Developed by the presenters, Bricklayer (bricklayer.org) is a set of apps, online tutorials, curriculum, and documentation that provides an example-rich and problem-dense domain in which students learn to write programs in the functional programming language SML. When executed, Bricklayer programs can produce LEGO artifacts, Minecraft artifacts, and artifacts suitable for 3D printing. Opportunities for creativity and artistic license provide powerful motivation for students. (Received September 25, 2018)