POLYOMINO CROSSWORD PUZZLE

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I have created a two-ways-to-play crossword puzzle all about the puzzles we have discussed in class. The first way to play is just a normal crossword, where you get the blank puzzle and the clues and are expected to solve for the completed words. The second way to play is to arrange the polyominoes in accordance with the given clues to form the structure of the solved crossword. I chose to create a polyomino crossword puzzle because I really enjoy crossword puzzles but have never solved one in this fashion. Polyominoes and similar puzzles like tangrams are also interesting to me, so I thought to combine these topics in one project to share with the class. I like to solve crossword puzzles through apps on my phone, and sometimes I pretend to have enough life experience to solve the New York Times crosswords, but I never finish those. This project allowed me to explore that appreciation and apply it to my coursework.

To create the crossword, I first thought of the answers and clues. All the answers I chose were types of puzzles we talked about over the course of this semester, or of parts of those puzzles. For instance, "deckofcards"—no spaces—and "hexaflexagons". This way, the puzzle would be as much of a review of the semester as it is a puzzle. I tried to make some clues obvious and some easy so that everyone would get a challenging puzzle but for the puzzle to be solvable within a relatively short time span (5-15 minutes) so more people in the class can have a chance to play.

This project has obvious connections with Martin Gardner; all the answers and clues are either about his writings (one answer is "scientificamerican"!) or the puzzles about which he wrote in any of his publications. This way, anyone attempting the puzzle would review all that we have discussed this semester, from card puzzles and magic squares to word puzzles to last week's hexaflexagon presentation. I do hope I haven't forgotten anything major to add in to the puzzle, but the major categories of puzzles are included.

An Honors Program goal I addressed by creating this project includes interactive, discussion-oriented inquiry because this project is intended to provoke the puzzle-solver into thinking about both the clues—Martin Gardner's writings/puzzles—and the spatial arrangement and interactions of the polyominoes in the crossword puzzle. The project used a lot of research and creativity, because though primarily the puzzle is a creative endeavor, I had to use the entire semester's research and class learnings to create the puzzle. Finally, the last Honors Program goal included with this work is that of a willingness to explore new areas of knowledge. I was excited to use a mixture of sized polyominoes as an innovative way to solve a crossword, and I learned a lot about them while researching what was "acceptable" for a polyomino project.

In all, this was a really fun project to put together. I sincerely hope that everyone enjoys putting together the crossword as polyominoes, but if they do not like crosswords, I will still have the option available for them to solve the clues using the conventional crossword scaffold. The works and writings of Martin Gardner are clearly reflected in this work and will give all puzzle-solvers the opportunity to review the puzzles and themes covered in the course.

Martin Gardner Crossword & Polyomino Puzzle—Emily Pool

There are two ways to play: one, as a simple crossword, and two, as a polyomino puzzle which when solved shows the correct crossword shape. The answer for each method is the same. The clue answers are all things Martin Gardner wrote about and things we discussed and worked through during class. Think of it as a fun game to review the entire course using a word/configuration/polyomino puzzle!

ACROSS

3 A 3-D solid dissection puzzle which, when completed, forms a cube.
6 "and the coconuts"
8 A game where you have to get from one edge to the opposite edge.
10 The same backwards as sa draw kcab emas eht.
11 A single-surfaced continuous loop.
12 The art of geometric paper-folding.
13 The board is shaped like a star, and you can move forward, diagonally, or horizontally-or jump to capture the other player's pieces.
15 A word puzzle that seems like it has a simple solution, but the puzzle has probably out-witted you.
16 The orientation, order, or arrangement of pieces in relation to each other.
17 We needed one of these to solve puzzles during the first few weeks of class.
18 A math puzzle, can be solved by "knight jumps".
19 The man, the myth, the legend.

DOWN

1 The magazine in which Martin Gardner published his work.
2 A flat model which can be flexed or folded to reveal different faces.
4 A way of encoding a message.
5 A planar geometric figure formed by joining one or more equal squares edge to edge.
7 A puzzle... made of words.
9 We (unfortunately) got one of this type of puzzle with an IU logo on it.
14 A set of seven flat shapes which fit together to make a picture.

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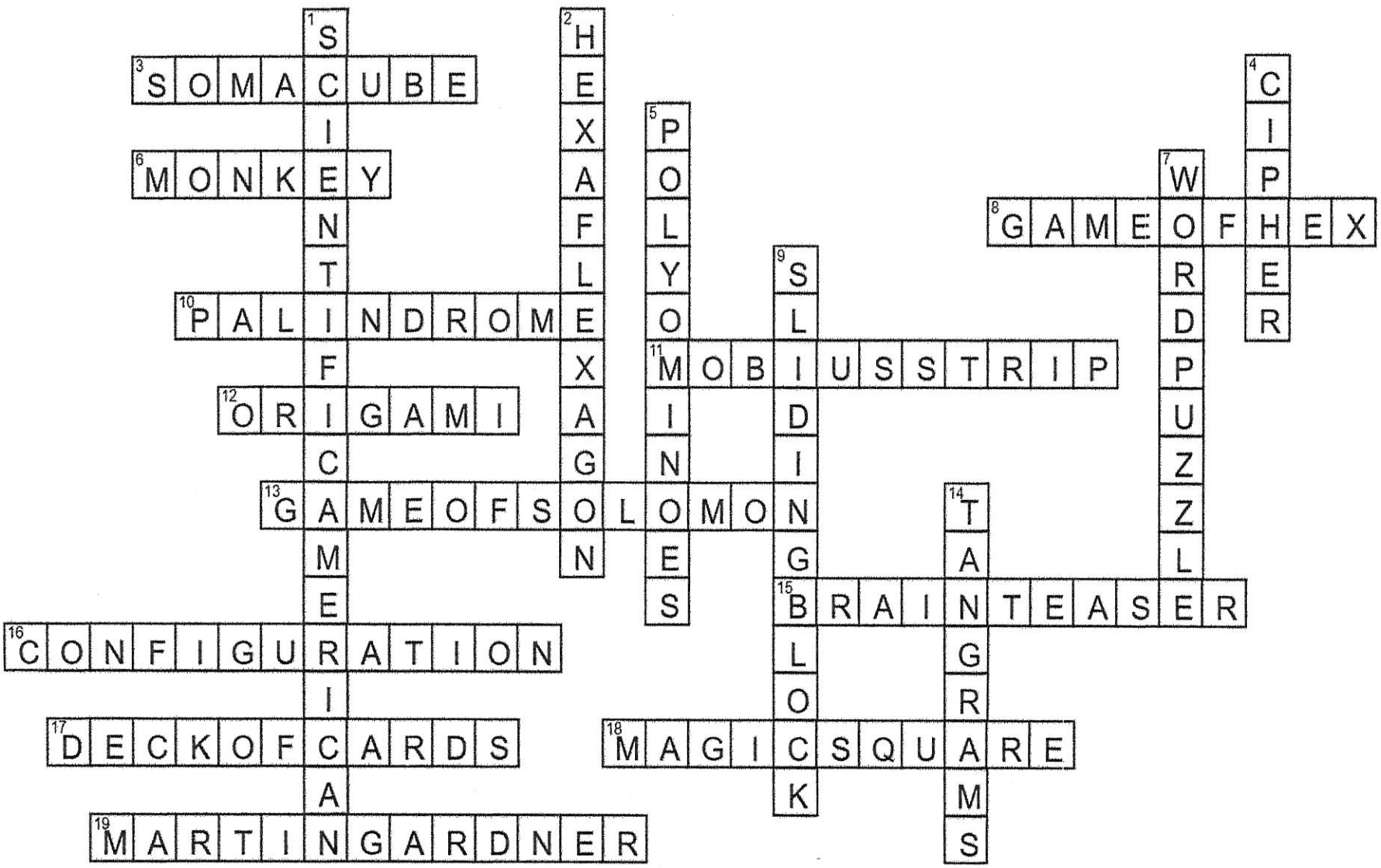
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