ALICE IN WONDERLAND

For G4G13

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Each of the ten different letters in the title is used exactly three times to form the words in the circles. Martin Gardner's famous work *The Annotated Alice* was first published in 1960 and we honor him in this essay.

Puzzle 1. Place the ten words on the diagram so that each corner of ten equilateral triangles contain words with a common letter.

Puzzle 2. Place the letters in the nodes so that 10 triangles spell the given words.

A Game. Two players alternately select words and the first to select three words with a common letter wins.
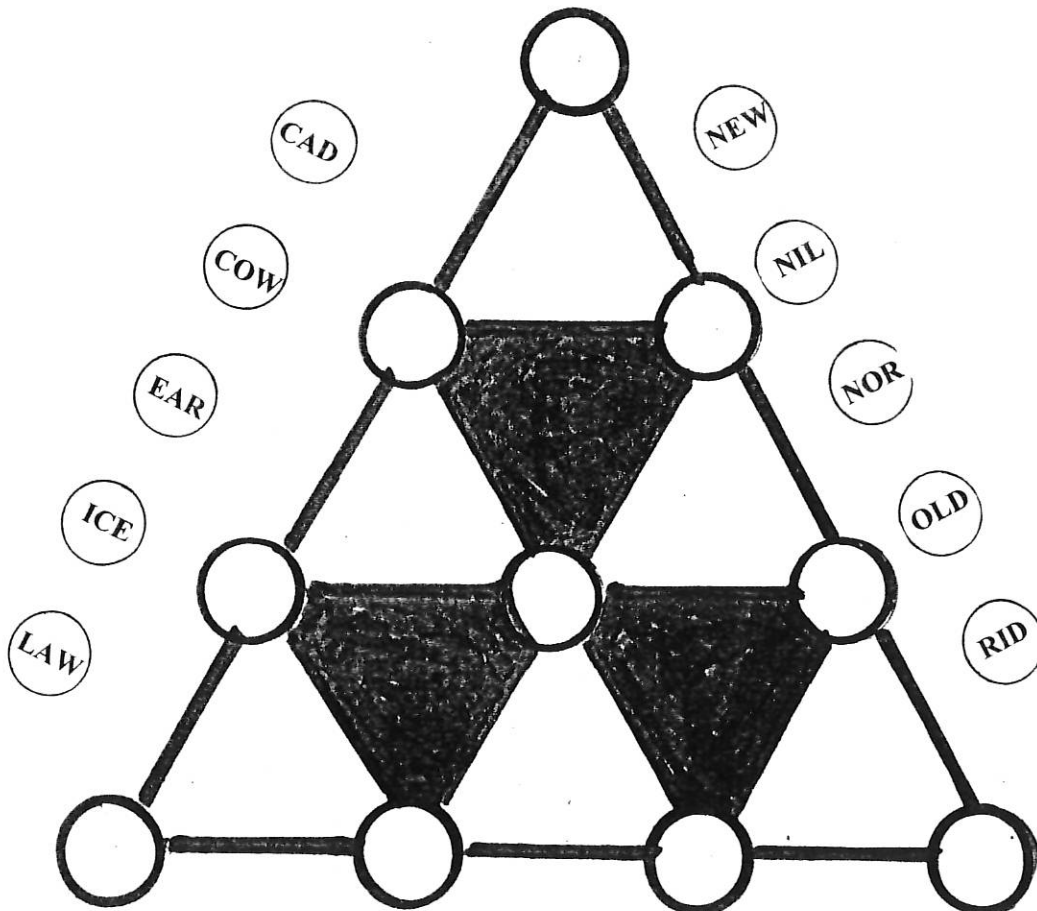
Hint: Each word has exactly three other words with which it shares no letter. Four of the words on their three contain a common letter. Where on the diagram must these four words go?

SOLUTIONS: As usual with symmetric configurations, the nodes and lines may often be interchanged.

For the Game, first can win by forcing second to waste a turn by choosing a node that doesn't help him.
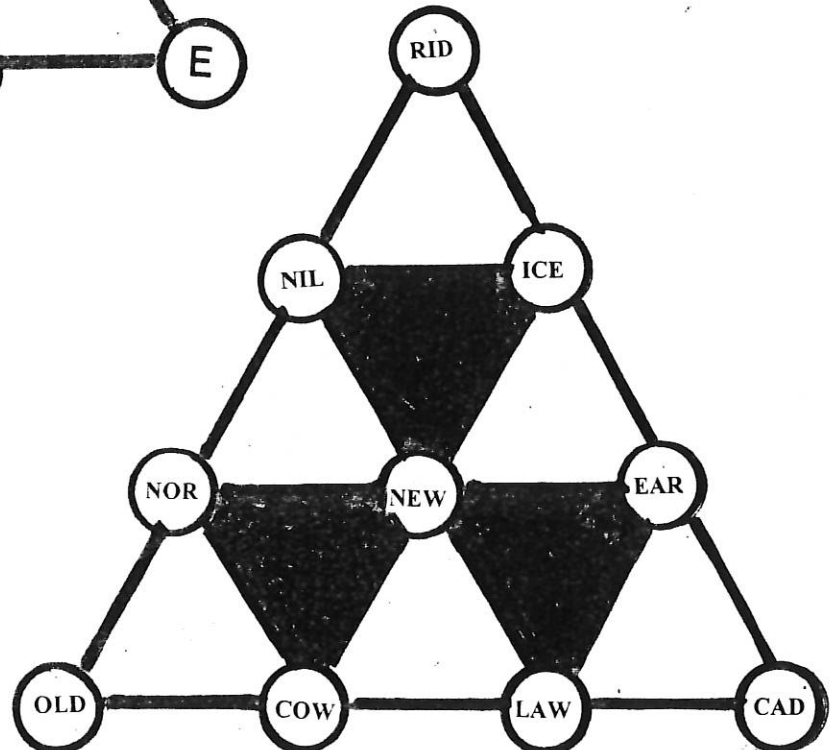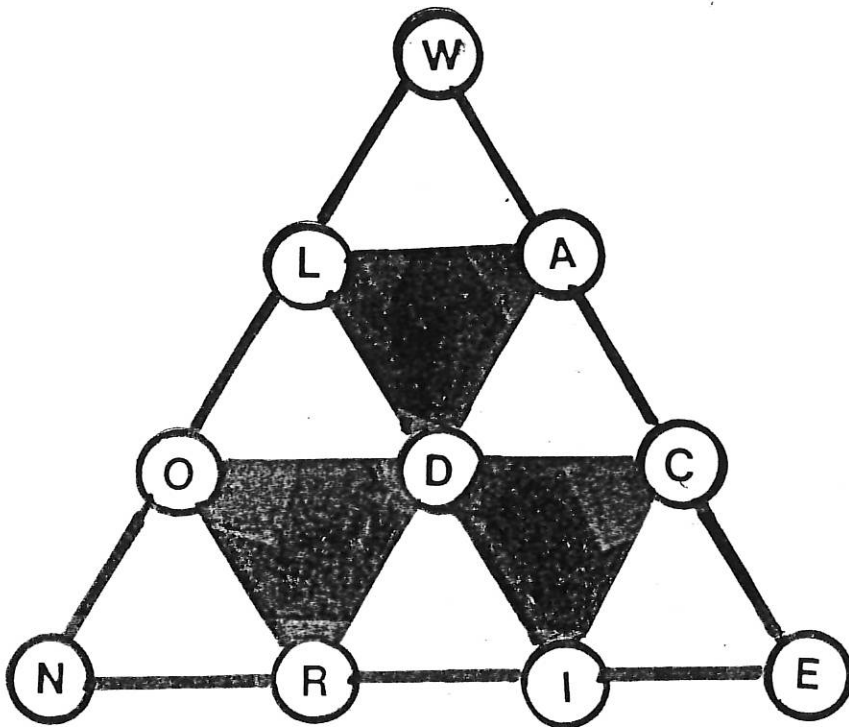
In addition to the triangle puzzle, the words can be placed on the nodes of the following diagram so that the ten lines collect three words with a common letter. This diagram is called "Fool's Cap" in the article "Configuration Games" by Jeremiah Farrell, Martin Gardner and Thomas Rodgers. It appears in *Tribute to a Mathemagician*, AK Peters, 2005. Edited by B. Cipra, E.D. Demaine, M. L. Demaine and T. Rodgers.