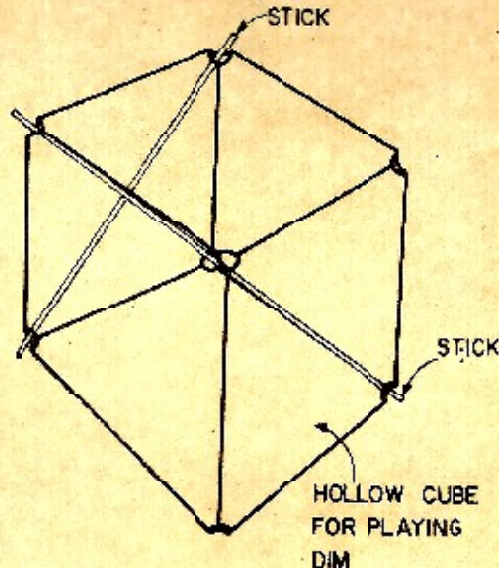


DIM: Three-Dimensional SIM

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SIM was invented recently as a competitor of Tic-Tac-Toe [3]. (See also references 1 and 2.) It can be played with pencil and paper, very rapidly. To play SIM, you place six points on a sheet of paper in a hexagonal array. There are two players and each has a different colored pencil. Play consists of connecting the points of the hexagon. The first player to form a triangle in his color, where points of the hexagon are vertices, loses.

Here is a charming version of SIM played in three dimensions. This author calls it DIM to emphasize the dimensional property. A hollow cube of clear plastic is employed. Drill holes at all vertices of the cube. The finished cube is shown in the figure. Colored sticks to place in the holes may be made from thin dowels. The holes must be big enough to allow the dowels to pass each other at intersections.



To play DIM use sticks of two different colors. Two can play the game. One version of DIM is: first player to form a triangle with three vertices of the cube loses. Another version is to complete filling all holes and count the number of triangles of one color. The player with the most triangles loses. A third version is purely three dimensional. It goes thus: the first player to form a tetrahedron with the vertices of the cube wins.

DIM is more complicated than SIM. There are only 15 ways to connect the 6 vertices of a hexagon, while there are 28 ways to connect the 8 vertices of a cube. The triangular version of DIM may be played on paper with the vertices of an octagon, but it is easier to played with a cube since the triangles are easier to discern.

Any suggestions toward the improvement of this game would be welcomed.

References

1. A. C. DeLoach, "Some Investigations into the Game of SIM", *JRM*, 4, 1, January 1971, pp. 36-41.
2. * * * Funkenbusch, "SIM as a Game of Chance", (Letter to the Editor), *JRM*, 4, 4, October 1971, pp. 297-298.
3. Gustavus J. Simmons, "The Game of SIM", *JRM*, 1, 2, April 1969, page 66.