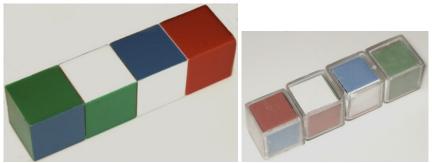
Instant Insanity



a.k.a. Katzenjammer, (Great) Tantalizer, Face-4, Cube-4, Bognar Balls, Taktikolor, Frantic, Diabolical, Damblocks, Symington's Puzzle

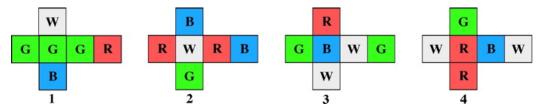
Patented by F. Schossow 1900, this popular version by Parker Brothers 1967. (standard: four plastic cubes, each 1.25 inches square, made in the U.S.A.; mini: four plastic cubes, each 5/8 inches square, made in Hong Kong)

Arrange the cubes in a line so that each side has four *different* colors (it is not possible to arrange them so that all colors on a side are the same). The puzzle, in both the standard and the mini version, was sold without a box, wrapped with the directions:





The solution is unique up to the ordering of cubes or rotating them all 180 degrees in one dimension (the mini is the same except that green and red are reversed);



Further reading:

Wikipedia Page, from: https://en.wikipedia.org/wiki/Instant_Insanity

1900 Schossow Patent, from: www.uspto.gov, patent no. 646,463

1932 Silkman Patent, from: www.uspto.gov, patent no. 2,024,541

1975 Estimating the Efficiency of Backtrack Programs, by Donald E. Knuth,

Mathematics of Computation 29:129, 121-136, from: www.ams.org

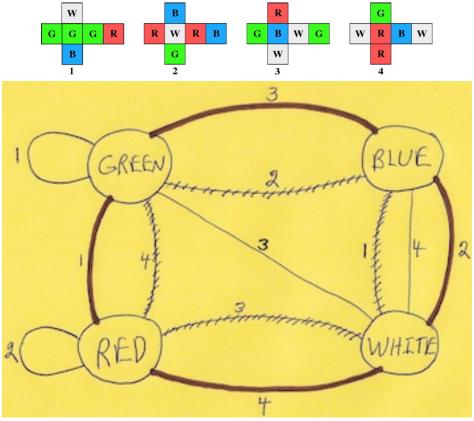
1981 Bognar UK Patent Application, GB 2,076,663.

2016 The Mutando of Insanity, by Érika. B. Roldán Roa, G4G12 Exchange Book Vol. 2, 135 - 144, from: www.gathering4gardner.org

Expressing Instant Insanity as a Graph Problem

- 1. Draw four *vertices*, and label them *green*, *white*, *blue*, *red*; it doesn't matter how they are arranged (after solving, the figure below was re-drawn to look nicer).
- 2. Number the cubes from 1 to 4 and for each of the three pairs of opposite faces on each cube, draw an *edge* between the two vertices of the corresponding colors and label that edge by that cube number (a total of 12 edges).
- 3. Look for a *Hamilton cycle* (that passes through each vertex once) with a different label on each edge; this cycle is shown with the thick edges below (it is also ok to use set of smaller disjoint cycles but that doesn't help here).
- 4. Find a second Hamilton cycle (or set of cycles) with a different label on each edge, that does not uses any of the edges in the first cycle; this cycle is shown with the hashed edges in the figure below.
- 5. Traverse the thick edge cycle to set the top edges (green to blue set the top and bottom of cube 3, blue to white to set the top and bottom of cube 2, white to red to set the top and bottom of cube 4, and red to green to set the top and bottom of cube 1).
- 6. Set the front/back edges with the hashed cycle by rotating each cube (without changing the top and bottom).

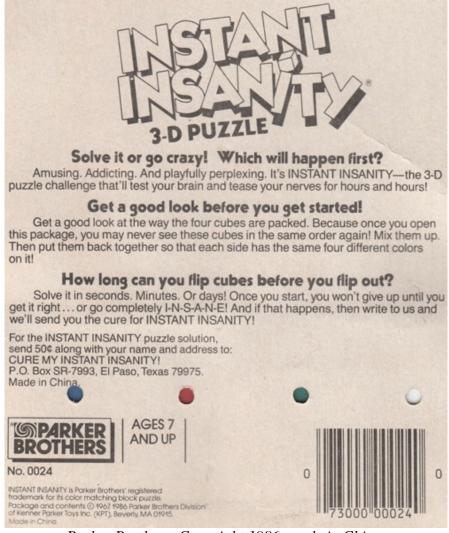
Efficient algorithms are not known for finding Hamilton cycles (let alone two disjoint ones). However, this is a small graph, and it provides an organized way to search for these two cycles rather than playing with the cubes and trying to remember what has been tried.



cycle 1: G - 3 - B - 2 - W - 4 - R - 1 - G cycle 2: G - 2 - B - 1 - W - 3 - R - 4 - G

Other Versions of Instant Insanity



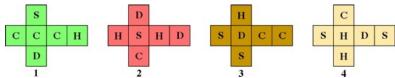


Parker Brothers, Copyright 1986, made in China. (same size 1.25 inch plastic cubes as the 1967 puzzle)

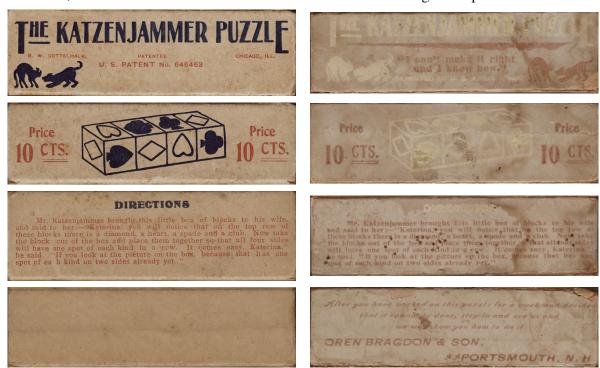


Katzenjammer Puzzle, patented by Frederick A. Schossow 1900. (cardboard tray & sleeve, and four 3/4 inch wood cubes)

Same as instant insanity with red->hearts, green->clubs, blue->diamonds, white->spades, and cube 3 has the two hidden faces reversed:



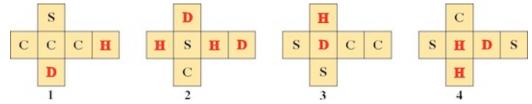
These two puzzles have identical cubes (except the green color of the clubs on the right is faded). Here are the top, front, and back, of the two boxes, which are similar but not the same, and also the bottoms, where the one on the left is blank and the one on the right has promotional text:





FOURACE Puzzle, Britain, 1913. (cardboard box 1+7/8" x 1+7/8" x 3+7/8", and four paper covered wood cubes, where the cube edges vary in length from 13/16" to 15/16")

Box says "Provisionally Protected"; *Stegman's Page* credits J. Slocum as dating this puzzle to Gamage's in Britain 1913. The solution is the same as for the Katzenjammer Puzzle:



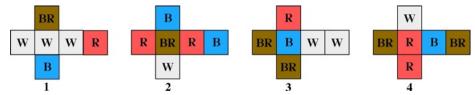
Here are the top, front, back, and bottom sides of the box (the box back advertises "The Great Card Puzzle"):





Great Tantalizer Puzzle, provisional patent no. 18945, not dated. (cardboard box, and four 3/4 inch wood cubes)

Same as instant insanity with green -> white, white -> brown, and cube 3 has the two hidden faces reversed:



Here are views of the left end, top, front, bottom, back, and right end:

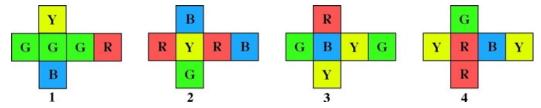


Copyright J. A. Storer

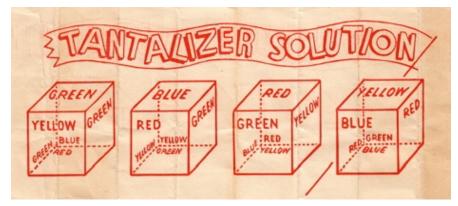


Tantalizer, made in England, not dated. (cardboard box, solution sheet, and four 3/4 inch wood cubes; packaged with tie wraps to cardboard back shown on right above)

Same as instant insanity with yellow instead of white:



The solution sheet that came with the puzzle shows the same solution as above, with cubes in the order 1, 4, 2, 3 and all rotated 180 degrees:



Here are the directions on the bottom of the box:

INSTRUCTIONS - PLACE THE 4 CUBES TOGETHER IN A ROW IN SUCH A WAY THAT 4 DIFFERENT COLOURS SHOW IN ANY ORDER ON EACH SIDE.

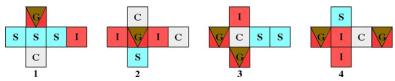
PRINTED IN ENGLAND





Symington's Puzzle, W. Symington & Co., Harborough, England, not dated. (cardboard tray & sleeve, and four 1 inch cardboard cubes)

Same as instant insanity with red -> IDEAL TABLE CREAM (red), green->SOUPS (light blue), blue -> CUSTARD POWDER (white), white -> GRAVY (red with brown triangle), and cube 3 has the two hidden faces reversed:

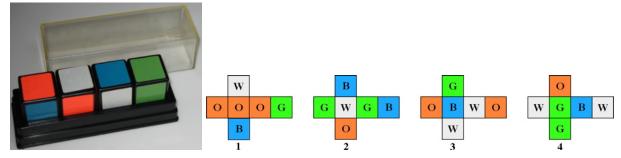


Here are views of the top, front, and back (the bottom is the same as the top):

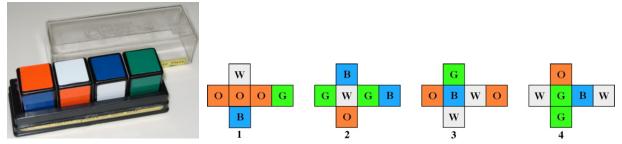


DIRECTIONS. The Puzzle is to arrange the Cubes in any order so that a Soup, Cream, Custard and Granulated Gravy appear on all four sides. With skill and patience this can be done. Can you do it? If not, send us a Post Card and we will forward you a key to the Puzzle. W. SYMINGTON & CO., LTD., Bowden Steam Mills, MARKET HARBOROUGH.





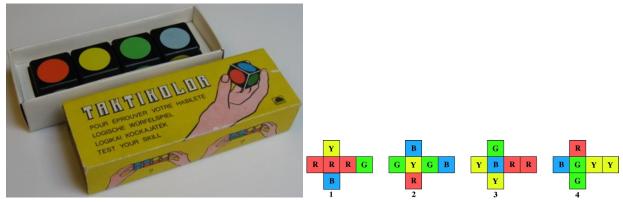
"Face 4" made by Ideal Toy Co. 1980. (tray, cover, and four 1" pieces, same as Instant Insanity with red -> green and green -> orange)



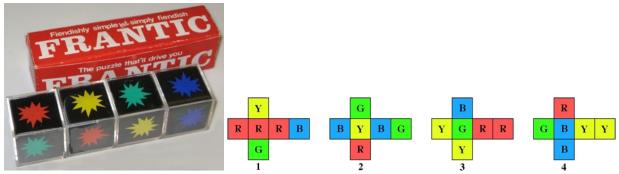
"Cube-4", except for name on cover is identical to Face-4. (tray, cover, and four 1" pieces, same as Instant Insanity with red -> green and green -> orange)



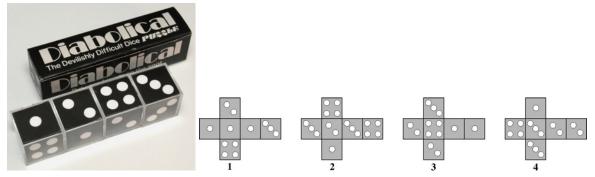
Hungarian "Bognar Buvos Golyok", patented by Jozef Bogner 1981 (GB2076663). (4 inches long, 1" diameter, balls rotate in place, white / brown / black balls, same as Instant Insanity with the 1234 order changed to 3142 and with red -> yellow, green -> red/orange, blue -> green, white -> blue)



Taktikolor, manufactured in Hungary, circa 1980? (box and four 1.5 inch square plastic pieces with colored paper stickers, same as instant insanity with green->red, white->yellow, red->green, and for both cubes 3 and 4 the hidden faces are reversed)



Frantic, Wellingtons Ltd Stamford, UK, 1982. (box and four 1.5 inch square plastic pieces, same as instant insanity with green->red, white->yellow, red->blue, blue->green and with hidden faces of cubes 3 and 4 reversed)

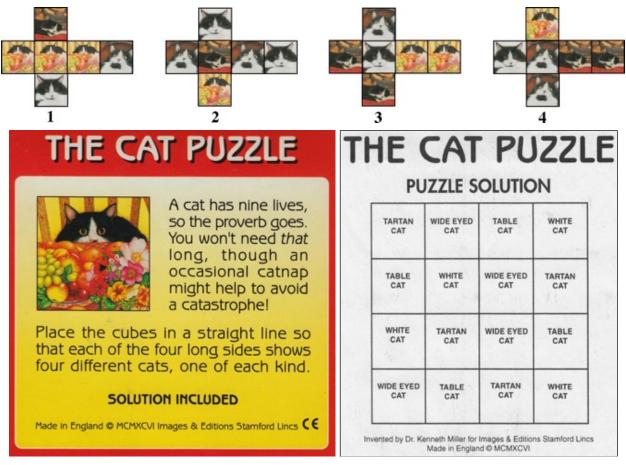


Diabolical, Wellingtons Ltd, Stamford, UK, 1982. (package and four 1.5 inch square plastic pieces, same as instant insanity with green->1, white->2, red->3, blue->4, and with hidden faces of cubes 3 and 4 reversed)



The Cat Puzzle, Copyright 1996 K. Miller and Images & Editions Stamford Lincs, England. (cardboard box 4.25" x 4.25" x 1.5", solution sheet, and four 1.375" plastic cubes)

The box back and solution sheet are shown below. The solution is the same as instant insanity with the hidden faces of cubes 3 and 4 reversed, where red = "WIDE EYED CAT", green = "TABLE CAT", white = "TARTAN CAT", blue = "WHITE CAT" (the columns of the solution sheet correspond to cubes 1, 3, 4, 2):







Crazy Cubes, circa 1960's?

(four 1.25 inch square wood pieces labeled with whisky and numbers; same as instant insanity with green \rightarrow 1, white \rightarrow 2, red \rightarrow 3, blue \rightarrow 4)

Sold solved with plastic over the pieces in a tray, with the directions on the back of the tray and the solution sheet under the pieces, where the cubes are arranged as shown in these photos (left is top and front, right is bottom and back):

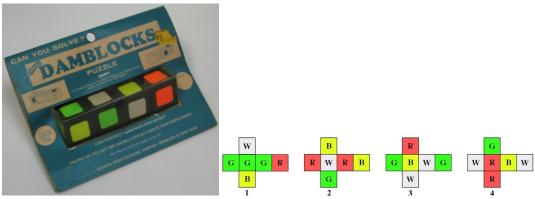




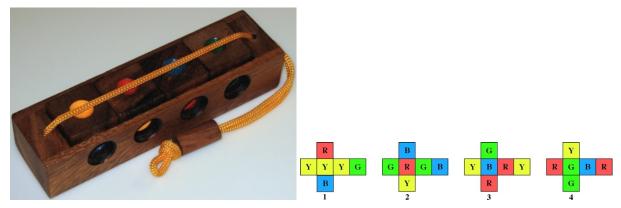
By exchanging the right two cubes and then spinning each cube 180 degrees, the same presentation as for instant insanity on the first page is obtained:



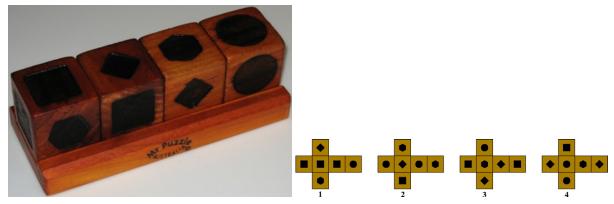




Damblocks, Schaper Manufacturing Co., Minneapolis, Minn., 1968. (package and four 1.2 inch square plastic pieces with colored paper stickers, same as instant insanity with white->yellow)



Made by RainTree and purchased 2000. (box and 4 pieces, each 7/8" inches square, same as Instant Insanity with red -> green, green -> yellow, white -> red)



Made by Mr. Puzzle Australia and purchased 2005. (tray and 4 pieces, each 1.5 inches square, same as Instant Insanity with red -> circle, green -> Square, blue -> hexagon, white -> diamond)