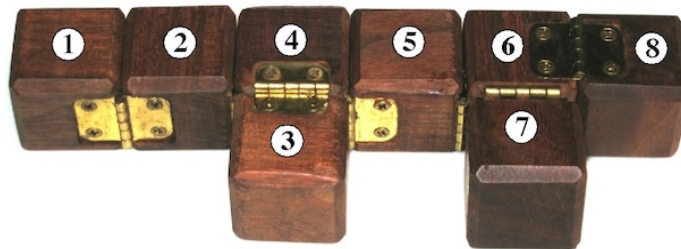


# Hinged Cubes



*Copyright James A. Storer 2009; U.S. patent 8,393,623 March 2013.*  
 (Kingwood with brass hinges, 2.25 inches square assembled)

Fold the eight cubes into a larger 2x2x2 cube; there are 7 hinges:



- Hinge 1 joins cube 2 to cube 1, on the front faces.
- Hinge 2 joins cube 3 to cube 2, on the back face of 3 and the right face of 2.
- Hinge 3 joins cube 4 to cube 3, on the top faces.
- Hinge 4 joins cube 5 to cube 4, on the front faces.
- Hinge 5 joins cube 6 to cube 5, on the left face of 6 and the right face of 5.
- Hinge 6 joins cube 7 to cube 6, on the back face of 7 and the front face of 6.
- Hinge 7 joins cube 8 to cube 6, on the top faces.

Fun but not too hard; people often spend 30 minutes or so to solve. Solid hinges suggest folding one cube at a time, which can lead to a position like the one shown on the right above.

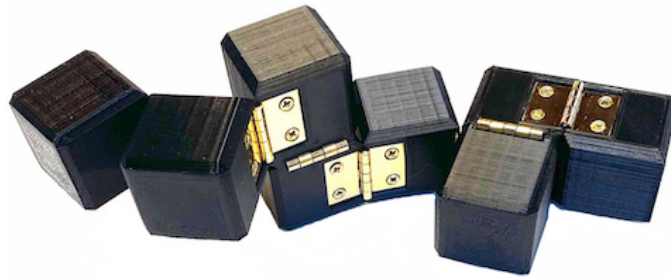
Construction has four types of hinge cutouts:

- Type A: Cube 1,7,8: Top-Right
- Type B: Cube 2,5: Top-Right, Left-Up
- Type C: Cube 3,4: Top-Right, Back-Up
- Type D: Cube 6: Top-Right, Front-Up, Left-Right

The types are arranged in this order and then rotated appropriately to attach hinges:

1	2	3	4	5	6	7	8
A	B	C	C	B	D	A	A

## A Basic 3D Print of the Hinged Cubes



*Made by J. A. Storer, 2022 (2.25" square assembled; a 2" version was also made).*

Prints the 8 cubes and then attaches the same brass hinges used for the original wood version, where precise cutouts and screw holes are made for the hinges.

## A Full 3D Print of the Hinged Cubes



*Made by Andrew Soshea, 2022 (2.25" square assembled).*

This clever design prints a fully working puzzle. The hinge pins have a tolerance around them so that no cracking of joints is needed after printing. The box is a separate fully working 3D print; writing on the box top and bottom is via a thin initial layer before changing colors.