# Dodecahedron Maze

3D Printy

VIEW IN BROWSER

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## Summary

A confounding dodecahedron maze.

Toys & Games > Puzzles & Brain-teasers

Tags: dodecahedron maze puzzle

A confounding dodecahedron maze.

https://youtu.be/9FNP0igRGn4

### Printing

- Print at least 12 tiles of the 17 layouts available.
- Print 20 corner brackets
- All parts can be printed without supports.
- Corner braces can be printed vertically, but a brim may be required for bed adhesion.
- Switch out filament colors mid print to get the maze to pop!

### Hardware

- 6mm ball bearing (a smaller bearing will work too) https://www.amazon.com/gp/product/B07DKSN46T

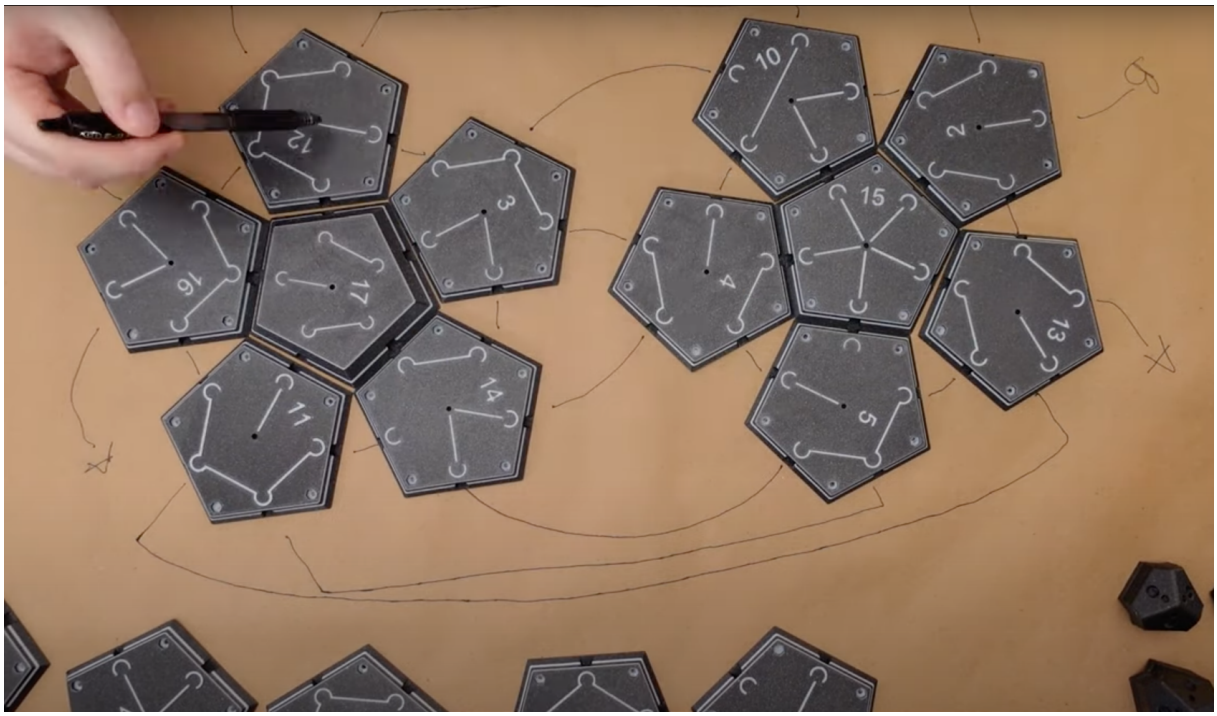
- 10mm long M3 socket head hex bolts x 60
  https://www.amazon.com/gp/product/B07CMSBQ11
- Thin clear plastic sheet (polycarbonate, plexiglass, etc) that's 1/32" or about 0.75mm
  https://www.amazon.com/gp/product/B08SW3H5DP

## Assembly

Cut plastic sheeting into 12 equilateral decagons that are 79mm from edge to edge. An SVG file is available for laser cutters and a 3D printable guide is available for cutting by hand.

This puzzle is modular and comes with more tiles than can actually be used in a single 12-sided dodecahedron. There is no one correct way to lay out the maze, but there are many possible incorrect layouts that would create impossible mazes.

To avoid creating an impossible maze, lay out the tiles upside-down in two hemisphere patters as shown below. Use the built in cheat sheets printed on the bottom of every tile to trace the a path from one starting tile to the center of every other tile. Swap out or rotate tiles as needed until a valid layout is achieved.
Hint: use **Tile #1** or **Tile #15** for your starting tile. Both of these immediately branch out in all directions.




Once the layout is set, use the corner brackets and bolts to construct both hemispheres. It's easiest to slide in the clear plastic sheets as you assemble.
Drop in the ball bearing

Connect the two hemispheres using the remaining corner brackets.

Optional: use transfer text, paint markers, laser engraving to number each side of the maze.

### Ways to Play

1. Easy - Start at any exit point and navigate to any other exit point
2. Medium - Start at any exit point and navigate to a specific exit point chosen by another person or by rolling a die.
3. Difficult - Start at any exit point and reach every other exit point in any order.
4. Grueling - Start at the first exit point and go to every other exit point in order.

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## Model files

**Tiles** 17 files

**tile-1.3mf**

**tile-2.3mf**

**tile-3.3mf**

**tile-4.3mf**

**tile-5.3mf**

**tile-6.3mf**

**tile-7.3mf**

**tile-8.3mf**

**tile-9.3mf**

**tile-10.3mf**

**tile-11.3mf**

**tile-12.3mf**

**tile-13.3mf**

**tile-14.3mf**

**tile-15.3mf**

**tile-16.3mf**

**tile-17.3mf**

## Misc

2 files

**corner-brace.3mf**

**magnet-marker.3mf**

## Templates

5 files

**template-tile.3mf**

**template-deep-tile.3mf**

**template-deep-tile.step**

**template-tile.step**

**template-clear-lid.3mf**

## Other files

**template-clear-lid-guide.svg**

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