01

Brass Monkey Two

Puzzle Goal: **Disassemble and reassemble.**

Materials: Brass

Classification: OPN-OTH, INT-CART

02

Chinese Soft Ring

Puzzle Goal: **Separate three loops without using force.**

Materials: Stainless steel, nylon

Classification: Disentanglement

Notes: The rope loops should not be forced through the gaps in the rings.

03 Conjoined Cubes

Puzzle Goal: **Return the puzzle to its starting state with one color per side.**

Materials: Laser sintered nylon, vinyl, screws, springs

Classification: SEQ-GRP

Notes: 2x2x2 operations are the only moves available on the puzzle, and only the cube that the switch is currently in can be turned. When the shape is restored to the original two cubes configuration (ignoring the colors), the switch can be moved to the other cube, and scrambling (or solving) can continue.

04

Cover Up

Puzzle Goal: **Place the T-shaped piece on a flat surface and hide it under the other four pieces.**

Materials: Wenge, holly

Classification: Slocum 1.2 : 3-Dimensional Assembly

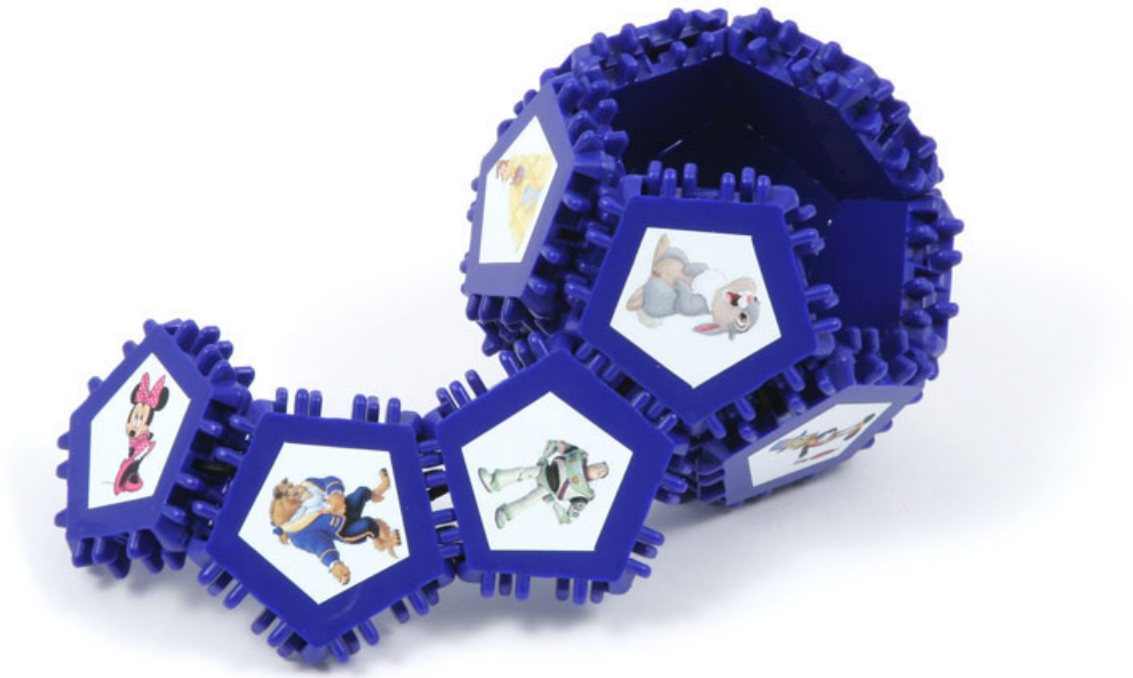
05

Disney

Puzzle Goal: **The 12 tiles can be folded into a dodecahedron many different ways. Each tile has a Disney character on one side. Find the character which cannot appear alone on the outside of a folded dodecahedron.**

Materials: ABS plastic

Classification: 3D Folding



06

Donut Perplex

Puzzle Goal: **Put the 13 pieces together to form a donut.**

Materials: Wood PLA

Classification: ASS-STRA

07

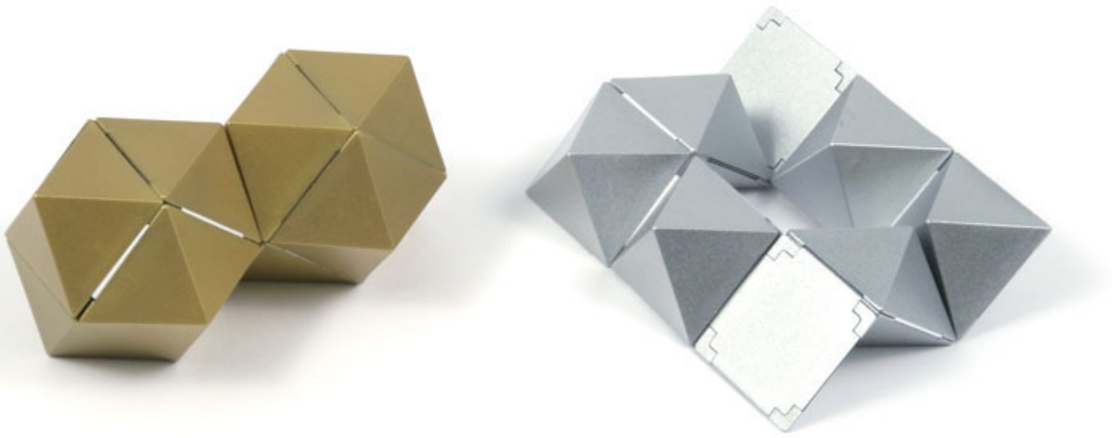
Double Cube

Puzzle Goal:

1. **Fold one piece to form a rhombic dodecahedron.**
2. **Fold both pieces to form a pair of connected rhombic dodecahedrons.**

Materials: Plastic

Classification: Folding puzzles (FOL-HGCL)



08

Drawer Box

Puzzle Goal: **Pull out all three drawers.**

Materials: PLA – 3D printed

Classification: Puzzle Box (Slocum 2.1)

09

Dunant

Puzzle Goal: **Pack five pieces into the box.**

Materials: Maple and bulletwood

Classification: 3D Assembly

10

8 by 8 Squeer Puzzle

Puzzle Goal: **Solve the jigsaw - arrange the 64 pieces in an 8x8 grid.**

Materials: Acrylic

Classification: 1.1 2-Dimensional Assembly

11 Escape From the Bastille

Puzzle Goal: **Move the man in the iron mask (a ball bearing) from his cell on the ground floor of the tower (labelled oubliette) to the gate on the left side and then to the window marked liberte. It appears that he can take the underground passage directly to the gate but this passage is blocked by three guards (larger ball bearings).**

Materials: ABS plastic, ball bearings

Classification: RTF-OTH (route finding other)

Notes: In order to help him reach his destination you will need to find a key, move him through secret passages and down a spiral staircase. As you help him move around the Bastille you will see him appear at various windows. If at any time he gets lost before arriving at the gate, gently shaking the Bastille with the oubliette corner downwards will reset the puzzle and send him directly back to the oubliette cell.

12

FantasTIC

Puzzle Goal: **Disassemble and reassemble the cube.**

Materials: Zebrawood and tigerwood

Classification: Interlocking

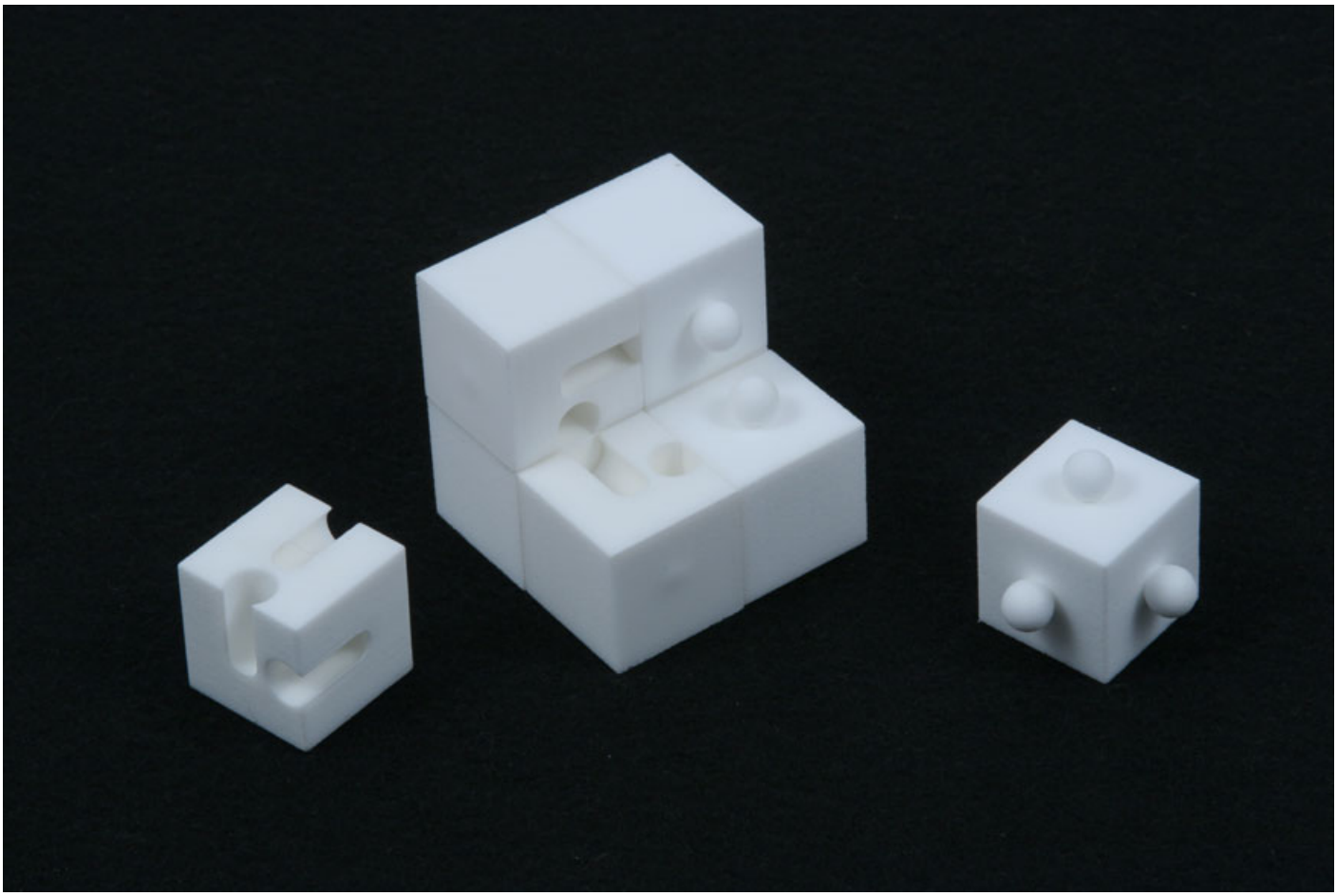
13

4+4

Puzzle Goal: **Assemble the eight pieces to make a 2×2×2 cube without any exterior bumps (holes are allowed).**

Materials: Versatile plastic

Classification: 3.2 Interlocking Solid (Geometrical Object)



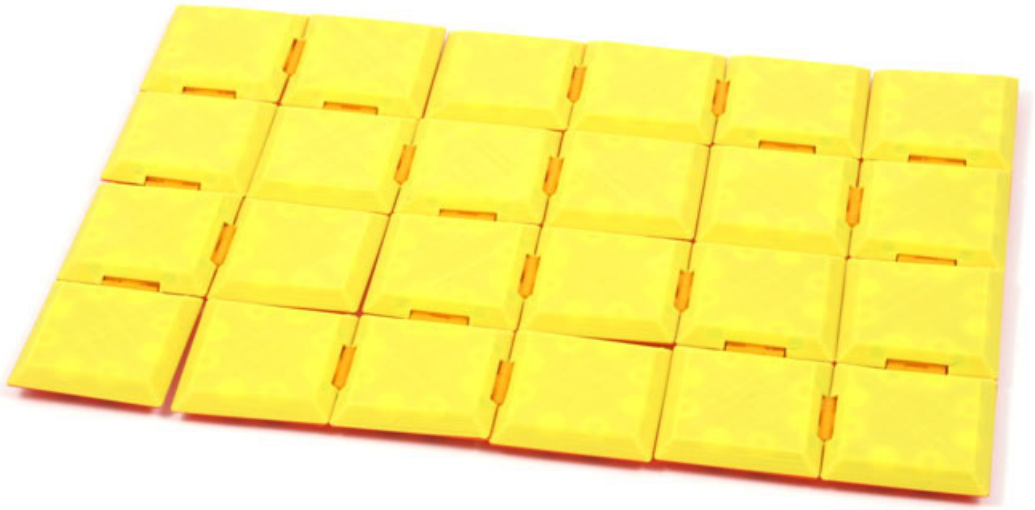
14

4! Fold

Puzzle Goal: **Fold a polycube.**

Materials: 3D-printed PLA and magnets

Classification: 9. Folding



15

4L Basket

Puzzle Goal: **Pack the four pieces into the box (basket).**

Materials: Wood

Classification: 3D Assembly

16

4.5

Puzzle Goal: **Put all five pieces into the frame.**

1. **Side A: one bump**
2. **Side B: two bumps**

Materials: Acrylic

Classification: 1.1 Put-Together (2-Dimensional)

17

4-Beam Burr

Puzzle Goal: **Take apart and put together.**

Materials: Maple and mahogany

Classification: Burr

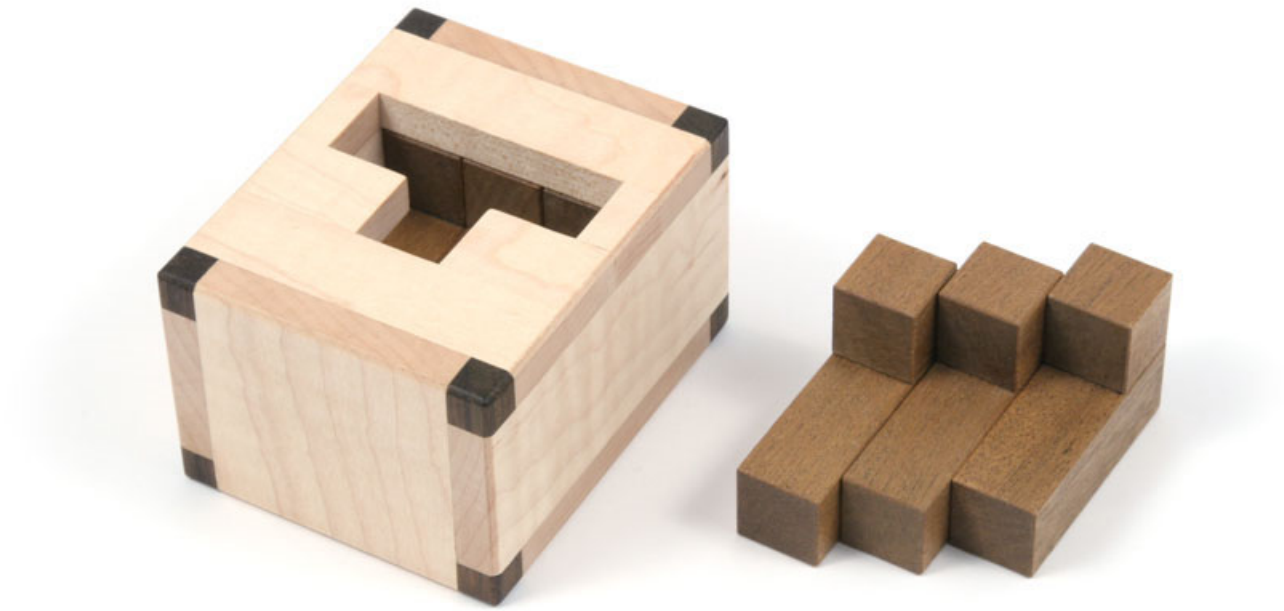
18

Hat Trick

Puzzle Goal: **Pack/unpack the pieces into/from the box.**

Materials: Wood

Classification: 1.2 3D



19

Hex-Pave

Puzzle Goal: **Pack all 15 pieces into the size-8 regular hexagonal tray.**

Materials: Laser-cut acrylic

Classification: 2 Dimensional Assembly / ASS-STRA

Notes: This is the set of all possible hexagons with only 120° angles and edge lengths of 1, 2, or 3 units.

20 Hinge-ominoes

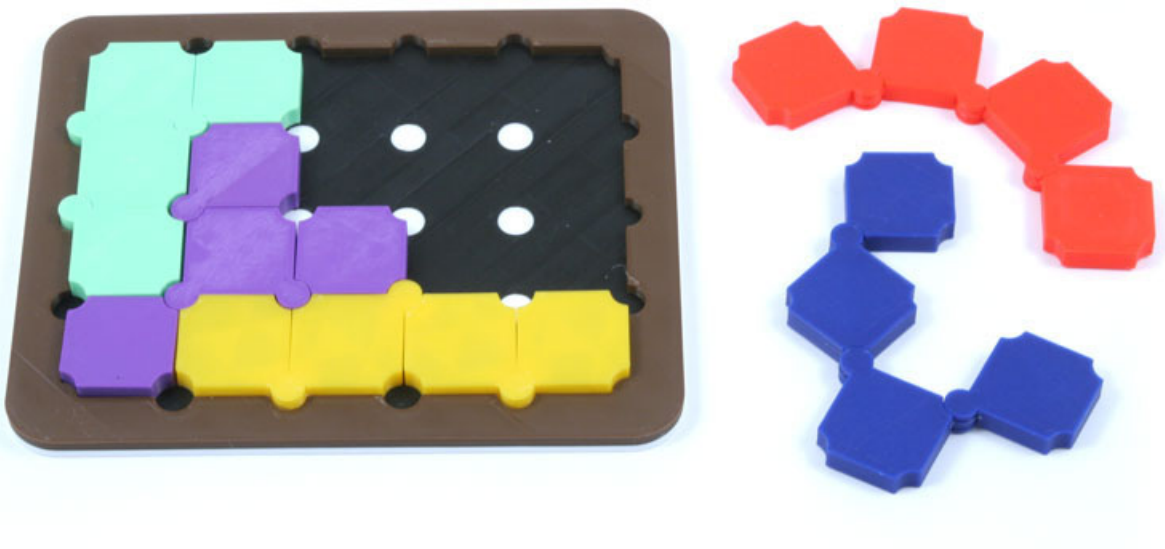
Puzzle Goal:

0. **Place the five hinge-ominoes into the tray.**
1. **Place the five hinge-ominoes into the tray so that no white dots are visible.**
2. **Place the five hinge-ominoes into the tray so that exactly seven white dots are visible.**
3. **Place the five hinge-ominoes into the tray so that no two pieces are the same shape.**

Materials: 3D printed PLA

Classification: Put-Together Assembly

Notes: Each of the five pieces represents a unique way four squares may be connected by corner hinges.



21 The HoKey CoKey Lock

Puzzle Goal: **Open the shackle. Close the shackle.**

Materials: Brass padlock, aluminum keychain, steel keys

Classification: OPN-LOCK

22

Ice 9

Puzzle Goal: **Place all the pieces into the frame.**

Materials: Acrylic

Classification: 1.1 2 Dimensional Assembly

23

Inside Track

Puzzle Goal: **Scramble and then restore the color pattern with colored pieces making circles around the colored centers, and a "petal" pattern of the white pieces.**

Materials: PLA plastic, M2 screws, superglue

Classification: Sequential Movement

24

Jack in the Box

Puzzle Goal: **Discover secret movements to open the box and reveal a deck of playing cards.**

Materials: Wenge, holly, bocote

Classification: 2.1 Trick or Secret Opening

25

La Boomba!

Puzzle Goal: **Open the box.**

Materials: Color pencils, electronics

Classification: Slocum 2.1

26 Logical Progression

Puzzle Goal: **Assemble a 4x4x4 cube.**

Materials: Walnut, oak

Classification: Interlocking Solid

27

LOL

Puzzle Goal: **Assemble the five pieces to form the acronym LOL, so that the three letters all have the same dimensions.**

Materials: Wenge, metal

Classification: Assembly

28

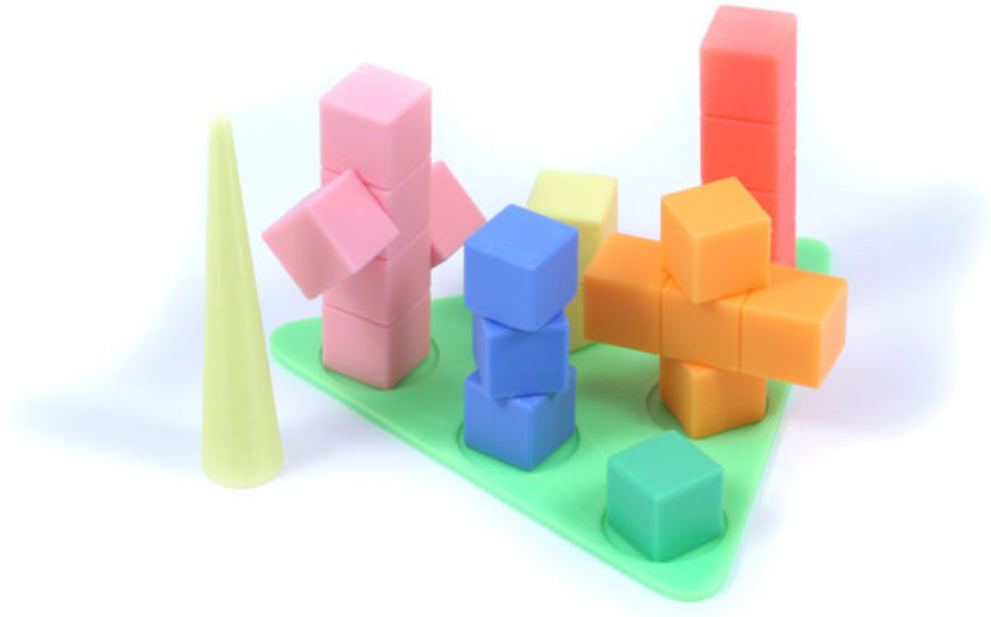
Magic Triangle

Puzzle Goal: **Balance the six pieces on the tray with the following steps:**

1. **Place the pieces inside the six spots on the top of the tray.**
2. **Place the tray with pieces placed on the top of the yellow pillar.**
3. **Maintain balance for more than 10 seconds without external assistance.**
4. **If you think the yellow pillar is too easy, then try the green pillar.**

Materials: PLA

Classification: OTH-BAL



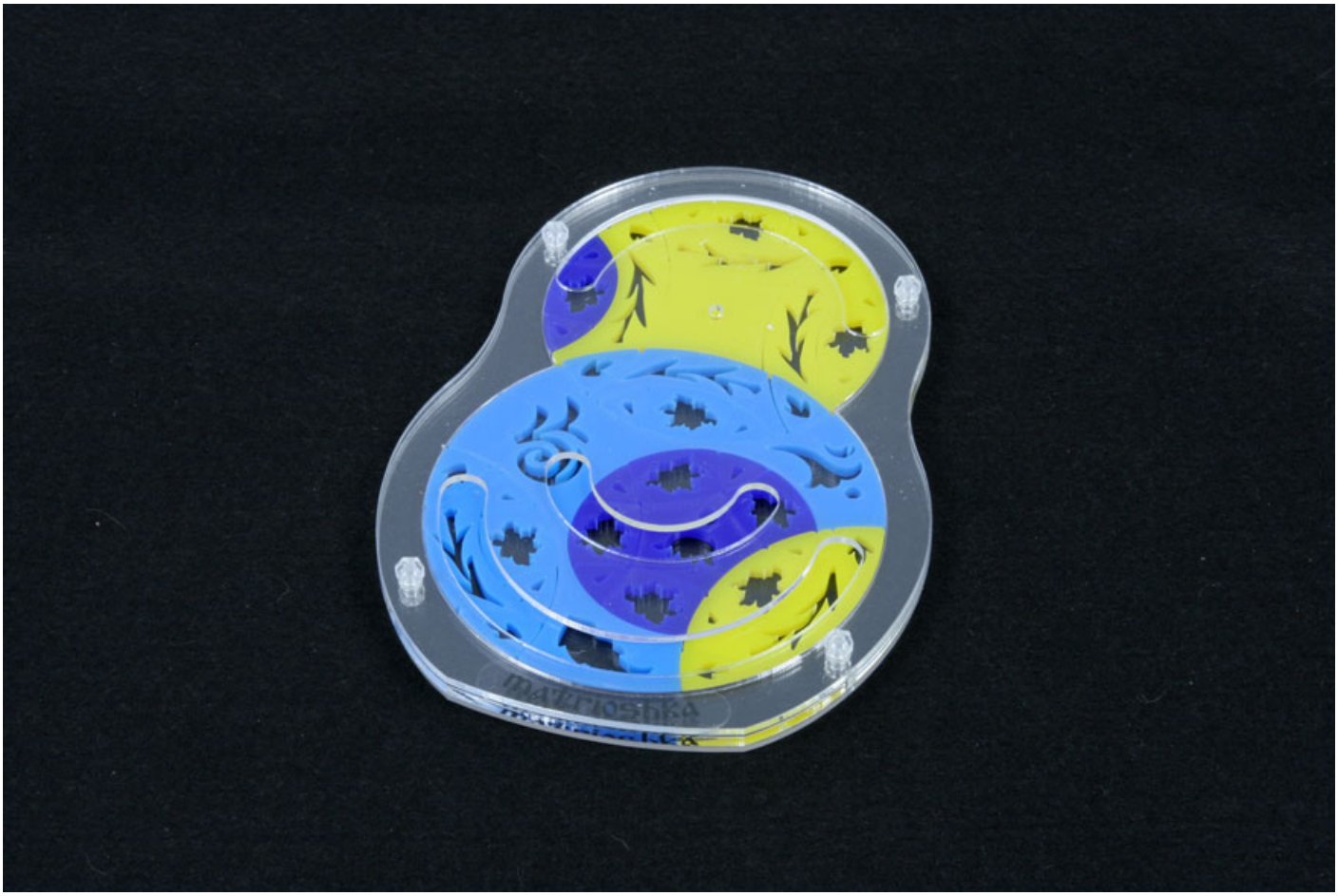
29

Matrioshka

Puzzle Goal: **Mix up and restore the puzzle to the pattern shown.**

Materials: Acrylic, plastic

Classification: 5.4 Rotating Pieces



30

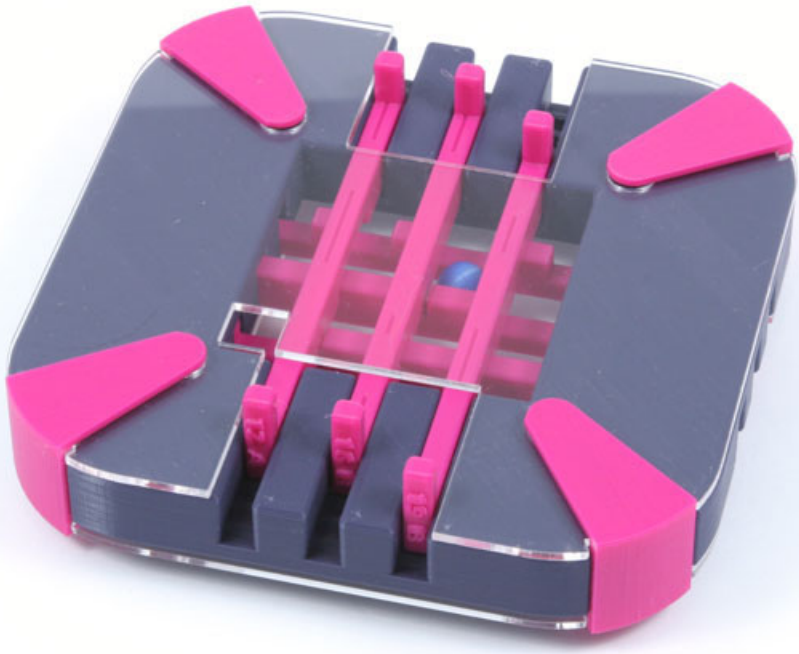
Mazeburr L

Puzzle Goal: **Free the ball through the small hole.**

Materials: PLA and acrylic

Classification: 5.5 Maze and Route

Notes: Alternative challenges are possible by using alternative sliders.



31 Mondrian Blocks

Puzzle Goal: **Select a challenge card. Use the gray pieces to fill the black space, fill the remaining space with the colored pieces.**

Materials: ABS

Classification: 2D-Assembly

Notes: 20 challenge cards and purple solutions are provided (selected from over 1000 puzzles).

32

Multiball

Puzzle Goal: **Open the box.**

Materials: Ash, wenge, walnut, stainless steel, acrylic

Classification: Take-Apart

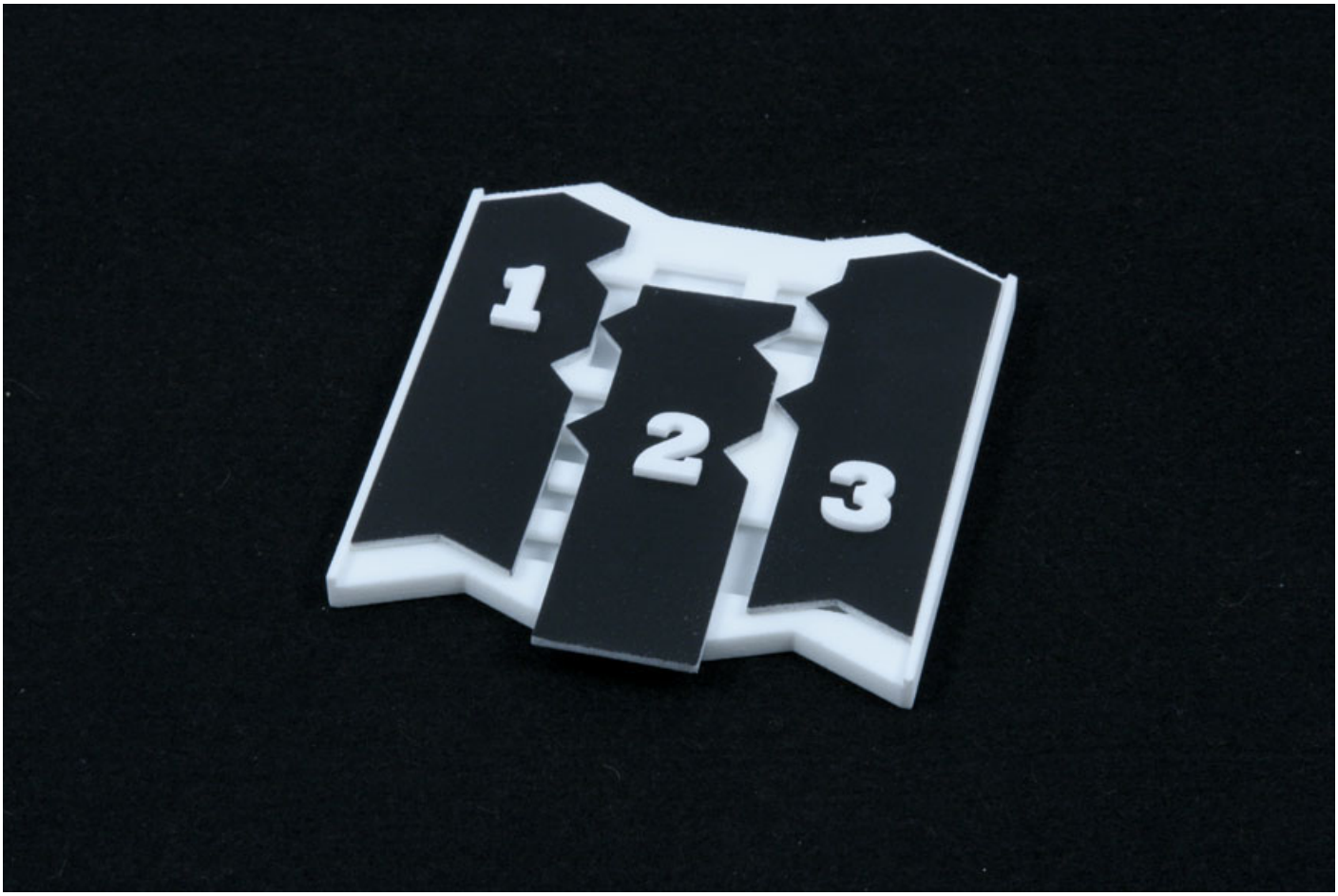
33

1-2-3

Puzzle Goal: **Insert the three black pieces into the white maze and maneuver them so that they neatly fit together in the order 1-2-3. A secondary challenge is to remove them. Pieces should always be orientated vertically.**

Materials: Plastic

Classification: 5.5 Maze & Route



34

Orange Perplex

Puzzle Goal: **Put together the five 3-slice pieces to form an orange.**

Materials: Orange PLA

Classification: ASS-STRA

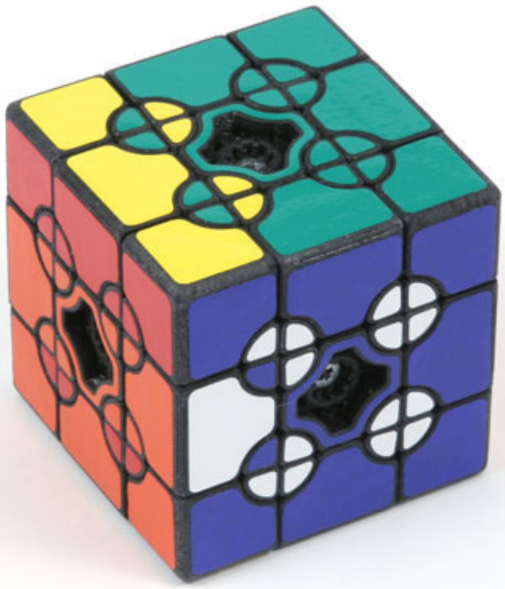
35

Orbit Cube

Puzzle Goal: **Mix up and restore the cube, where each face is a single solid color.**

Materials: ABS, PLA (FDM)

Classification: Sequential Movement - 5.4 Rotating Pieces



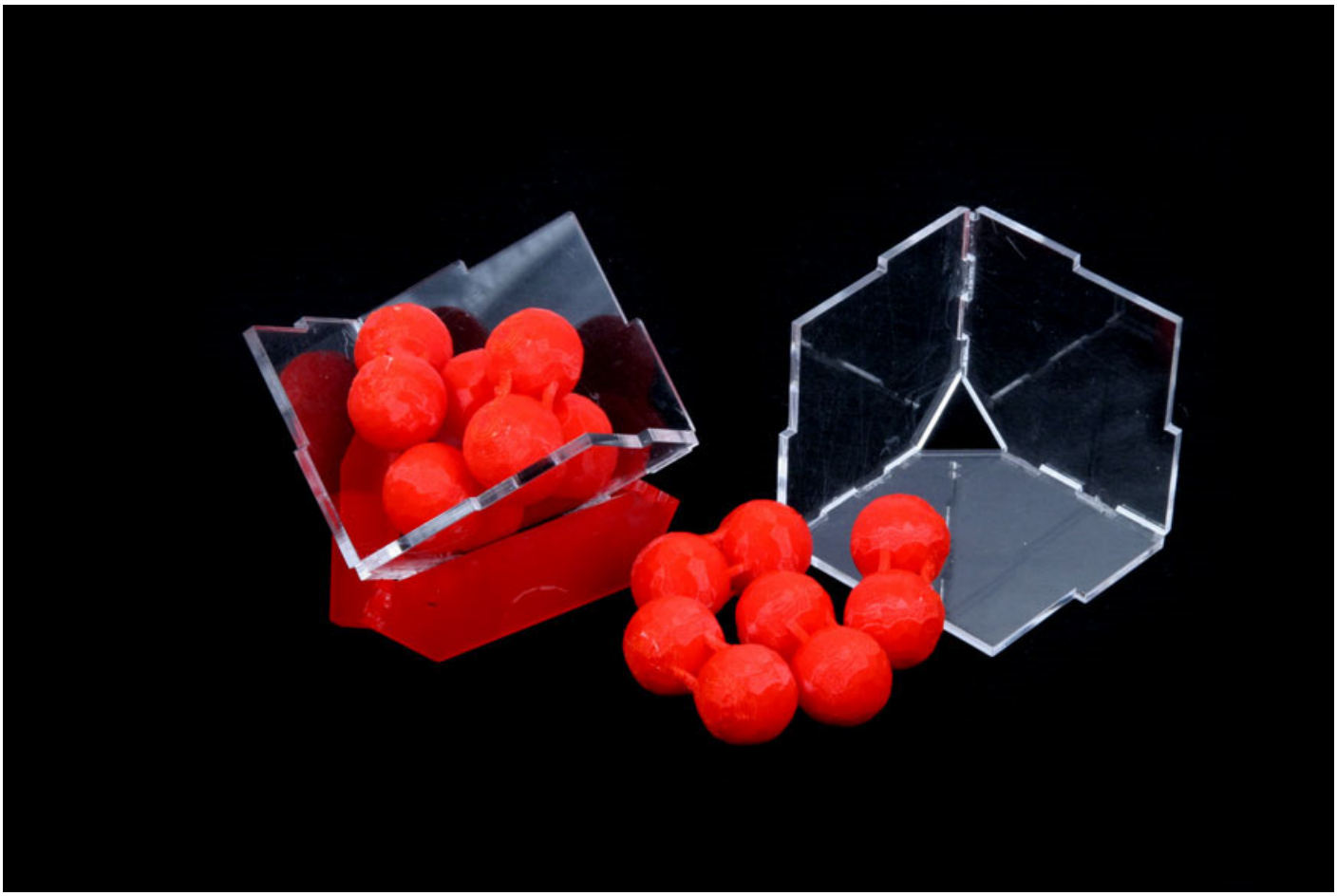
36

Outstandin'

Puzzle Goal: **Place all the pieces into the cubic shell so the two halves fully close.**

Materials: Laser-cut acrylic, 3D-printed plastic

Classification: ASS-OTH



37

Peamaru

Puzzle Goal: **Arrange the pieces so that all the dots are paired face-to-face, and the structure is stable.**

Materials: Maple and bulletwood

Classification: Put-Together

38

PedanTIC

Puzzle Goal: **Disassemble and reassemble the cube.**

Materials: Rosewood and white oak

Classification: Interlocking

39

Petit Ring

Puzzle Goal: **Build the apparent 3x3x2 block inside the frame.**

Materials: Wood and MDF (color print)

Classification: Interlocking

40

Progressive Pyramid

Puzzle Goal: **Using some or all of the pieces, build a symmetric (multi-layer) shape, such as the regular octahedron (after removing the L3 piece)**

Materials: 3D-printed steel, laser-cut wood

Classification: 1.2 3D Assembly, ASS-POLY

Notes: See solution page for additional challenges. At least 24 symmetric "pyramids" can be built, five of them using all seven pieces.

41

Puzzleduck Pastures

Puzzle Goal: **Help the little fairy unlock and open the door.**

Materials: Wood, magnets, steel, brass, abalone

Classification: Sequential Discovery

42

Rocket Man

Puzzle Goal: **Disassemble and reassemble.**

Materials: Jatoba, purpleheart, padauk

Classification: Interlocking Solid

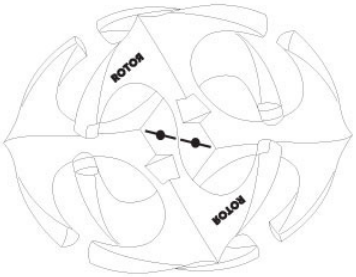
43

Rotor

Puzzle Goal:

1. Separate the rotors from starting position (where the indicators are aligned).

2. Reassemble the rotors to the start position.



Materials: Brass

Classification: Slocum - Take-Apart

Notes: Once you take the parts apart, you may enjoy the rotors as a top.

44

Rules of Attraction

Puzzle Goal: **Make a stable cube, so that the hidden magnets do not disturb the proper alignment.**

Materials: wood, cube magnets

Classification: Slocum 1.3

45

Slammed Car

Puzzle Goal: **Open the box.**

Materials: Wood, metal

Classification: Sequential Discovery

46 Slider

Puzzle Goal: **Disassemble the puzzle.**

Materials: Zinc alloy

Classification: 4.1 Disentanglement / Cast Iron and Sheet Metal

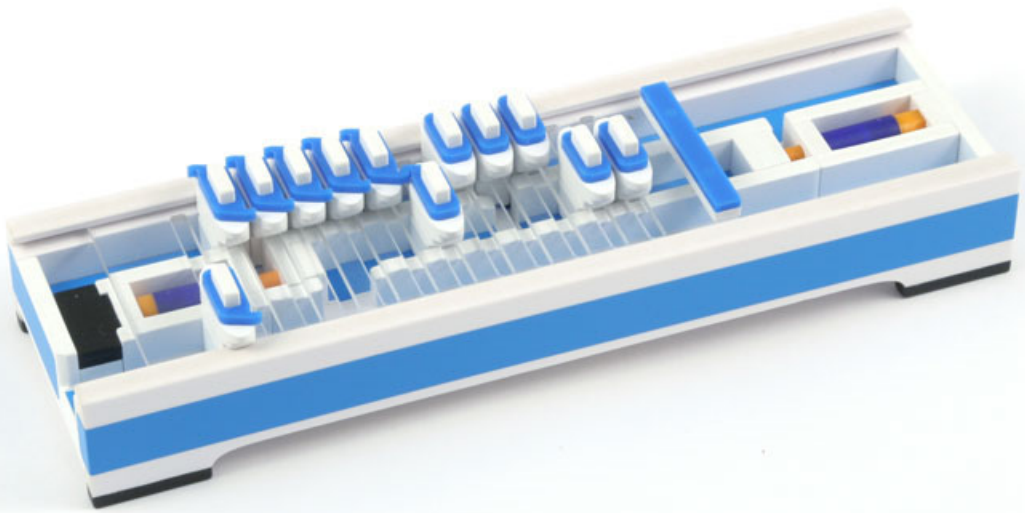
47 Sluice and Ships 6:5/N12

Puzzle Goal:

1. **Free the ships by moving through the locked chamber into the opposite side compartment. Find the shortest way.**
2. **Return them into the starting compartment. Using various strategies find the shortest solution.**

Materials: Vinyl, acrylic

Classification: Sequential Movement 5.3



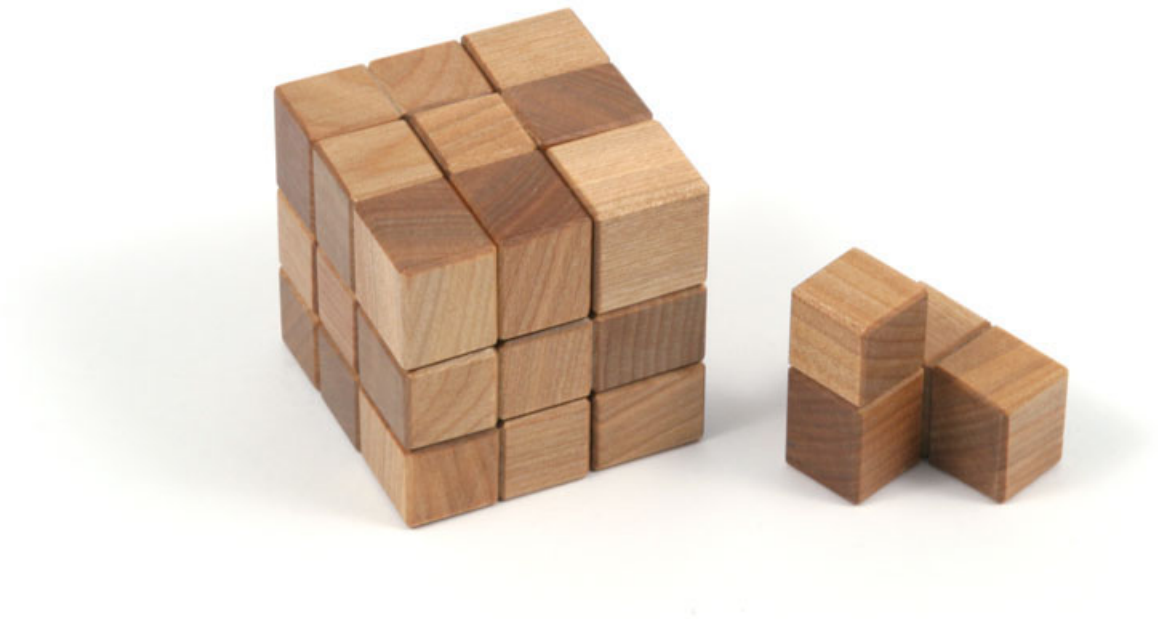
48 Somaa Cube

Puzzle Goal: **Assemble the seven pieces to form a cube.**

Materials: Ipe

Classification: 1.2 3-Dimensional Assembly - Non-Interlockng

Notes: The original Soma Cube has 240 solutions. The Somaa Cube uses the same shapes but slightly varies the dimensions of the unit cubes, resulting in a unique solution.



49

Spheres

Puzzle Goal: **Put all pieces in the box, so that the lid will completely close.**

Materials: Wood, stone

Classification: 1.2.3-Dimensional Assembly

50

Standing Egg

Puzzle Goal: **Assemble a cube that is missing one vertex, and so that it self-sustaining.**

Materials: Wood

Classification: Put-Together

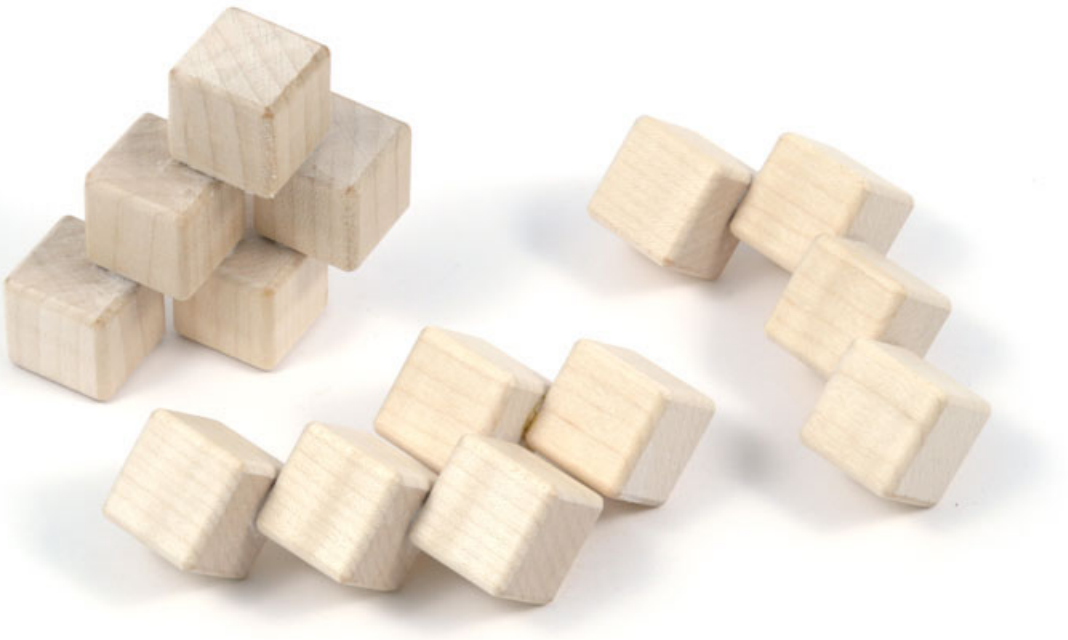
51

SymFunny

Puzzle Goal: **Make a symmetric shape with the three pieces.**

Materials: Maple

Classification: Put-Together



52

TD345

Puzzle Goal:

1. **Make a 2-layer 3x3 square with the smaller TD chain.**
2. **Make a 2-layer 4x4 square with the larger TD chain.**
3. **Make a 2-layer 5x5 square with both TD chains.**

Materials: Purpleheart tongue depressors, rivets

Classification: Put-Together

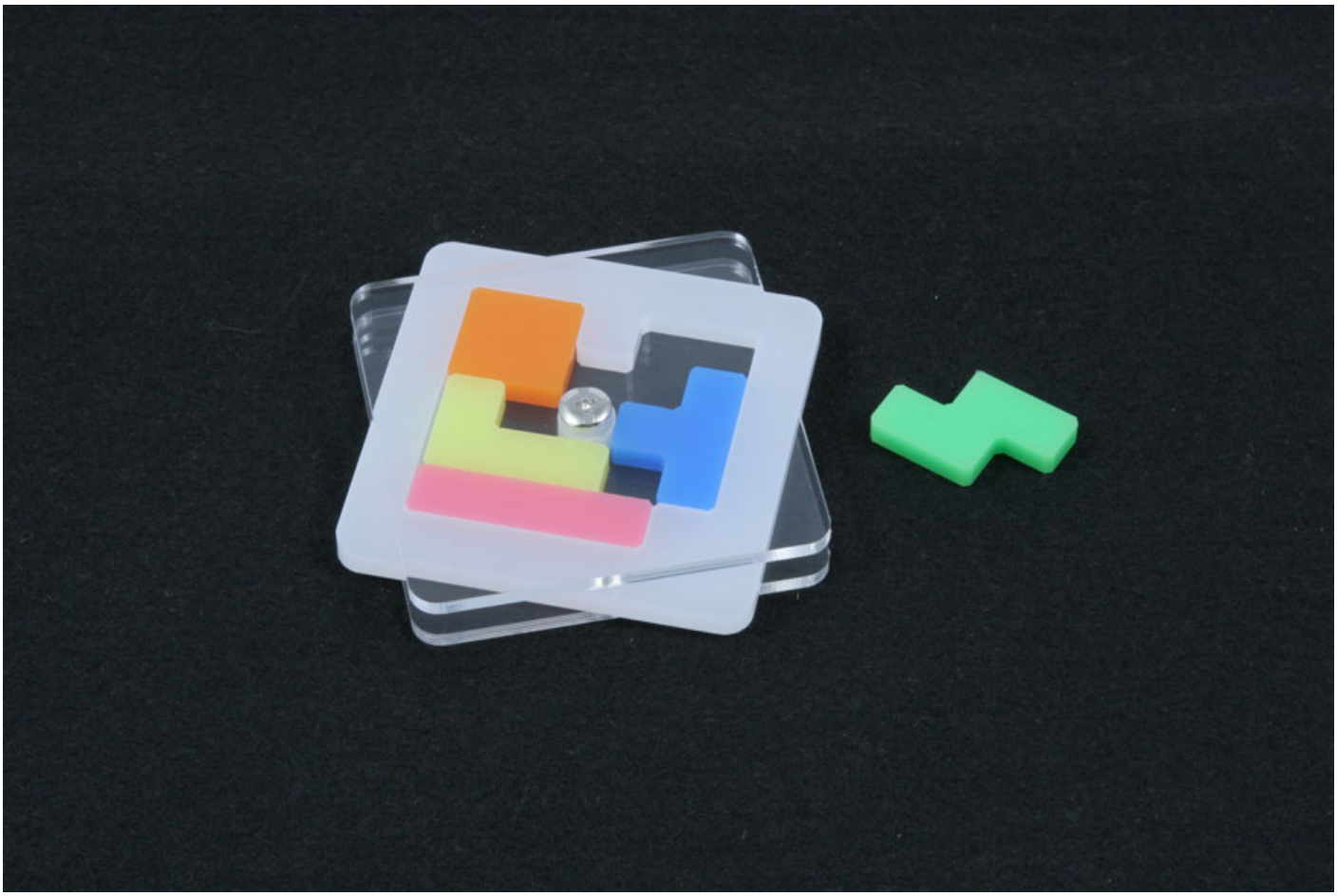
53

Tetra Spinner

Puzzle Goal: **Put the five tetromino pieces into the frame and close the lid completely.**

Materials: Acrylic

Classification: Put-Together, Sliding Pieces



54

Tétrademino

Puzzle Goal: **Build various shapes using the tétrademino shapes:**

1. **4x15, 5x12, 6x10, and two 5x6 rectangles**
2. **Four 8x8 rectangle (with four holes)**
3. **Five 7x9 rectangle (with three holes)**
4. **The given figure below with 10 pieces**

Materials: Maple, cherry, walnut

Classification: Put-Together

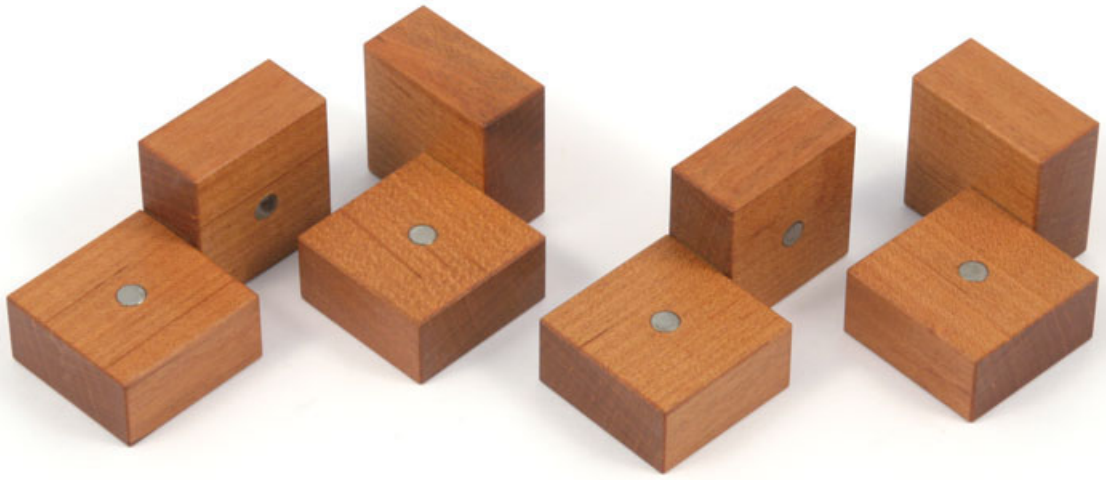
55

Trigonal Pyramid

Puzzle Goal: **Pair the magnetic panels to construct a pyramid (the shape will be rotationally symmetric).**

Materials: Cherry

Classification: Put -Together



56

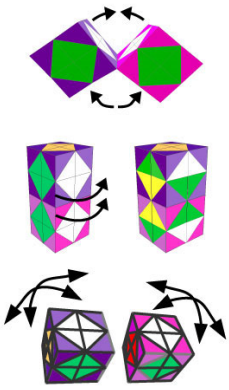
2x2x2x2

Puzzle Goal: **This is a topologically faithful physical implementation of a 4D extrapolation of the 2x2x2 twisty puzzle. It is solved when all eight "stickers" of each colored "face" (octahedra) are mutually touching, such as the red face in the very center (currently hidden) of the configuration shown below, or virtually touching as described in the notes below.**

Materials: 3D-printed nylon 12 and 384 neodymium magnets

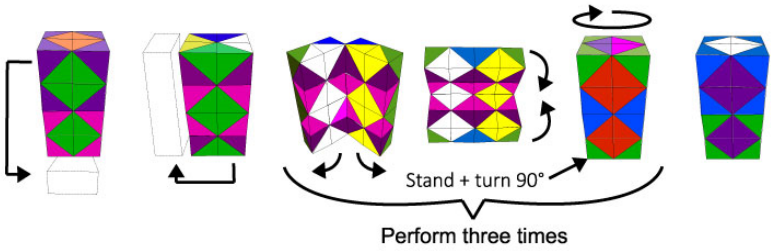
Classification: Slocum 5.4

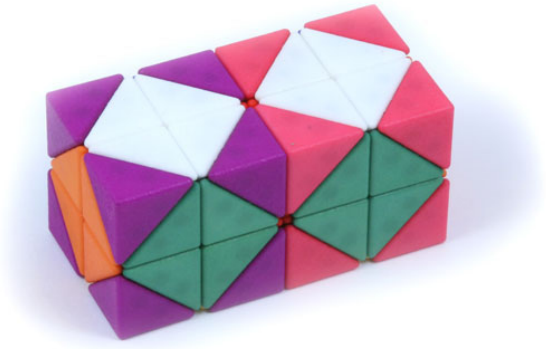
Notes: Legal moves include the simple "rolling" of two halves against each other:



1. 90 degree twist of an outer face. (short direction, as shown)
2. 180 degree twist of a side face. (long direction)
3. 90 degree axial twist of the central face (shown). Both central slices twist around the long axis. Do not twist one without the other.
4. Arbitrary juxtaposition of outer faces (shown): pull the two halves apart, reorient however you like, and reattach them wherever you like:

Gyro rotation. A specific series of moves that swaps the “outer” axis with one of the other three, for example swapping the purple-pink axis with green-blue like this:





57

Two Puzzle Splines

Puzzle Goal: **Disassemble, reassemble.**

Materials: Wenge, maple, pink ivory

Classification: Interlocking solid

58

Two Shapes

Puzzle Goal: **Assemble the four pieces to make two identical quadrilateral shapes at the same time.**

Materials: Printed MDF

Classification: 2D Assembly

59

Venn Puzzle

Puzzle Goal: **Disassemble and reassemble into a sphere.**

Materials: Stainless steel

Classification: 3.6

61

Yosegi Pattern Box

Puzzle Goal: **Open the box.**

Materials: Katalox, maple, purpleheart

Classification: 2.1 Trick or secret opening

60

Wave 5

Puzzle Goal: **Put all the pieces into the frame.**

Materials: Acrylic

Classification: 1.1 2-Dimensional assembly