01

1 Platypus Egg!

Puzzle Goal: **Open the egg.**

Materials: Colour pencils, pins, electronics

Classification: Trick opening (Slocum 2.1)

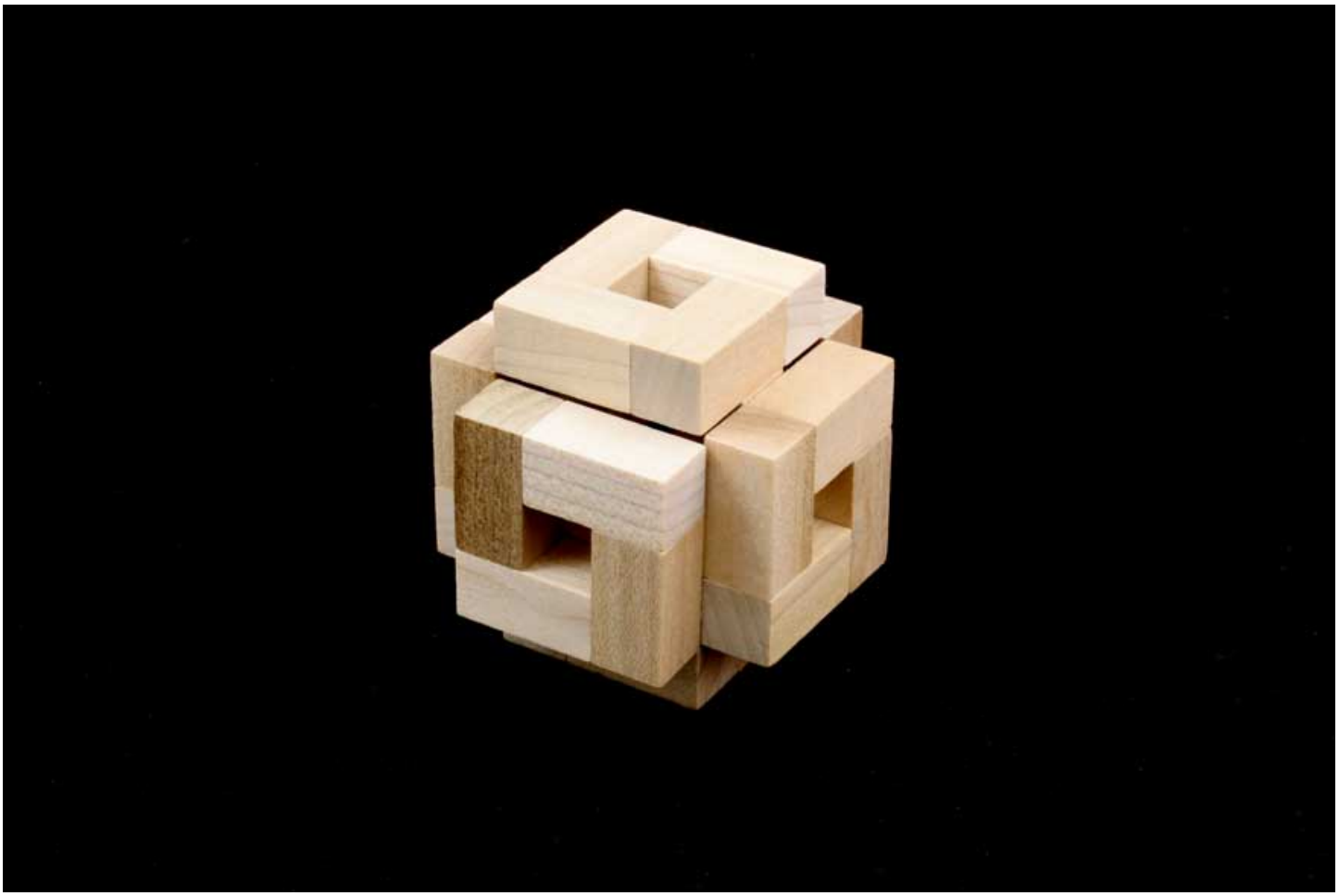
02

3 Identical Piece Burr ON

Puzzle Goal: **Assemble the 3-piece burr.**

Materials: Wood

Classification: Interlocking



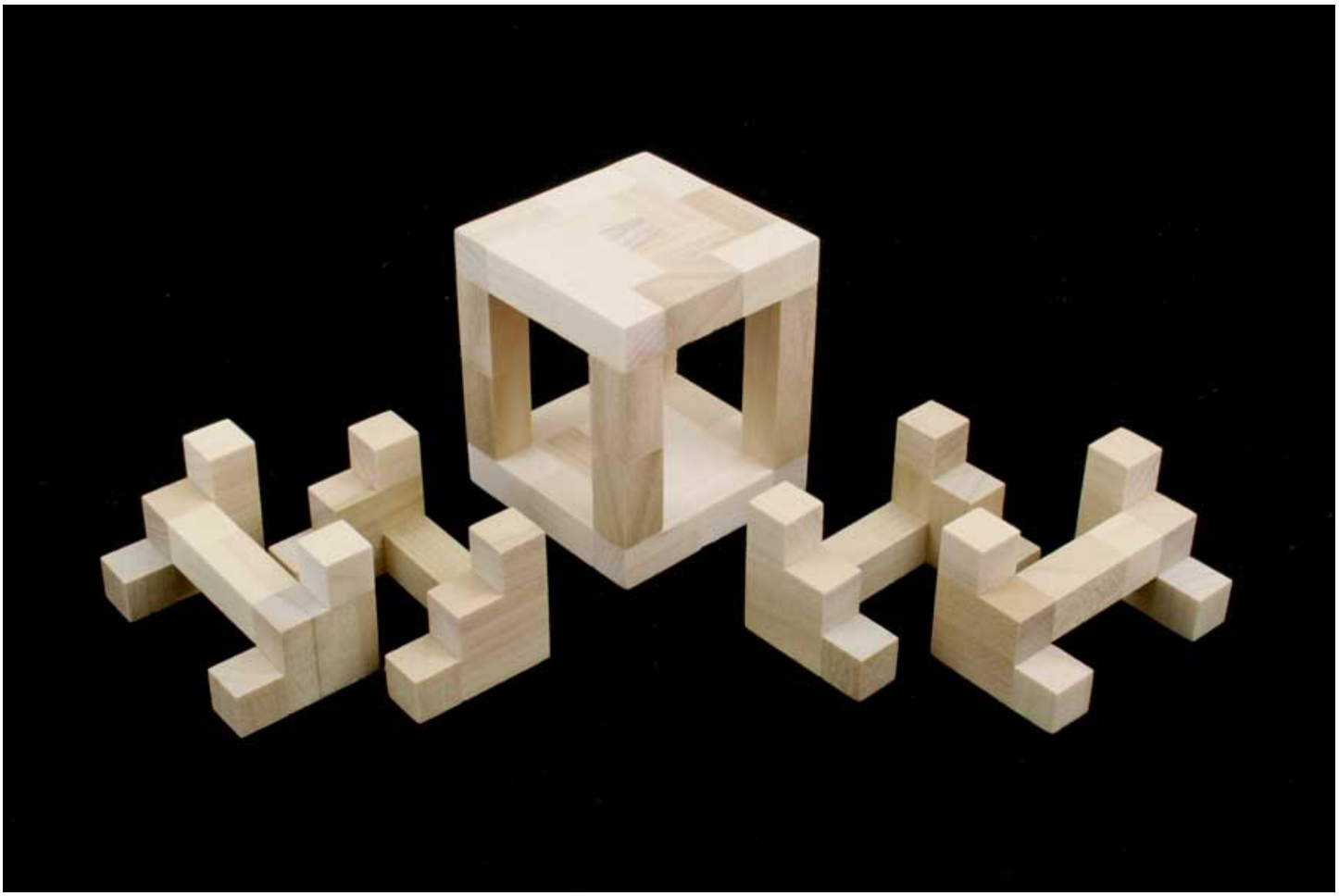
03

4 Piece Burr in Frame

Puzzle Goal: **Assemble all four pieces into the frame so that none of them stick out.**

Materials: Wood

Classification: Interlocking



04

4x2

Puzzle Goal: **Fold (roll over) and rotate the mechanism to find at least eight different English letters and 10 different mathematical symbols.**

Materials: Wood, thread

Classification: Sequential movement, folding

05

4x6

Puzzle Goal: **Assemble the twenty-four elements (four types, six pieces each) into the interlocking structure shown in the picture.**

Materials: Wood

Classification: Interlocking

Notes: The design was found while examining the possibilities of using interlocking puzzles in the field of industrial design and architecture. The goal was to find an interlocking structure, that is not too complex and difficult to produce. Furniture and houses were the main objects of interest. Probably the task was just the opposite of the one of puzzle design, but the result can be interesting even taken out of its practical application – as abstract structure.

06

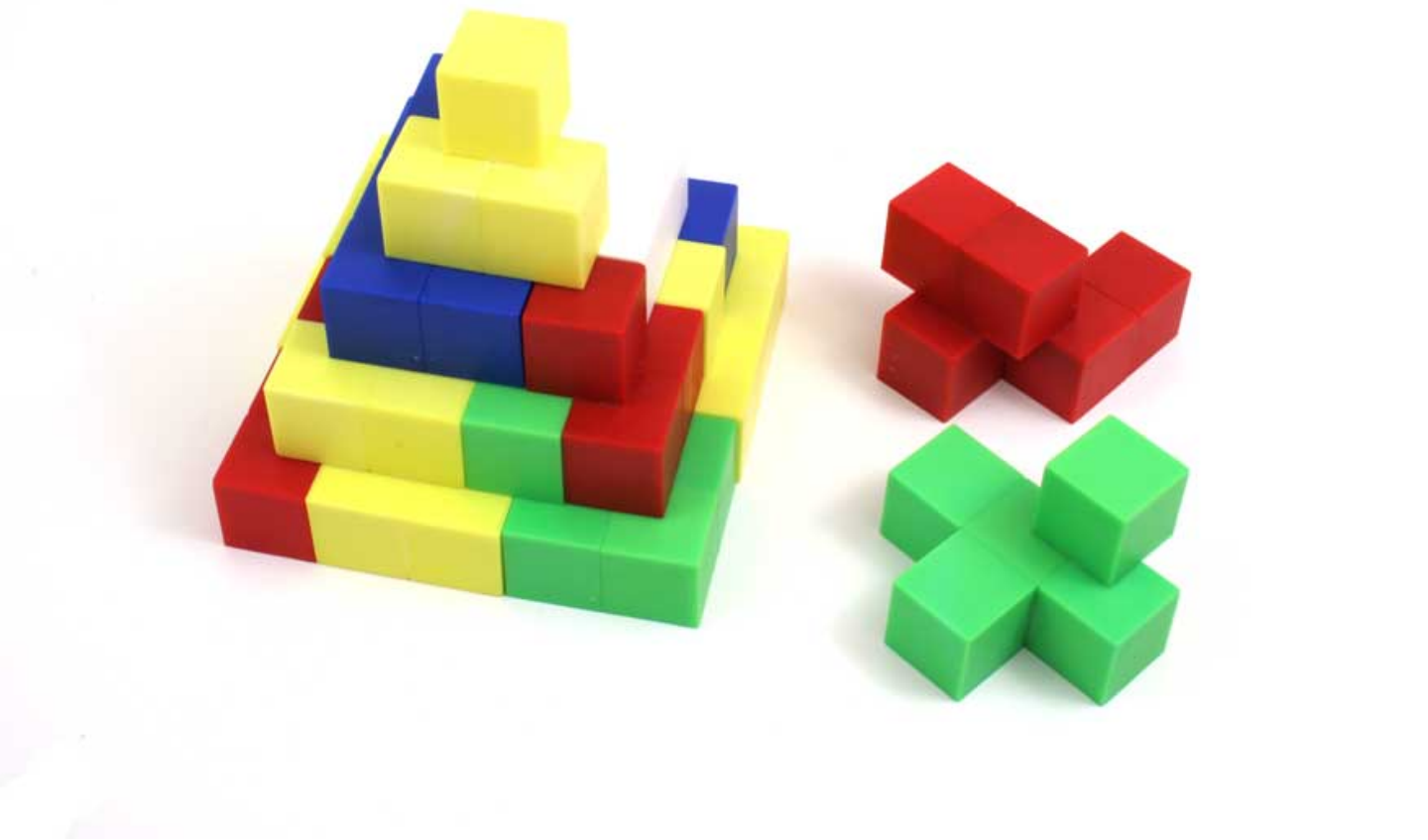
5 Floor Pyramid

Puzzle Goal: **1-Construct a 5-level, square-based pyramid.**

2-Write a relief iPP with the same pieces.

Materials: Plastic cubes

Classification: Put-together



07 5-Minute Puzzle That Might Take Longer

Puzzle Goal: **Using the six pieces, make a cube. All pegs and holes should be hidden somewhere inside.**

Materials: Wood blocks, wood pegs

Classification: Put-together

Notes: Most pieces appear to switch parity.

08

6 Board Burr #3

Puzzle Goal: **Assemble and disassemble the board burr.**

Materials: Chestnut and padauk

Classification: 3.4 Burr puzzles

09

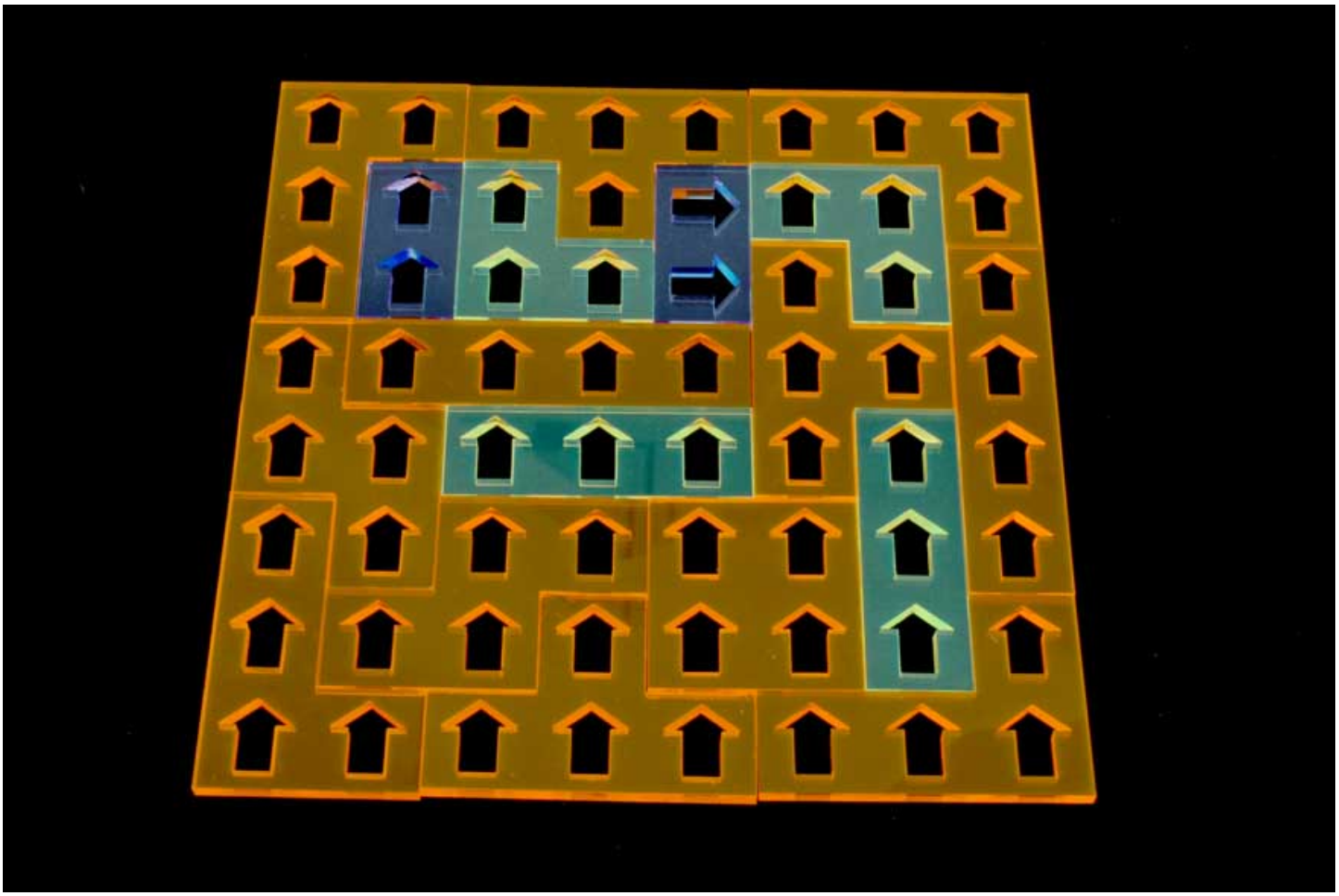
Agincourt

Puzzle Goal: **Make 4 4×4 squares with all arrows pointing the same direction.**

For a harder challenge, make an 8×8 square (again with all arrows pointing the same direction) where none of the 2 and 3 square pieces are adjacent to either each other or the perimeter of the square. (These pieces may touch at a point but not along an edge.)

Materials: Acrylic

Classification: Two-dimensional assembly



10

Aquadron

Puzzle Goal: **Use the gravitational property of the water to move/rotate the pyramids, and to connect the tentacles to the head of the jellyfish.**

Materials: Polycarbonate spheres, ABS pyramids, water

Classification: Sequential movement

11

Ark of the Covenant

Puzzle Goal: **Manipulate the moving pieces to open the box.**

Materials: Walnut with 24K gold gilding

Classification: 2.1. Take-apart

12 BalloonBoggler

Puzzle Goal: **Arrange any number of pieces so that there are no concave outer edges on any one piece (the outer edge should always be nicely rounded).**

Materials: Alder wood or birch plywood

Classification: 2D put-together

Notes: This is a particularly unusual polyform puzzle in that there is no regular grid pattern for the puzzle. Because the pieces might be closer or farther apart, depending on the size of the "bite" that separates them, the grid of center points underlying each solution is irregular.

13

Barb's Cube

Puzzle Goal: **Take apart and reassemble seven checkered pieces.**

Materials: Holly, wenge, bloodwood, and padauk

Classification: Interlocking

14 Black Leaves

Puzzle Goal: **Overlap the two pieces so that no worm cannot be seen. You may bend the pieces slightly without folding.**

Materials: polyvinyl chloride board and adhesive sheet

Classification: Interlocking solid (3.6); interlocking (INT-OTH)

15

Blackbeard's Revenge

Puzzle Goal: **Remove the knife from the guard.**

Materials: Maple, cherry, hemlock

Classification: Trick-opening

16 Bolaris Domino

Puzzle Goal: **Slide the tiles to form a continuous chain of dominoes over and aroud the ball, matching the point value (1-4) with the adjacent tiles.**

Materials: Strong and impact-resistant injection moulded ABS-plastics

Classification: Sequential movement

17 Bolaris Globe

Puzzle Goal: **Scramble and restore the image.**

Materials: Strong and impact-resistant injection moulded ABS-plastics. The Earth image is printed on the ABS-plastic parts using special UV-inkjet printer.

Classification: Sequential movement

18

Bolaris Grey

Puzzle Goal: **Scramble and restore the gray-scale shift of colors.**

Materials: Strong and impact-resistant injection moulded ABS-plastics

Classification: Sequential movement

19 Case Closed

Puzzle Goal: **Assemble to fit fully into the box.**

Materials: Oak dowels and birch plywood

Classification: Interlocking solid

20

ChooChooLoops

Puzzle Goal: **Connect path segments to form loops and patterns. Booklet includes 18 separate main goals and many variations, plus 2 games. Selected goals:**

1. Place the ring anywhere, then fit the remaining pieces

3. Connect all the quds into a continuous path

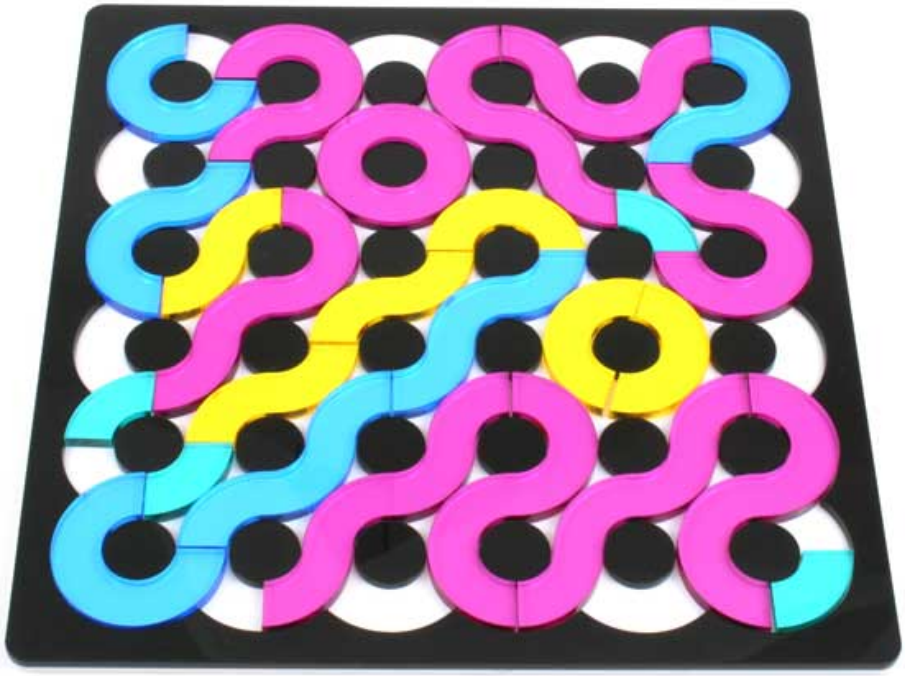
13. Fill the tray, making everything (shapes and colors) symmetrical

14. Form as many separate closed loops as possible

14. Surround five islands with a single closed loop, then fill the tray around it. The starting figures are equivalent to the 12 pentominoes.

Materials: Laser-cut acrylic

Classification: Put-together



21 Click-Clack Cube

Puzzle Goal: **The goal is to separate one of the balls from the cube. In successive steps of uplifting the lids and rotations of the cube, one of the balls must be freed by oneself due to the terrestrial attraction--do not use excess force.**

Materials: Wood, metal balls, laminated HDF board, screws, coloured water-based varnish (environmental)

Classification: Sequential movement

Notes:

History:

22

Confetto Box

Puzzle Goal: **Open two compartments.**

Materials: Padauk, cherry

Classification: Take apart, secret-opening

23 Crystalline

Puzzle Goal: **Pull out the four black pieces from the crystal-like frame and reassemble them.**

Materials: Acrylic and POM

Classification: 1.2 3-D Assembly

Notes: Pieces can easily fall out of the frame. So it is recommended to place some cloth over which the puzzle is to be played.

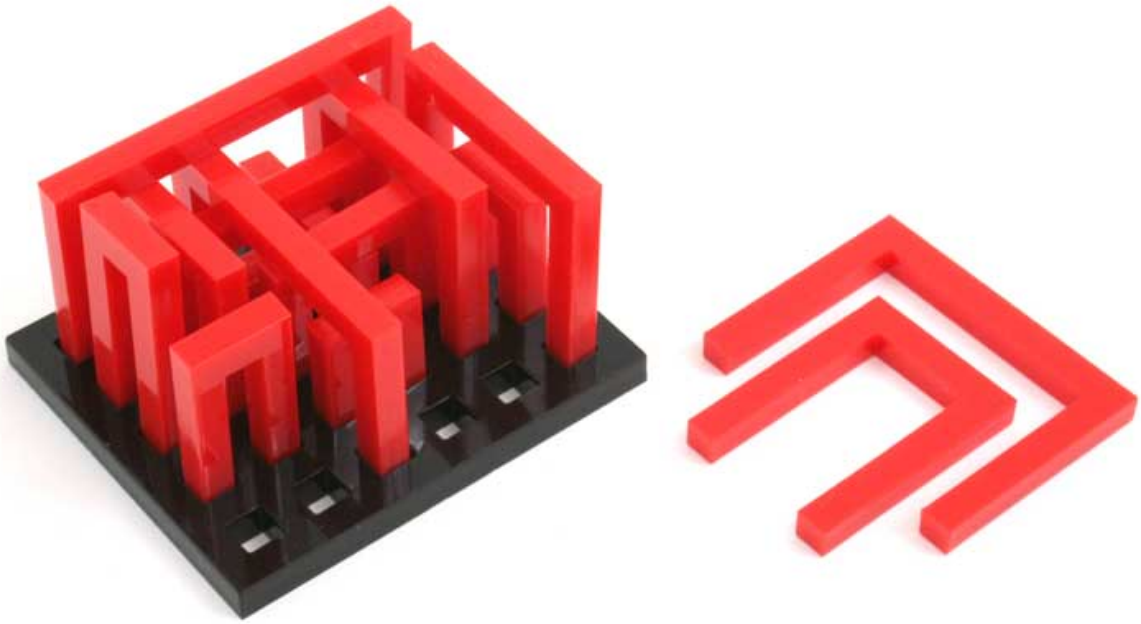
24 Devil's Gate

Puzzle Goal: **Put all 15 gates into the grid.**

Materials: Acrylic

Classification: Slocum 3.2 Interlocking geometric shapes

Notes: This puzzle can be thought of as a 2-dimensional extension of the Langford problem.



25

Dodek Duo

Puzzle Goal: **Assemble the puzzle pieces while matching either just the colors (easier) or just the geometric shapes (harder) across each edge of the finished dodecahedron.**

Materials: Polypropylene plastic and neodymium magnets

Classification: Hordern/Dalgety -- Pattern Puzzle; Slocum -- Put-Together Puzzle

Notes: The twelve Dodek Duo pieces contain specifically-polarized magnetic elements so that each puzzle piece can be attached to any other puzzle piece.

26 Double Head

Puzzle Goal: **To remove the "sword" (handle) from the frame.**

Materials: Stainless steel wire 3.5mm in diameter, copper wire 3.0mm in diameter, iron rings and alloy metal rings

Classification: Disentanglement wire puzzle

Notes: The common Chinese Rings puzzle is a somewhat an open system. This design mainly involves the closed system of both ends.

27 Easy Pyramid, Hard Pyramid

Puzzle Goal: **Assemble the pieces of the same color to make two 4-layer square-based pyramids.**

Materials: Acrylic

Classification: Three-dimensional assembly

Notes: The Easy Pyramid (gold), named "8I2V", is a variation of a set of 10 "V" right-angle trispheres. The Hard Pyramid (blue), named "Just Right Angles", is the best of the few possible sets of all-different right-angle pieces. Hint for the Hard Pyramid: five of the seven piece do not lie flat.

28 Emerald Isle

Puzzle Goal: **Set the piece with the holes in different positions, and then try to place the remaining 15 pieces to fill the map of Ireland.**

Materials: Laserable plastic

Classification: 1.12 Dimensional Assembly Puzzle

Notes: The puzzle is made in the shape of the Island of Ireland. Try piece in position 32,38,39,45,52 or 12,18,25,26,32.

29

Funny Cubes

Puzzle Goal: **The puzzle consist of four "Funny Cubes" and a square frame. Each Funny Cube is made up of two halves that are connected by an internal bolt which allows them to rotate with respect to each other. The objective is to place four Funny Cubes halves into the square frame. The halves that stick above the frame must also form a solid square.**

Materials: Maple, with avodire, bloodwood, bocote, canarywood, Indain rosewood, makore, purpleheart and yellowheart. Frame base is redheart.

Classification: Put Together

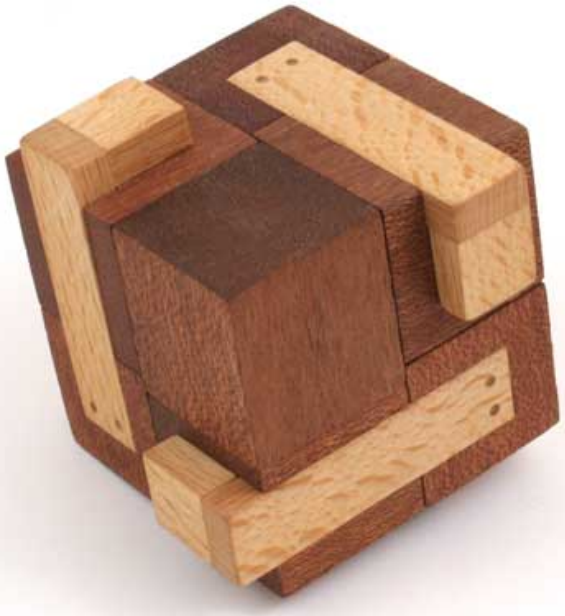
30

Good Hookin'

Puzzle Goal: **Dissassemble and assemble eight pieces.**

Materials: Mahogany and oak

Classification: Interlocking 3.2



31

Grandmass Trunk

Puzzle Goal: **Open the box.**

Materials: Mahogany, Bubinga rosewood, padauk

Classification: Secret opening

32

Great Escape

Puzzle Goal: **Put the ball bearings down the tube - then get them out!**

Materials: Corian, brass tube and four steel ball bearings

Classification: Exchange puzzle

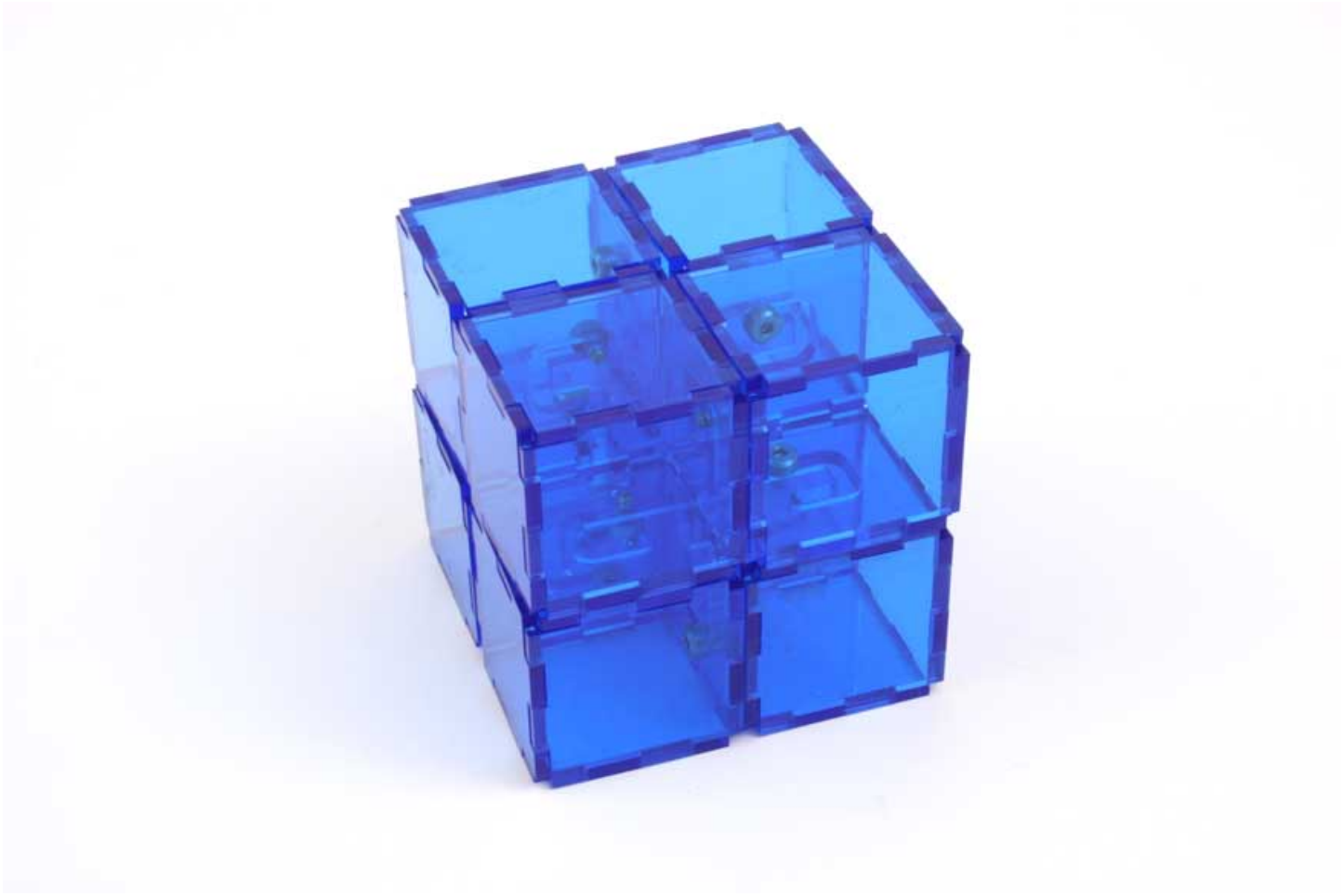
33

Groovy Cubes

Puzzle Goal: **Assemble/disassemble the cubies into a 2x2x2 cube.**

Materials: Acrylic, stainless steel

Classification: Interlocking



34

Hexdominoes

Puzzle Goal: **Assemble tiles to meet the different goals.**

1. HexMate: match tiles to colors on grid

2. Color separation

3. “Latin” color arrays

4. Color pairs

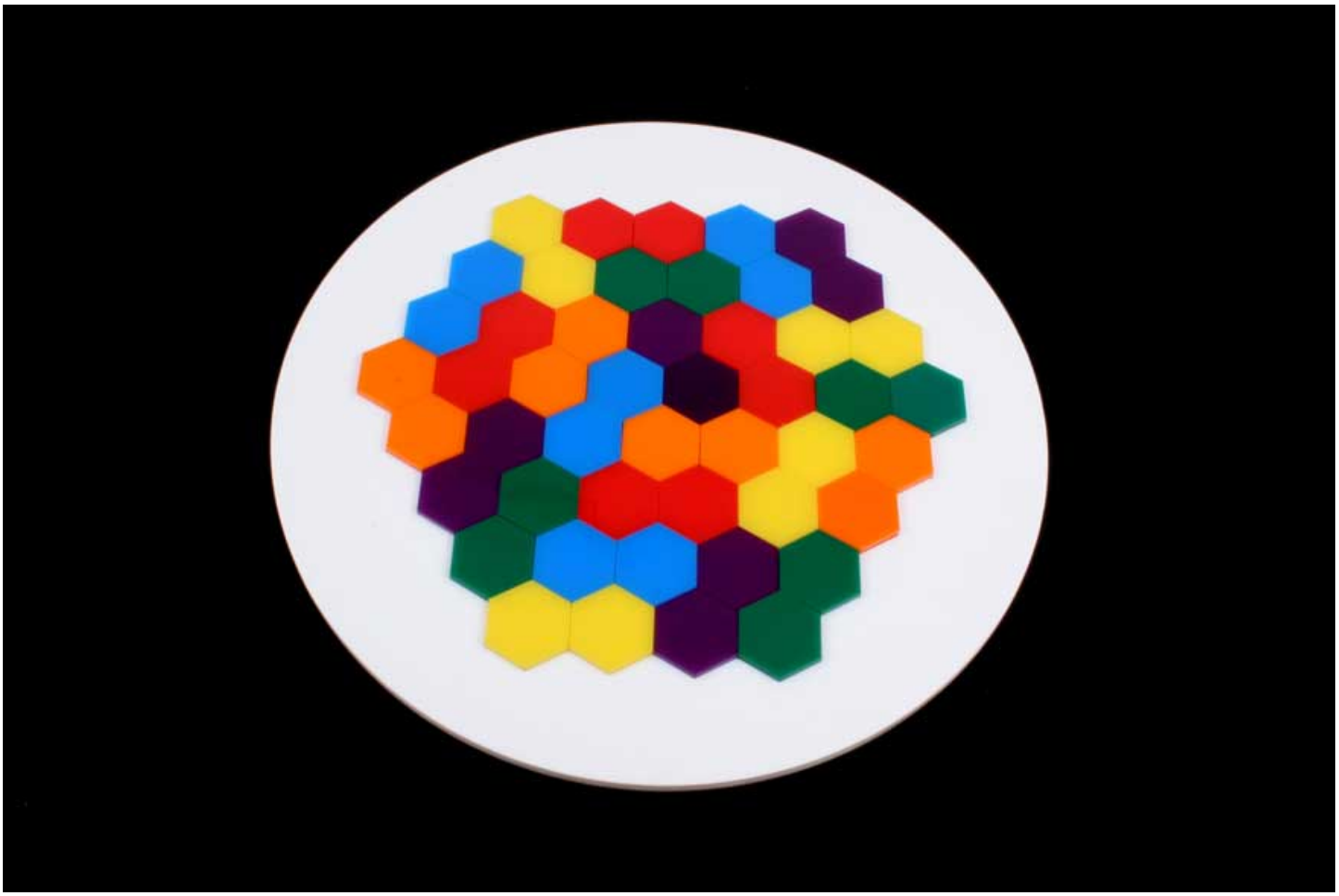
5. Color trios

6. Color quads

7. Daisies, Pinwheels and Symmetries

Materials: Acrylic, lasercut. Tiles hand-inlaid in 6 colors.

Classification: Put-together



35

Hextasy

Puzzle Goal: **Disassemble and reassemble the six pieces.**

Materials: Mahogany

Classification: INT-POLY

36 Impossible Magic Geometric Jig Saw Puzzle

Puzzle Goal: **The puzzle is a 3 stage problem. It consists of 7 different regular and irregular shaped pieces.**

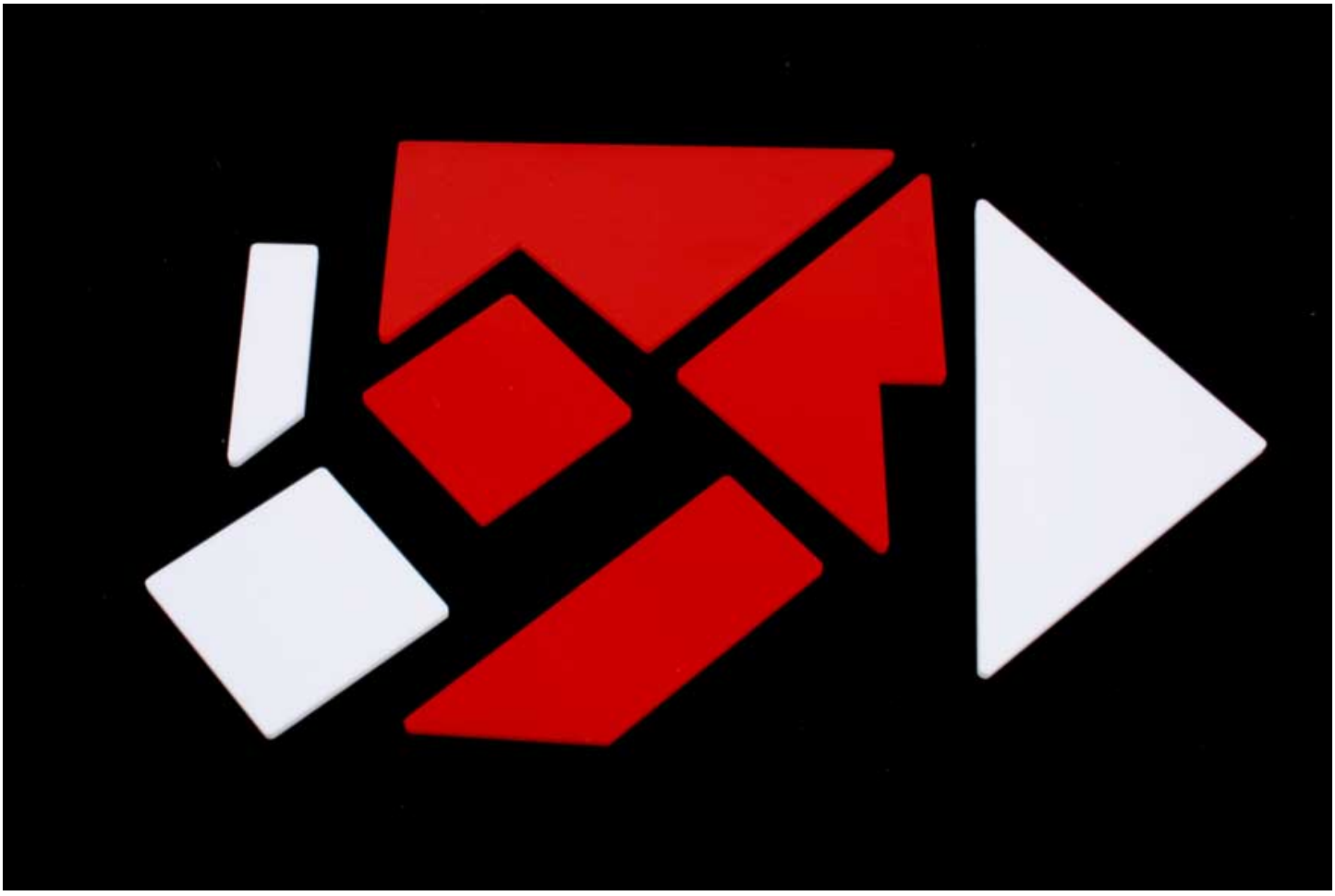
1. Using the 5 non-square pieces make a square.

2. Then, using the same 5 pieces and the 6th piece (the smaller square piece) make a slightly larger square.

3. Now adding the final piece (also a square), use all 7 pieces to make an even larger square.

Materials: 3.5mm acryllic sheet

Classification: Jigsaw assembly puzzle non-interlocking



37

Irrational Dissection

Puzzle Goal: **Assemble the pieces into each of three possible different rectangular solids and then enclose each in the styrene box, which assembles three different ways.**

Materials: Basswood, styrene

Classification: Put-together

38

K-Nob

Puzzle Goal: **By moving sections of the puzzle box in the proper sequence, a piece can be removed to reveal the secret chamber inside.**

Materials: Brass, ebony, tulipwood, goncalo alves, ziricote, bloodwood, purpleheart

Classification: Sequential Movement Puzzle Box

39

Krystalledron

Puzzle Goal: **Match the ege patterns of the pyramid faces, which will make the puzzle look as sparkling as possible.**

Materials: Polycarbonate spheres, ABS pyramids

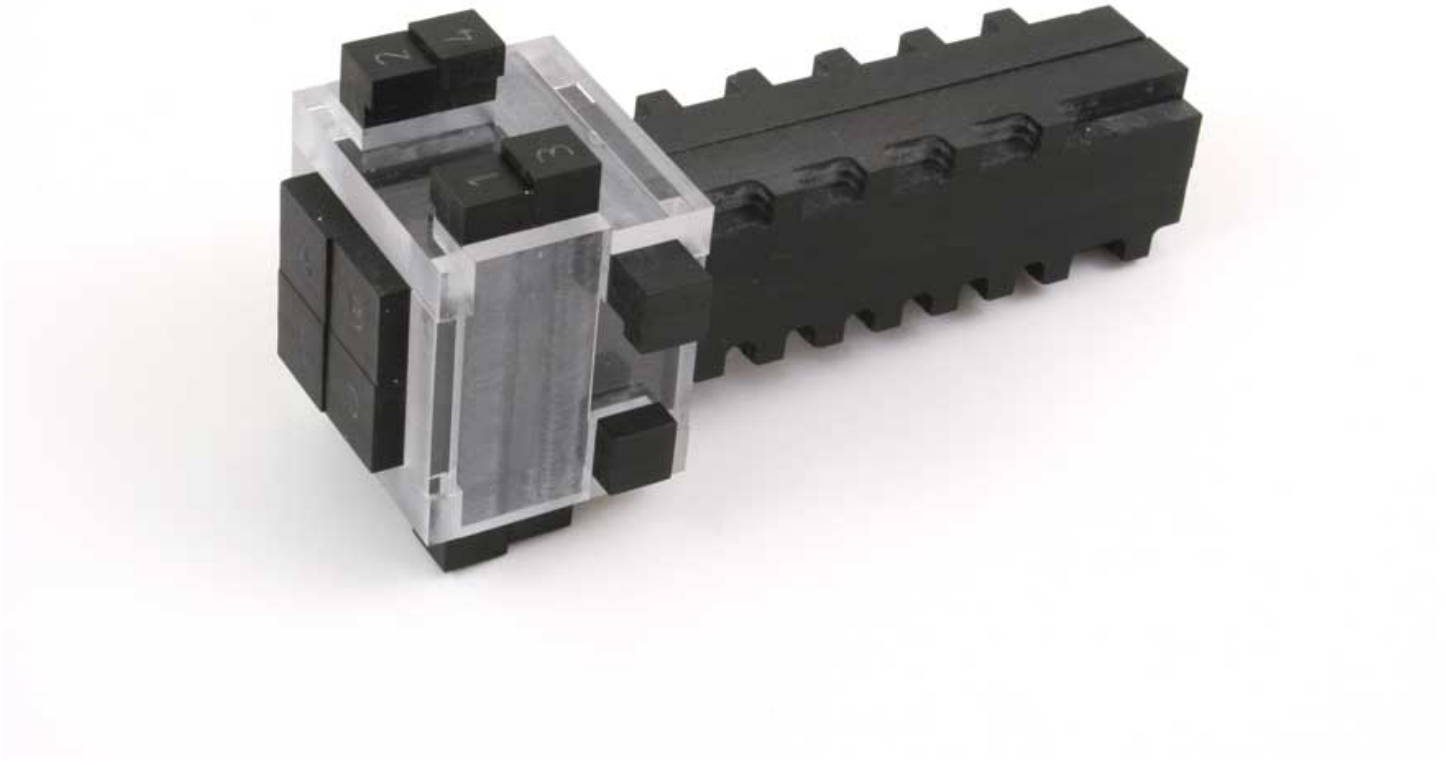
Classification: Sequential movement

40 La Cerradura 3D

Puzzle Goal: **Open the lock and free the smiley.**

Materials: Trispan, polycarbonate

Classification: Sequential movement



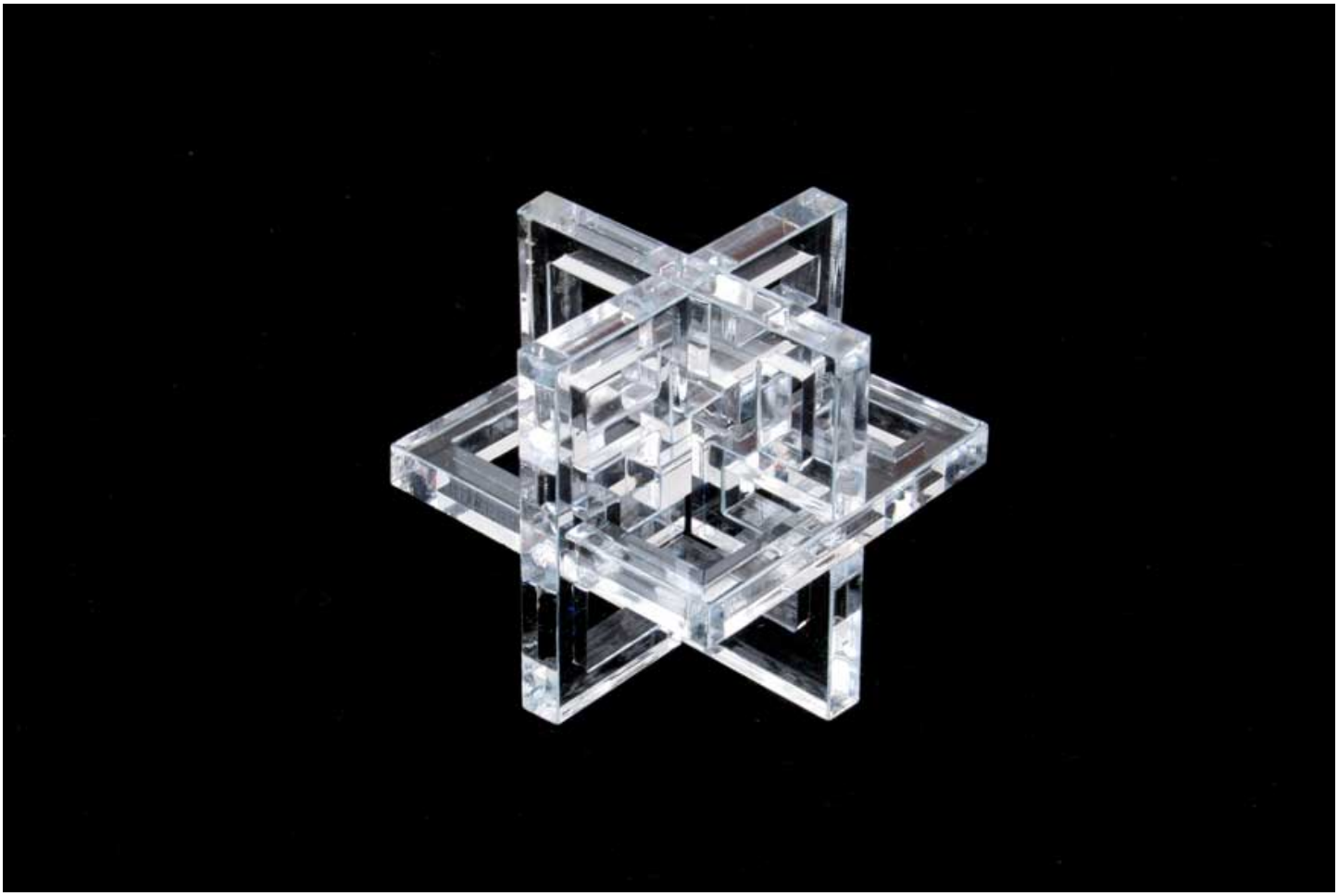
41

Lattice

Puzzle Goal: **Take 3 pieces apart, then put them back together again. Twenty-two moves to get the first piece out!**

Materials: Acrylic

Classification: 3.2 Interlocking geometric object



42

LEO brass

Puzzle Goal: **Disentangle the two parts.**

Materials: Brass

Classification: Disentanglement

43

Lost Jewel

Puzzle Goal: **Arrange the snake of 12 triangular prisms to form a stable octahedron. Each great circle should have the same colored accent.**

Materials: Wood, elastic

Classification: 3D Assembly

44

Marusenko Sphere

Puzzle Goal: **Restore the colored sphere.**

Materials: Injected thermoplastic

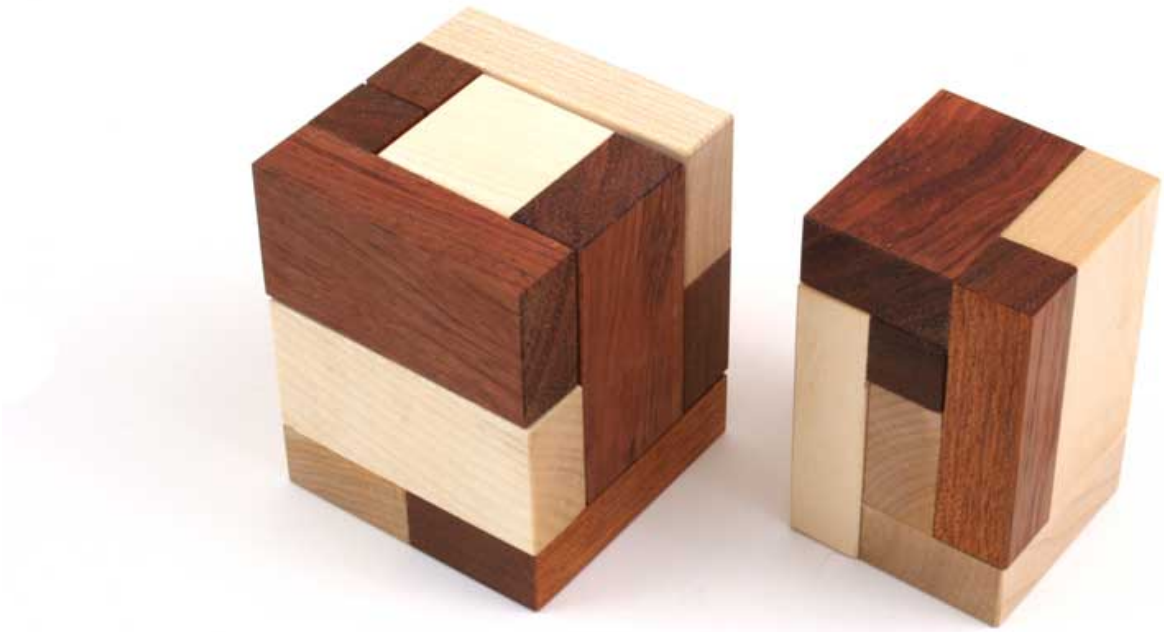
Classification: Rotational puzzle

45 Nine Bed Nightmare

Puzzle Goal: **Pack all nine L-shaped pieces into a 5x5x5 cube; or pack all nine pieces into 5x4x4 plus 5x3x3 bricks. A subset of the pieces can also pack a 5x5x4 brick or a 4x4x4 cube.**

Materials: Maple and bubinga

Classification: 3D assembly (or ASS-CART)



46 No Boundaries Circle

Puzzle Goal: **A 7" circle divided into 25 pieces. Mix them around in a pile and then arrange them to complete the laser engraved design.**

Materials: 0.12" bamboo plywood

Classification: Put-together 1.1

47 No Boundaries Square

Puzzle Goal: **A 7" square divided into 25 equal squares. Mix them around in a pile and then arrange them to complete the laser engraved design.**

Materials: 0.12" bamboo plywood

Classification: Put-together 1.1

48

Obama's Star

Puzzle Goal: **Build one white and one blue golden rhombic icosahedron, each with 5 pieces in the red supports.**

Build one golden rhombic triacontahedron with a white star on a blue globe, in one red support

Materials: 10 pieces from spruce wood and 2 supports from plywood

Classification: ASS-SHAP 3D Assembly, other shapes

49

One Piece Puzzle

Puzzle Goal: **There are two challenges:**

1. Make it flat

2. Make a cube

Materials: Copper wires and flexible tubing

Classification: 9. Folding puzzle

50

Onion

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

Materials: ABS plastic

Classification: 3.2. Interlocking geometric shapes

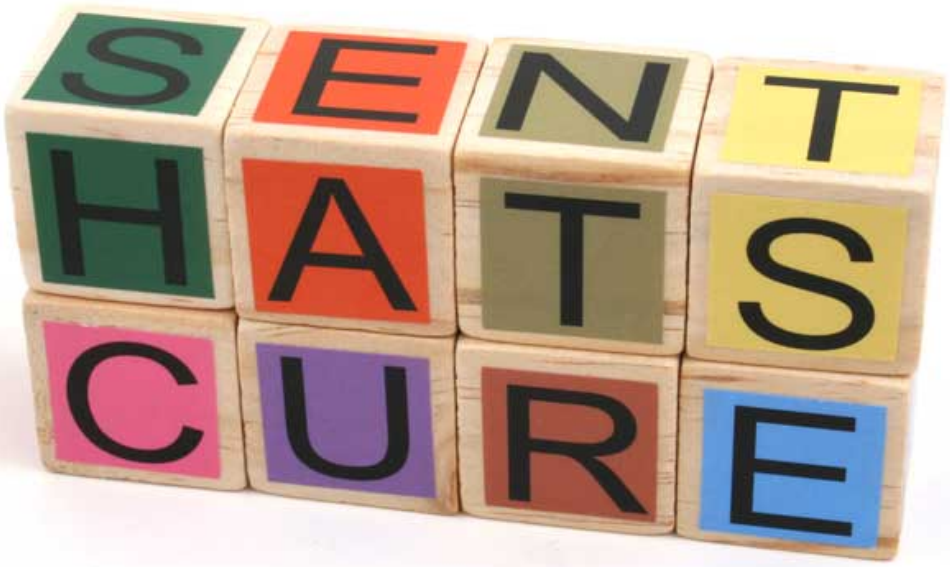
51

OX BLOX

Puzzle Goal: **There are eight cubes, with letters on all sides. The object is to put 3,4,5 or 6 cubes together, to make English words. The words need to be on each of the fours side at the same time. The outward facing sides of the cubes are not involved.**

Materials: Pine timber with lables

Classification: Sequential movement, constrained edge-matching



52

Pagoda Puzzle

Puzzle Goal: **Open and then close the box.**

Materials: Red oak, walnut, PVC pipe, steel

Classification: 2.1 Trick or secret opening box

53

Paralhell

Puzzle Goal: **Start the pieces in any position. Slide and/or turn the pieces (each is a pair of circles with the same markings) within the hexagon so that all surface rectangles are parallel and the empty space is in the middle.**

Materials: Ramin dowell, foam, plywood

Classification: Sequential Movement : 2D 5.3

Notes: The edges of the tray are rubber, which allows pieces to squeeze past their neigbors.

54 Pickering's Puzzle

Puzzle Goal:

1. Arrange the light number font: #1 in the top-left, #35 in the bottom-right

2. Starting with goal #1, flip over and arrange heavy font: #1 in the top-left, #35 in the bottom-right.

3. Arrange the colors according to the random arrangement of colored balls (top row gets first color, second row gets second color, etc.)—5040 problems and solutions.

4. Solve #3 but with only light or dark fonts showing—10080 problems.

Materials: Acrylic, wood, brass, felt and paint

Classification: Sequential movement

55

Polarity

Puzzle Goal: **Open up the two halves.**

Materials: ABS-Plus 3D printed plastic using Stratasys Dimension Fusion Deposition Modeler, steel springs, neodymium magnets, epoxy, paint

Classification: Hordern/Dalgety Opening

56

Pyramid in a Box

Puzzle Goal: **Open the box, use the pieces inside to assemble a pyramid-like structure of stacked balls.**

Materials: Walnut, birdseye maple, bamboo, birch, magnets

Classification: Trick opening box, assembly puzzle

57 Qboid

Puzzle Goal: **From the 12 pieces there are over 10,000 separate challenges/goals spread over 4 levels Stack the cubes to form one, two, three, or four number/letter combinations.**

Number challenges: 3, 23, 431, 2012.

Hexadecimal challenges: F, 3E, b7A, 32Ad.

Letter challenges: p, Hy, Gub, LCEF.

Word challenges: I, BE, DOG, LEAF.

Mixed challenges: 8, C5, H2O, S49b.

Materials: Wood base then sealed and printed stickers applied

Classification: Put together

58

Rhomby

Puzzle Goal: **Take apart this rhombic dodecahedron and put it together again.**

Materials: Walnut and maple

Classification: Interlocking puzzle

59 Roll Up!

Puzzle Goal: **Move ball to top of spiral.**

Materials: Wood, perspex, metal

Classification: Dexterity - other

60

Sabine's Twist

Puzzle Goal: **Put together and take apart a golden rhombic icosahedron built with five of the six pieces.**

Materials: Spruce wood

Classification: INT-POLY, Interlocking polyhedral 3D

61

See Thru SOMA

Puzzle Goal:

#1: Assemble pieces to form a cube such that one can see through the cube in one dimension (such as top-bottom, front-back, side-side)

#2: Assemble a cube such that there are no holes through the cube when viewed from any cube face.

#3: Assemble pieces such that resulting cube has one see-thru hole visible on each face.

#4: Assemble pieces such that their are two see-thru holes visible on each face.

Materials: Laser cut bamboo, wood glue

Classification: 1.2 Three-Dimensional Assembly (non-interlocking)

62 Self-Referential Panels

Puzzle Goal: **Arrange the 9 tiles in a 3x3 layout such that each tile describes the 9 colors in its position on the other tiles. For example, if you look at the top-center of each tile in the photo, that set of 9 little pieces looks exactly like the tile in the center of the top row.**

Materials: Mahogany, tulipwood, yellowheart, Indian rosewood, printed vinyl

Classification: Put-Together, PAT-OTH

Notes: The solution can be found through logic solving, not trial-and-error.

63 Siamese Torbus

Puzzle Goal: **Take apart; all rings are interlocked and can not be separated. Reassemble the laminated rings with different permutations: .**

Materials: Pliable polyurthane foam ribbons

Classification: Entanglement

64 Spanner

Puzzle Goal: **Separate the screw nut from the spanner.**

Materials: Regular spanner, metall chain and a brass inside screw.

Classification: 4.4 Miscellaneous disentanglement puzzles

65

Sphere PuzzleBox

Puzzle Goal: **Access the hidden chamber in the center of the puzzle's core.**

Materials: Monticello, pauduk, holly, bloodwood, cocobolo woods

Classification: Take-apart

66 Submarine

Puzzle Goal: **Remove the string without using cutting the string and breaking any parts of the main frame.**

Materials: 4mm stainless steel wire, string, plastic bead

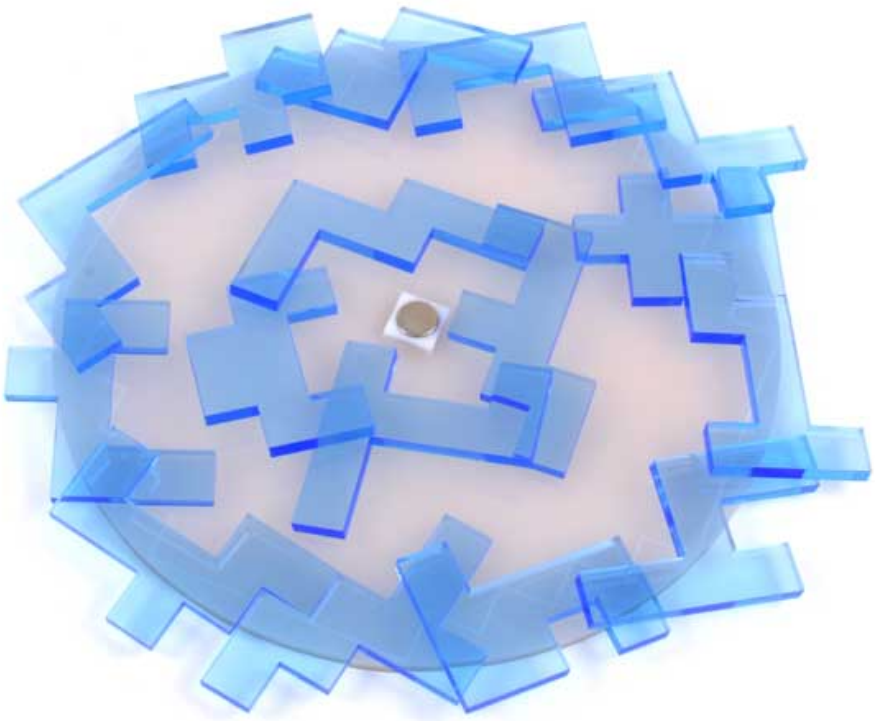
Classification: Wire disentanglement puzzle

67 Suntrapment

Puzzle Goal: **Place the colored octomino pieces on the outlined area in the white plate. When solved, you can place the clear plate on top of the puzzle and shake the puzzle without any pieces coming out.**

Materials: Acrylic and neodymium magnets

Classification: Two-dimensional Assembly



68

Super Floppy Cube

Puzzle Goal: **First scramble the 1x3x3 figure, then restore all faces, like Rubik's Cube.**

Materials: ABS resin

Classification: Sequential movement

Notes:

Notes: There are moves not possible with the original Floppy Cube.

69 Super-Hamilton

Puzzle Goal: **On either side, place A and Z into any two of the 26 empty squares. Add the rest of the alphabet so that the sequence A-Z connects neighboring positions or positions connected by a path. Paths going to an edge wrap to the opposite end of the tray. All 650 possible puzzles have solutions.**

Materials: Laser engraved cherry wood, cubic alphabet beads

Classification: RTF = Routefinding

Notes: Based on the icosian game developed in 1857 by William Hamilton. Not all starting and ending positions are solvable in the original puzzle.

70 Surround

Puzzle Goal: **Interlock six parts surrounding the black cube.**

Materials: Japanese torreya, ebony and magnet

Classification: Interlocking

71

T-Pot

Puzzle Goal: **Get the lid off the pot.**

Materials: 360 Brass

Classification: Take-apart

72

Transforming Burr

Puzzle Goal: **Disassemble and reassemble the 7-pieces to form four different burr shapes.**

Materials: Bubinga, movingui, purpleheart

Classification: Put-together interlocking burr

73

Trick Key

Puzzle Goal: **Open the "lock" with the "key".**

Materials: Plastic, steel

Classification: Take-apart

74 Trickier Trivet

Puzzle Goal: **Take it apart and put it back together. Or, put it on your kitchen table and put hot pots on it, using it to protect your table.**

Materials: Mahogany, oil finish

Classification: Slocum 3.6 or Dalgety/Hordern INT-OTH

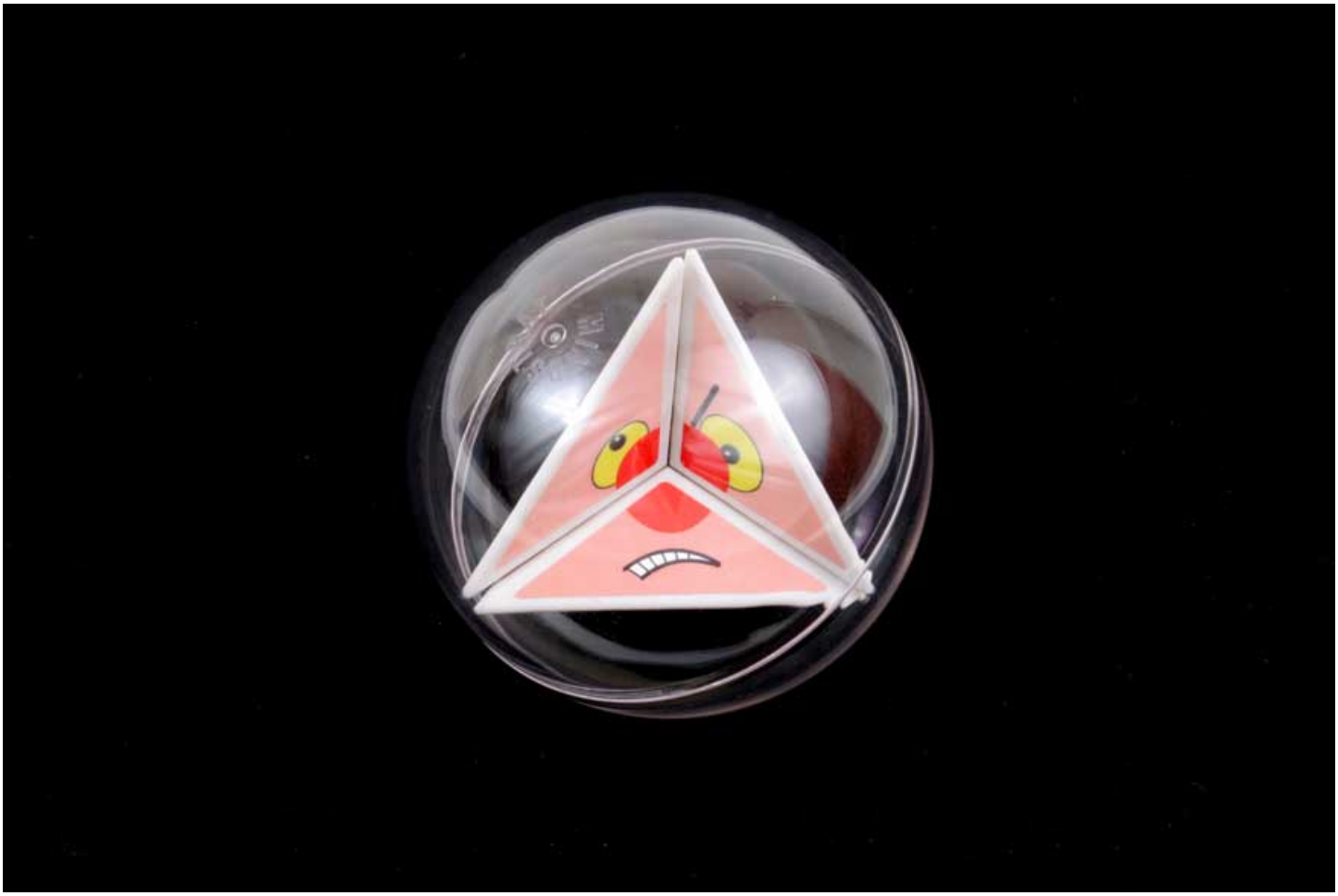
75

Trihx, the Puzzle Ninja

Puzzle Goal: **To achieve all 27 faces of the Puzzle Ninja, or to go from one face to another in the fewest moves as possible.**

Materials: Polycarbonate spheres, ABS pyramids

Classification: Sequential movement



76

Trillium Box

Puzzle Goal: **Open the box!**

Materials: Walnut, Cherry, Maple, Brass, Metal.

Classification: 2.1 Trick or secret opening box

77

Tubular Burr

Puzzle Goal: **Assemble and disassemble the burr inside the tube.**

Materials: Acrylic

Classification: Interlocking

78 Twice the Insanity

Puzzle Goal:

Object of the puzzle:

(1) Use two of each colors on one side so that no two colors are in the same line (easy)

(2) Same as above but use two of each color on both sides so that no two colors are in the same line on ether side (hard)

Materials: Wood

Classification: PAT-SIMI

79

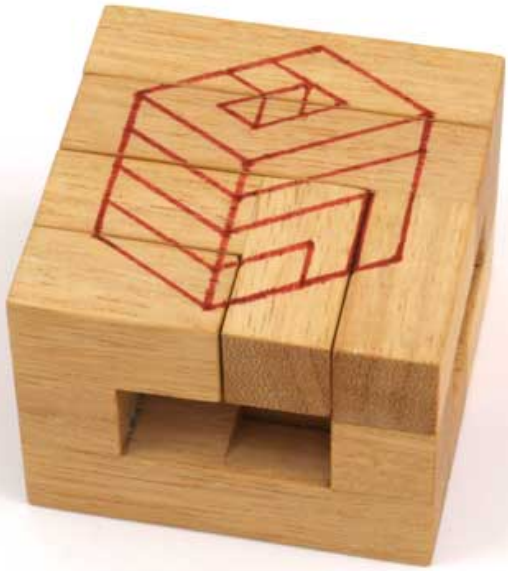
Twin Snake

Puzzle Goal: **1. Assemble to make the symbol picture on the puzzle.**

2. Assemble so that the black line makes a complete loop.

Materials: Wood (movingui)

Classification: Disentanglement/TNG



80

Ze Chinnyhedron

Puzzle Goal: **Open the box.**

Materials: 5 Wood species, diamonds!

Classification: Slocum 2.1