

01

#2 Pencil Case

Puzzle Goal: Open the secret compartment.

Materials: Walnut, maple, wenge hardwoods

Classification: Take apart



02

1 Pinko Ringo

Puzzle Goal: Disassemble and reassemble the apple.

Materials: Exotic woods

Classification: Slocum 3.1 – Interlocking solid

History: Inspired by Wayne Daniel's 10-piece Icosahedrons.



03

1443

Puzzle Goal: Create a variety of shapes by arranging the 24 pieces, each of which consists of combinations of three to ten unit cubes resembling the 24 Hangeul (Korean alphabet) characters. 13x4x3 and 13x12x1 blocks are possible.

Materials: EVA (ethylene vinyl acetate copolymer)

Classification: Put-together



04

2 Loops

Puzzle Goal: To separate the golden ring and string from the main frame, without cutting any parts, and not using force.

Materials: Stainless steel 3.5mm wire, gold-plated ring, rope

Classification: Disentanglement



05

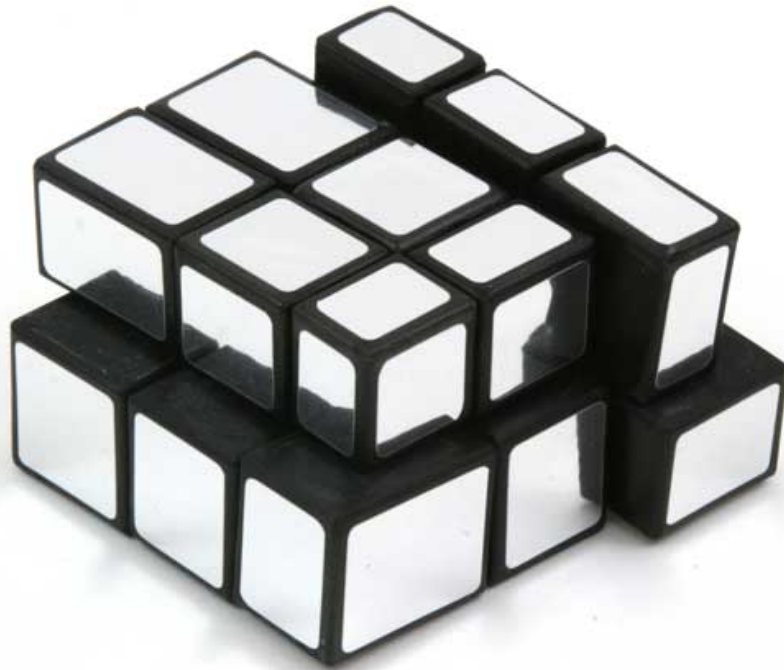
2/3 Bump Cube

Puzzle Goal: Restore the rectangular shape, with no bumps.

Materials: ABS plastics, polyurethane resin

Classification: Rotational puzzle

History: This idea comes from Rubik's Domino and the Bump Cube (Takeji), using height differences instead of pips and black/white colors.



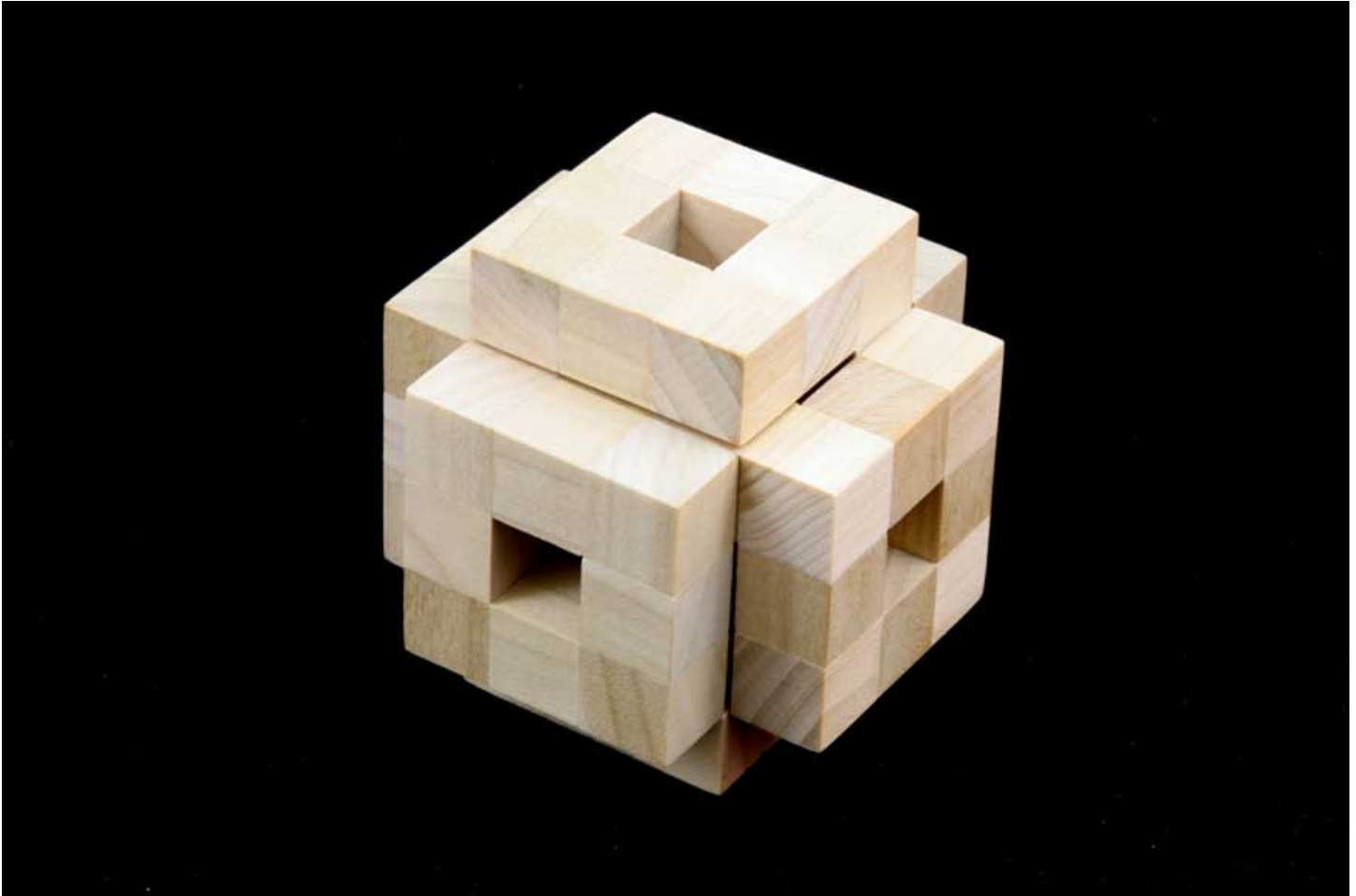
06

3 Piece Burr Yamaosa

Puzzle Goal: Assemble the 3-piece burr.

Materials: Wood

Classification: Interlocking



07

3 Pieces Octa-2

Puzzle Goal: Disassemble and reassemble.

Materials: Birch, satinwood, walnut

Classification: Interlocking



08

4 Direction Drawer

Puzzle Goal: Open the four drawers at the same time.

Materials: Oak, walnut, karin, camphor, rose wood

Classification: Take-apart



09

A Piece of the Pie

Puzzle Goal: Open the puzzle to reveal a coin.

Materials: Walnut, maple, bolt and nut

Classification: Secret compartment



10

Ambidextrous Hexduos

Puzzle Goal: Open and close both puzzle boxes.

Materials: Wood, etc.

Classification: 2.1 Trick or secret opening box



11

Anteater

Puzzle Goal: Open the secret compartment.

Materials: Burs wood, karin

Classification: Take-apart



12

Assorted Snakes

Puzzle Goal: Assemble the four pieces into a 5×5×5 cube.

Materials: Wood

Classification: Interlocking



13

Bicone

Puzzle Goal: Take apart and put together.

Materials: Plum-tree and maple

Classification: Interlocking puzzle with coordinate motion



14

Black Box

Puzzle Goal: Make a "black box" by putting the nine triangular polarizing plates into the box. More precisely, make the box appear totally black when viewed to appear as a hexagon (when viewing axis is along diagonally opposite vertices).

Materials: Polarizing plates

Classification: 1.2 3-D Assembly



15

Black or White

Puzzle Goal: Arrange the six pieces (without any support) to make a white (or black) square.

Materials: Birch and heat treated birch.

Classification: 3D assembly



16

Bump Domino

Puzzle Goal: Make a rectangular shape, with alternating white and black pieces.

Materials: ABS plastics, polyurethane resin

Classification: Rotational puzzle

History: Based on Rubik's Domino and the Bump Cube (Takeji).



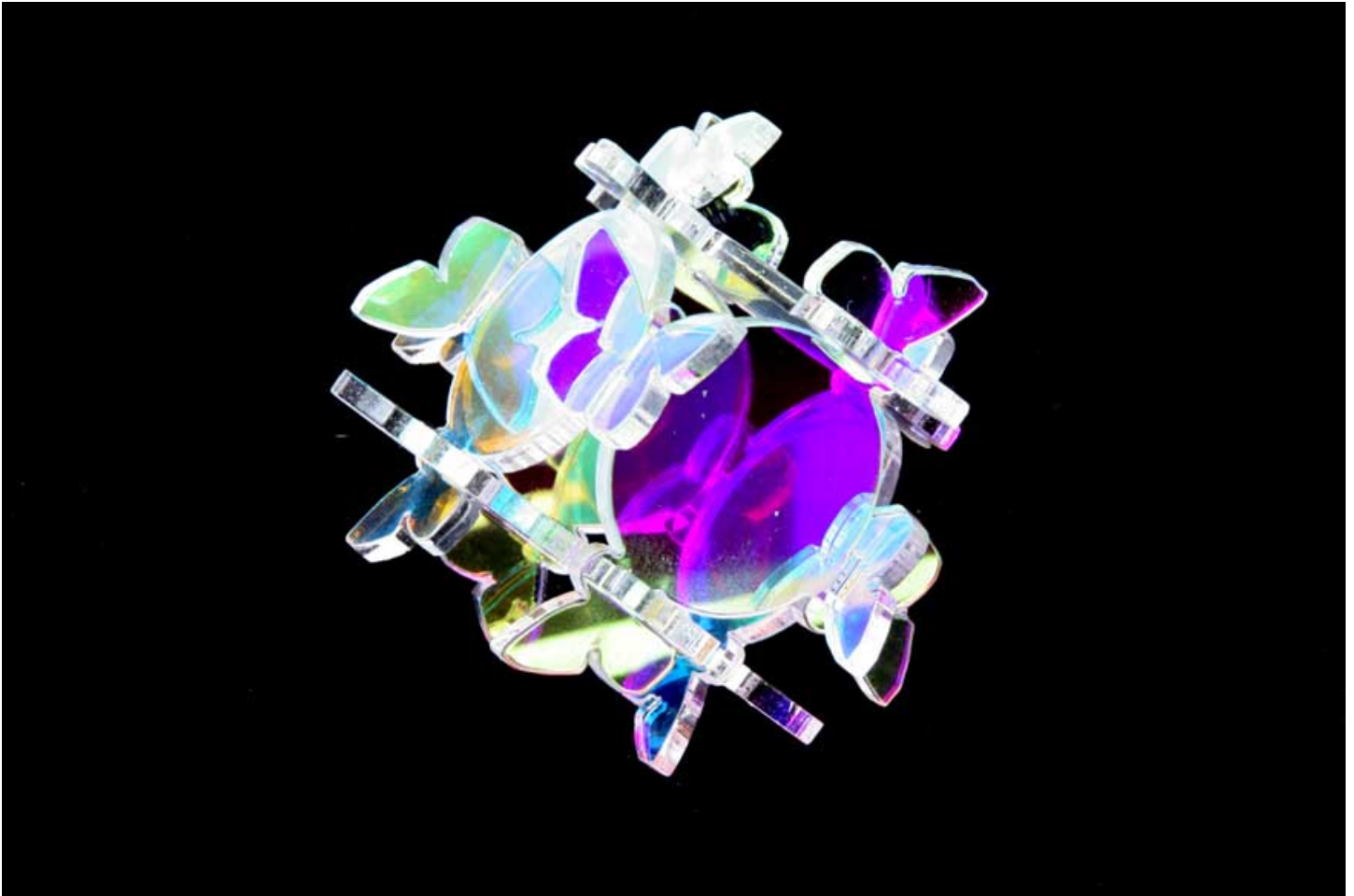
17

Butterfly Cage

Puzzle Goal: Build a cage. The resulting cage should have a non-mutant butterfly on each of the 12 edges (i.e. no two-headed butterflies).

Materials: Polychromatic acrylic and EVA

Classification: 1.3 Miscellaneous put-together



Cannibal Monsters

Puzzle Goal: Make the monsters eat each other by stacking them until one big monster remains:

- The bottom of the hungry monster must fit exactly over the monster it wants to eat.
- You can only move the monsters horizontally and vertically to land on top of the first available monster in line. This means the monsters can't move diagonally and they can't jump over other monsters.
- Once a monster has been eaten, it is part of the new, bigger monster. You must not split up a tall monster stack into smaller stacks. This is a multi-level puzzle. A booklet with 48 different start positions and unique solutions is included with the game; one example is shown here.

Materials: ABS plastic

Classification: Sequential movement puzzle



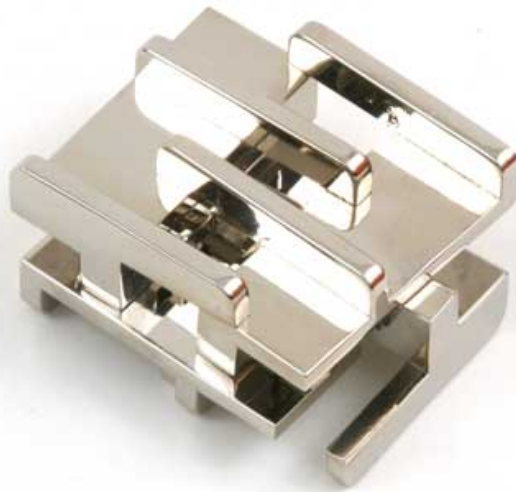
19

Cast Rattle

Puzzle Goal: Disassemble and reassemble.

Materials: Metal

Classification: 3.4



20

Chronos

Puzzle Goal: The puzzle is a 3D representation of the 4D pentachoron (made from five tetrahedrons). The primary goal of the puzzle is to change the color of the internal rod to any of the ten possible colors.

Materials: Metal rods, plastic tubes, rubber tubes

Classification: Sequential movement



Curvy Copter

Puzzle Goal:

Rotate the edges of the puzzles in increments of 180° to scramble the colors. To goal is then to restore each face to a solid color by doing more rotations.

It is also possible to do 70.53° ($\cos^{-1}(1/3)$) turns, increasing difficulty as these so-called jumbling moves allow more positions to be reached.

Materials:

Nylon (selective laser sintering), self-adhesive vinyl

Classification:

Sequential movement

History:

Inspired by the Bevel Cube (Okamoto) and Helicopter Cube (Cowan). By angling the cuts of the Bevel/Helicopter Cube, the otherwise hidden edge pieces were made visible. The visibility of these parts makes the puzzle much more difficult to solve.

The angled cuts create a face pattern with beautiful curves, from which the puzzle gets its name.



22

Envelope

Puzzle Goal: Remove the stick with string from the envelope, without breaking any part.

Materials: Wooden stick, waxed string, paper envelope

Classification: Disentanglement Puzzles / Tangement puzzles (TNG)



23

Everlasting Gobstopper

Puzzle Goal: Disassemble and reassemble. Various other shapes are possible.

Materials: assorted exotic hardwoods, steel dowel pins

Classification: 3D interlocking solid

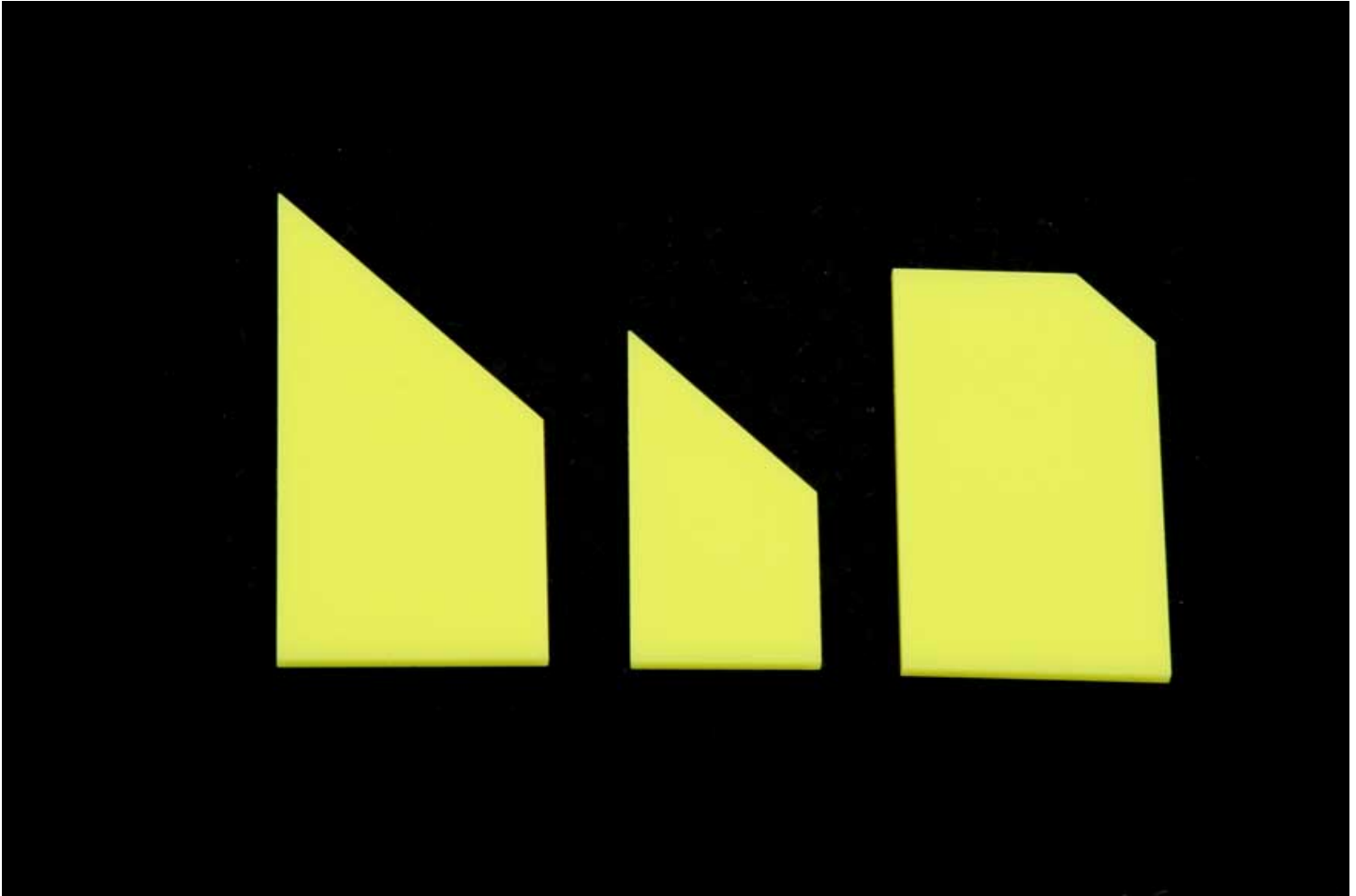
History: Based on Stewart Coffin's "Pennydoodle" puzzle, this set of 12 pieces (four of which are duplicates) was chosen based on BurrTools analysis.



Puzzle Goal: Arrange the three pieces to make a symmetric shape.

Materials: Acrylic board

Classification: Silhouette puzzle



25

Globular Embrace 4 Rings

Puzzle Goal: Disassemble and reassemble four interlocked rings.

Materials: Plexiglas

Classification: Slocum 3.2 Interlocking geometric object



26

Harmony

Puzzle Goal: Remove the note from the treble clef.

Materials: brass

Classification: 4.1. Disentanglement cast puzzle



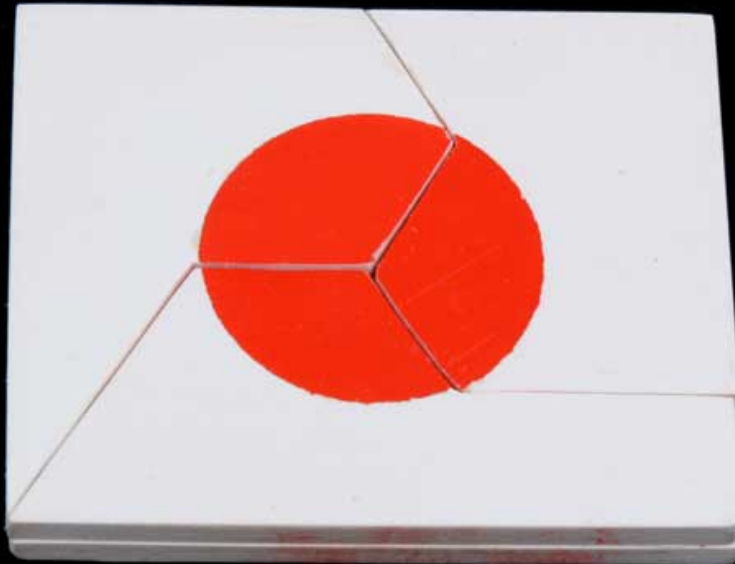
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Hinomaru (The Flag of Japan)

Puzzle Goal: Take apart the three pieces.

Materials: PVC 4 mm

Classification: INT-SHAP



Homage Puzzle

Puzzle Goal: Separate the two identical pieces.

Materials: Brazilian purple wood, birch

Classification: Take-apart

History: This design pays homage to Nob Yoshigahara's Dualock Puzzle, but the similarity is only visual.



29

Japanese Sweets Box

Puzzle Goal: Open the hidden drawer.

Materials: walnut, shiuri cherry, wenge, cloth

Classification: Take-apart



Kepler Cube

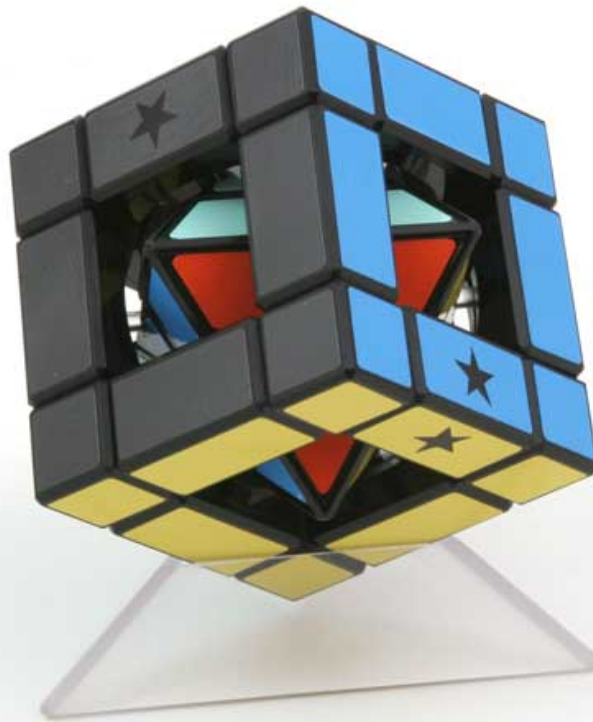
Puzzle Goal: Scramble first, restore all faces, like Rubik's Cube.

Materials: ABS resin, POM

Classification: Sequential movement

Notes: Kepler Cube is a puzzle that the puzzle includes the puzzle.

History: Outside puzzle (OP) is the Void Cube. The inside puzzle (IP) is the apex turning octahedron. OP and IP are connected only by three places (marked by the stars). OP and IP rotate together when the star mark is included in the rotation face. When the star mark is not included, OP and IP rotate separately.



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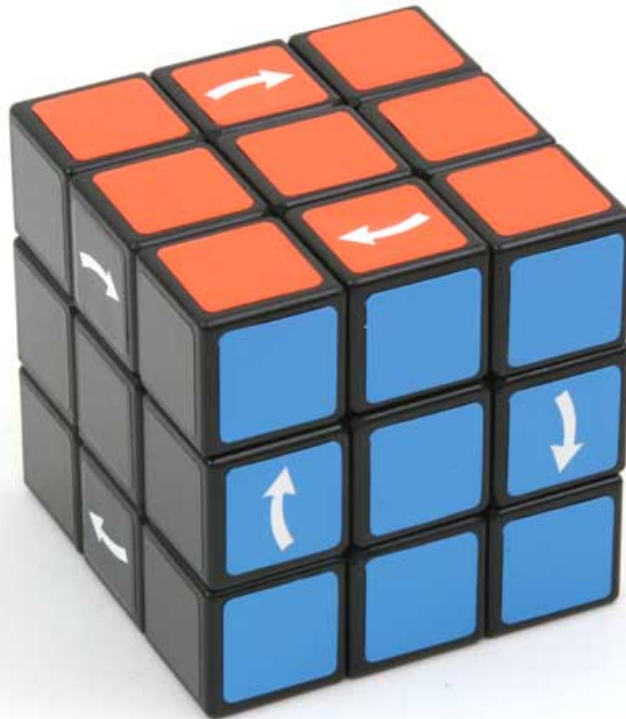
Latch Cube

Puzzle Goal: Scramble first, restore all faces, like Rubik's Cube.

Materials: ABS resin

Classification: Sequential movement

Notes: Edge parts rotate only in the direction of the arrow. White arrows are clockwise and black arrows are counterclockwise. You cannot turn a face with both a white and black arrow.



32

Lighthouse Puzzlebox

Puzzle Goal: Discover the two hidden chambers.

Materials: Maple, purpleheart, leopardwood, walnut and padauk

Classification: Sequential discovery/movement



33

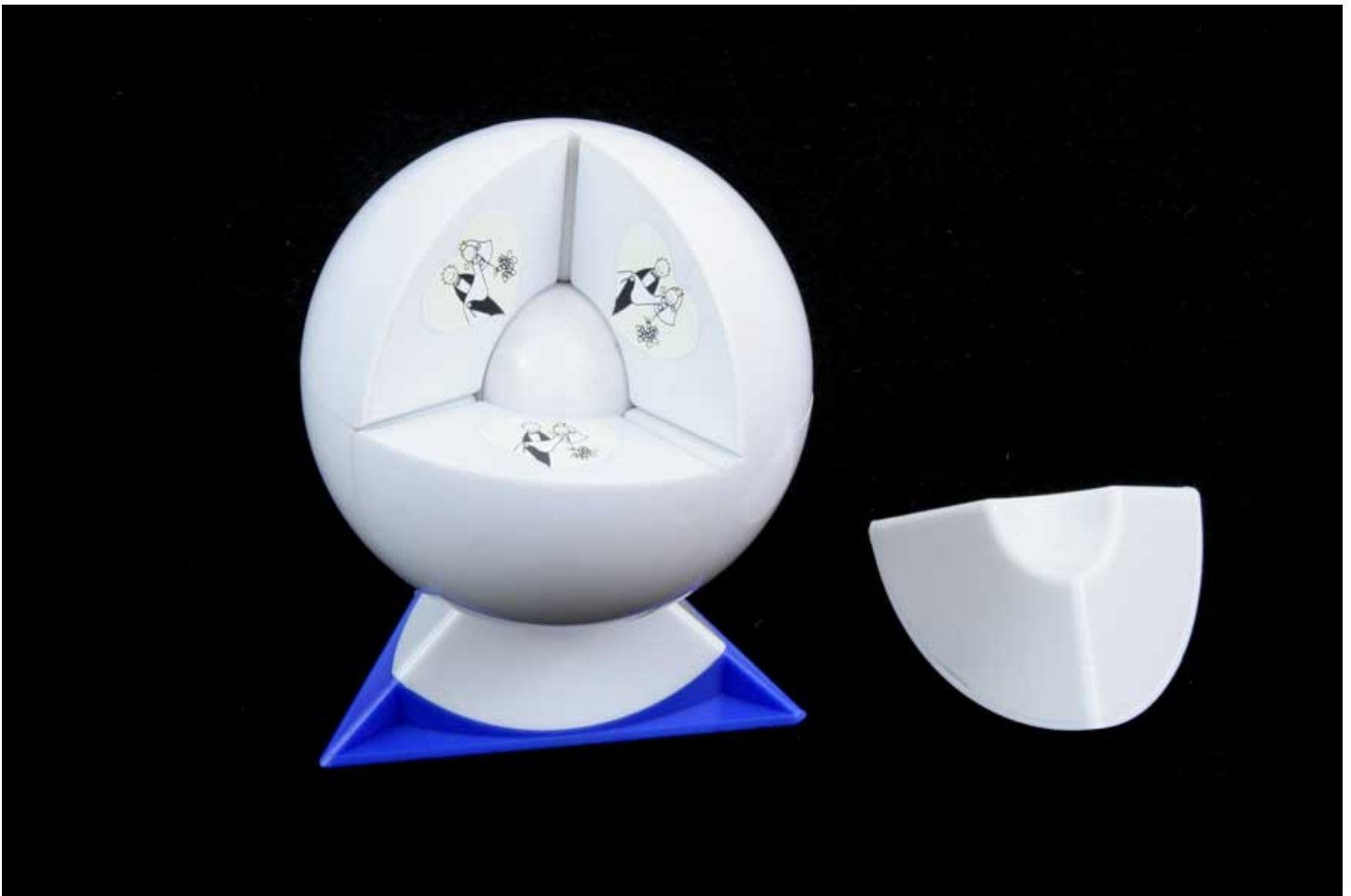
Magnesphere

Puzzle Goal: Rotate the magnetic pieces so that the three identical images are arranged as shown. For a memory challenge, use all eight pieces and memorize the starting configuration before solving.

Materials: Magnets and ABS plastic

Classification: 3D sequential movement

Notes: The mechanism is an improvement of the original Nichols' Cube.



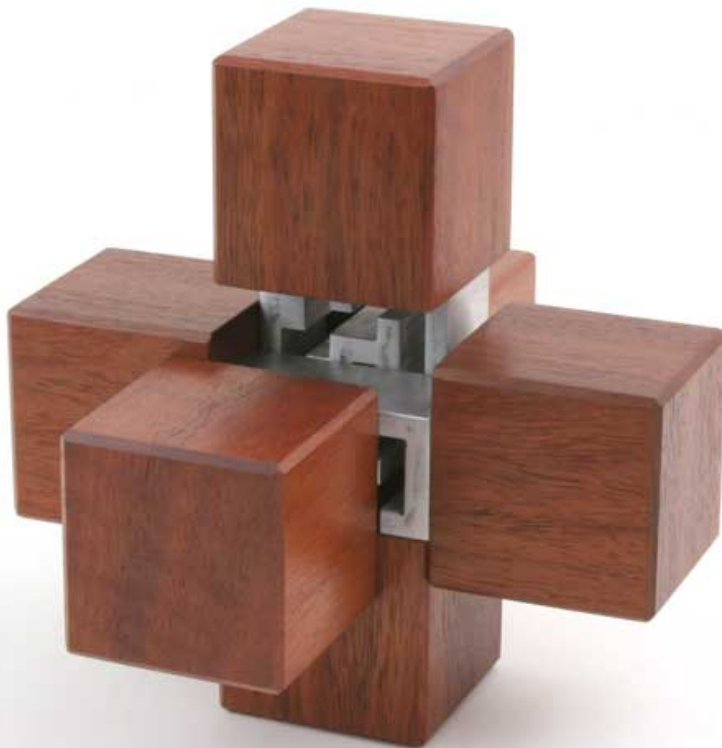
34

Minotaur's Burr

Puzzle Goal: Take the burr apart and then re-assemble.

Materials: Western Australian jarrah, aluminum, polycarbonate

Classification: 3D interlocking burr



35

MMMDXLVI

Puzzle Goal: By moving certain sections of the puzzle in the proper sequence, a piece can then be removed to reveal the hidden chamber inside.

Materials: Various hardwoods and brass inlay

Classification: Sequential movement puzzle box



36

New Secret Box II-2

Puzzle Goal: Remove one panel to find secret compartment.

Materials: Karin, magnolia, keyaki (zelkova)

Classification: Take-apart



37

Nicolas et Fridolin

Puzzle Goal: Disassemble the burr out of the frame. Assemble the burr into the frame so that all the little white cubes are hidden.

Materials: Maple for the frame; dark oak and maple for the pieces

Classification: 3.4 Interlocking / INT-CART



38

Ninja's Tool Box

Puzzle Goal: Open the box.

Materials: Lauan, magnet, acrylic

Classification: Take-apart



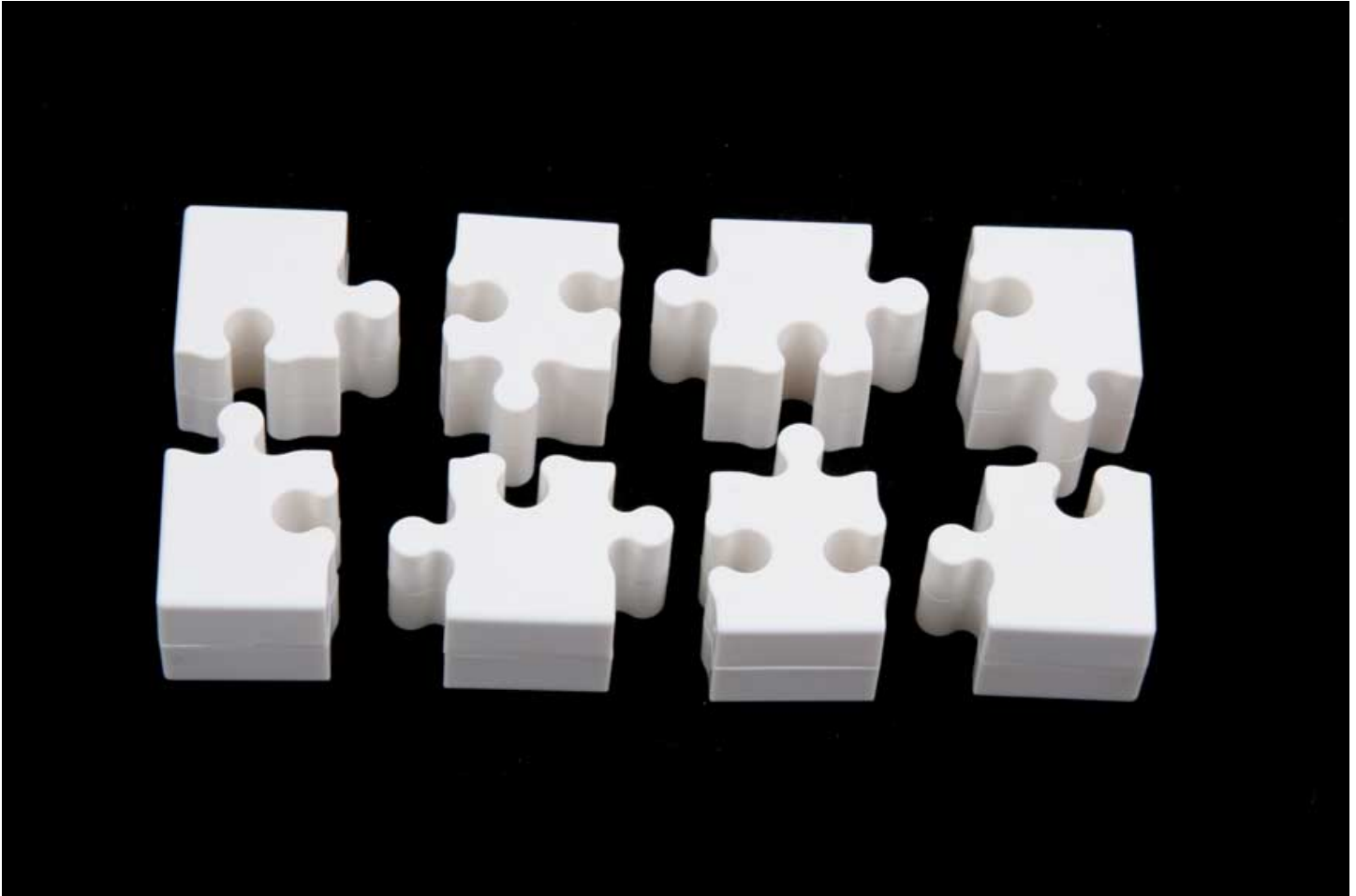
39

Not So Easy

Puzzle Goal: Put 8 pieces into a 4x2 rectangle.

Materials: ABS

Classification: Put-together



40

One Four All & All Four One

Puzzle Goal: To place all four cubes inside the rhombus frame in such a way that the entire structure (frame and cubes) are interlocked (i.e. there are no loose parts).

Materials: Different color types of timber wood

Classification: Interlocking



41

Pinwheel

Puzzle Goal: Disassemble and reassemble.

Materials: Wood

Classification: 3.4 Interlocking solid

History: Inspired by concepts from Andreas Rover's CM13 puzzle and the 4-Piece Jigsaw puzzle.



42

Quadrus

Puzzle Goal: Navigate the ball from the gold frame into the opposite silver frame and back again. Remember which side you start from!

Materials: Acrylic box, GPPS internals, steel ball

Classification: 6.3 RTF/DEX



Qubami

Puzzle Goal: Arrange the puzzle to get three different colors and three different symbols on every row and column of blocks (ignoring the diagonals), on every face of the puzzle.

Materials: Injection-molded transparent ABS blocks, polyurethane domed metallic-effect labels.

Classification: Sequential movement

Notes: Each individual puzzle is unique, with its own solution.



44

Remove the Yolk

Puzzle Goal: Remove the coin.

Materials: Trespa

Classification: Trick or secret opening box



45

Rollo

Puzzle Goal: Start with the nine octahedral pieces purple face down against the dome, leaving the center triangle open. Using only rolling moves (rotation about an edge) reorient all the octahedra so that the yellow face is down against the dome.

Materials: Padauk, red oak, purple heart, yellow heart, steel balls and neodymium magnets

Classification: Sequential movement

History: Inspired by John Harris' Rolling Cube Puzzle.



46

Rose

Puzzle Goal: Open the secret compartment.

Materials: Shuri cherry, maple, walnut, magnolia

Classification: Take-apart



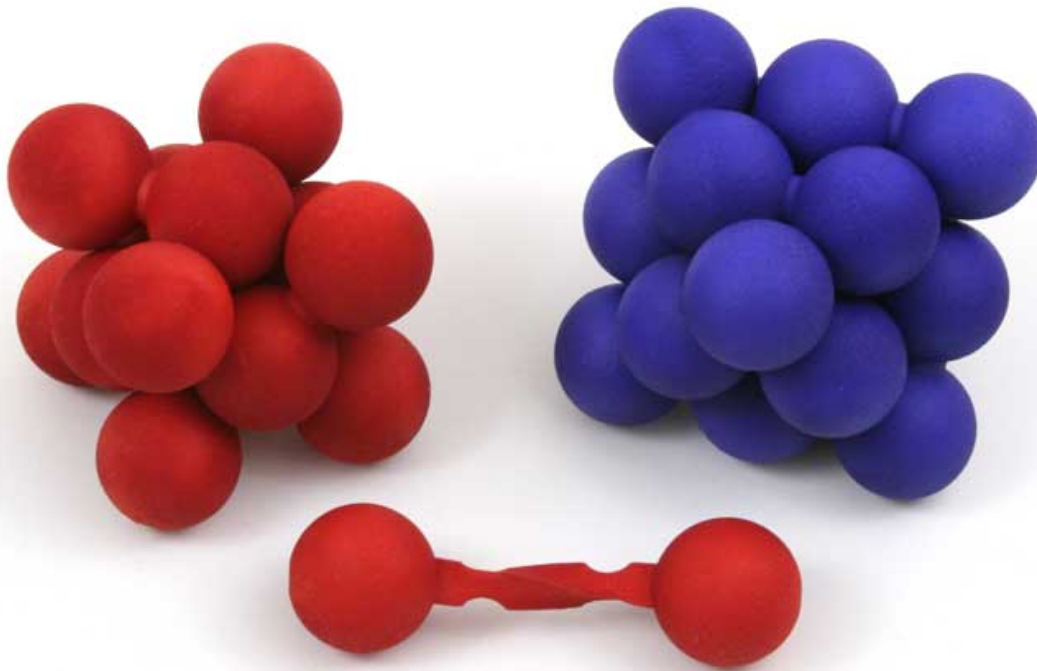
Screwy Duals

Puzzle Goal: Assemble the four blue pieces into an interlocking octahedron. Assemble the four red pieces into an interlocking cube.

Materials: Nylon (selective laser sintering 3D printing)

Classification: INT-POLY (Interlocking, polyhedral and non-Cartesian)

Notes: Both puzzles consist of three helical pieces plus one odd piece. Two of the helical pieces are identical and the third is their mirror image.



48

Sharpen your Wits

Puzzle Goal: Open the hidden compartment.

Materials: Curly koa, mahogany, ebony, poplar, walnut, bloodwood, cherry, pink ivory, maple

Classification: 2.1 Trick or secret opening



49

Sliding Pucks

Puzzle Goal:

The goal is to return the puzzle to a state where on one side the numbers 1-12 are arranged in a clockwise fashion and on the opposite side they are arranged in an anti-clockwise fashion. Also, the 12 unnumbered parts are to be arranged in the middle layer so that the puzzle has vertical bands of matching colors.

Movements possible include 3 layers (disks) of rotation plus a single vertical 'slide' in one direction only.

Materials:

3 Standard IQ139 Puck Puzzles, polyurethane resin, clear acrylic

Classification:

Sequential movement

Notes:

When scrambled many of the numbers will no longer be directly viewable. In addition it will not be known if they actually have numbers or are blank.



50

Snake

Puzzle Goal: Separate the pieces, and restore the original shape.

Materials: Chrome plated iron nail

Classification: Disentanglement



51

Spiral Stand

Puzzle Goal: To remove the golden ring.

Materials: Stainless steel 3.5mm wire, gold-plated ring, rope and wooden bead

Classification: Disentanglement



52

Sponge Cakes?

Puzzle Goal: Find the three secret compartments.

Materials: Chanchin, laquer tree, yosegi, etc.

Classification: Take-apart



53

Steel and Glass

Puzzle Goal: Separate the glass from the nut and bolt.

Materials: Original padlock, glass

Classification: Take apart



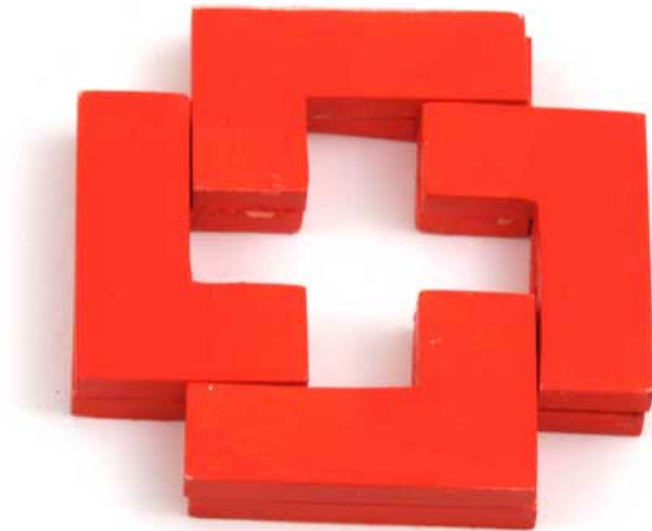
54

Swiss Cross

Puzzle Goal: Put the four pieces together to create a Swiss cross.

Materials: ABS, 3D print

Classification: INT-CART



55

Ternary Burr

Puzzle Goal: Disassemble and reassemble the puzzle.

Materials: Papua New Guinean rosewood

Classification: Interlocking

History: Inspired by Bill Cutler's Binary Burr and Marcus Götz's Crazy Elephant Dance.



56

Thaw

Puzzle Goal: Open the secret compartment.

Materials: Rose wood, shiuri cherry, maple

Classification: Take-apart



57

Three Color Dango

Puzzle Goal: Open each of the three drawers.

Materials: Walnut, ichii, magnolia, dogwood, birch

Classification: Take-apart



Three Snakes

Puzzle Goal:

Place the three snakes in such a way that none of the three snakes can make a "snake movement" (definition see below). Please find at least three solutions.

A "snake movement" is a movement where at least one cube of the snake remains in the same position (without rotation) and the rest of the snake is lifted, rearranged and placed flat in the tray in a new position.

Materials:

Wood

Classification:

1.1 2 Dimensional assembly



59

Titanic

Puzzle Goal: The object is to move the boats around the 6x6 grid to pick up all the passengers from the water. Boats may move forward, backward, or drift sideways. Whenever a boat moves so that someone in the water is next to an empty seat in the boat, then they must take that seat. Once a boat is full, it can not move again.

Materials: ABS plastic

Classification: Sequential movement



60

UFO-3

Puzzle Goal: Disassemble and assemble.

Materials: Maple

Classification: Interlocking



Utopia

Puzzle Goal: Place the 16 buildings so that their heights satisfy the constraints on the challenge card.

- White clues are normal Skyscraper clues (the number of buildings that can be seen from the indicated direction, considering the heights of the buildings inbetween that might block your view)
- Red clues give the number of same-height buildings that can be seen from the indicated direction.

Materials: Plastic

Classification: Put together

History: This design adds a new rule to the classic Skyscraper pencil puzzle.



WitzEnd

Puzzle Goal: The object is to lay the nine cube in a 3x3 square and arrange the letters on each cube in such a way to make 16 three letter English words: six horizontally and vertically on both the top and bottom, as well as on the four exposed sides.

Materials: Pine with labels

Classification: Constrained edge-matching

