

# 1 (Now they know how many holes it takes to fill) The L-Bert Hall

**Puzzle Goal:** A 3x3x3 assembly puzzle, based on the nine L-tricubes with 9 identical pieces and a unique solution.

**Materials:** Wood: cocobolo, jacarunda pardo and birch.

**Classification:** Slocum: 1.2 // Hordern Dalgety: ASS-CART



**Puzzle Goal:** Fit all 14 bowties into the box.

**Materials:** ABS plastic

**Classification:** Slocum--6.4 Miscellaneous Dexterity Puzzles

**Notes:** This puzzle is actually a demonstration of a space filling object. Each object is made up of four pyramids which have transverse sections of regular pentagons. The way that 12 fit together at an apex is that of the regular dodecahedron, not that of the rhombic dodecahedron.



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## Baby Duck Case

**Puzzle Goal:** Place five duck pieces flat in the two frames.

**Materials:** MDF board

**Classification:** 2D put-together



## Bevel Cube

**Puzzle Goal:** Scramble first, and then restore all the faces, like Rubik's Cube.

**Materials:** ABS resin

**Classification:** Sequential Movement Puzzles

**Notes:** There are three geometric elements of a cube: the face, the vertex, and the edge.  
When the faces turn it's a Rubik's Cube; when the vertices turn it's a Skewb; and when the edges turn it's the Bevel cube!

Rotations besides 180 degrees are possible, allowing very unexpected movement and shapes.



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## Bird in the Nest

**Puzzle Goal:** Let the little bird out of the nest.

**Materials:** Wood (wenge, bubinga, and beech)

**Classification:** Take apart puzzle.



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## Blue Balls

**Puzzle Goal:** Interlock all eight pieces.

**Materials:** ABS and Acrylic

**Classification:** Slocum 3.2 Interlocking Geometric Shapes



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## Bolted Cage

**Puzzle Goal:**

1. Remove the four lock pieces.
2. Disassemble and reassemble the puzzle.

**Materials:** Mahogany

**Classification:** 3D Interlocking



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## Cast Loop

**Puzzle Goal:** Assemble the two pieces to form a loop.

**Materials:** Zinc alloy

**Classification:** Slocum - 3.2 Interlocking geometric shapes





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## Cheese and Mouse

**Puzzle Goal:** Put the mouse (circle) in the box with cheese.

**Materials:** Wood (oak and bubinga)

**Classification:** Put-together (2-D Packing problem).



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## Chinese Rings Handle

**Puzzle Goal:** Completely remove the blue rope.

**Materials:** Birch wood and polyester rope

**Classification:** Disentanglement



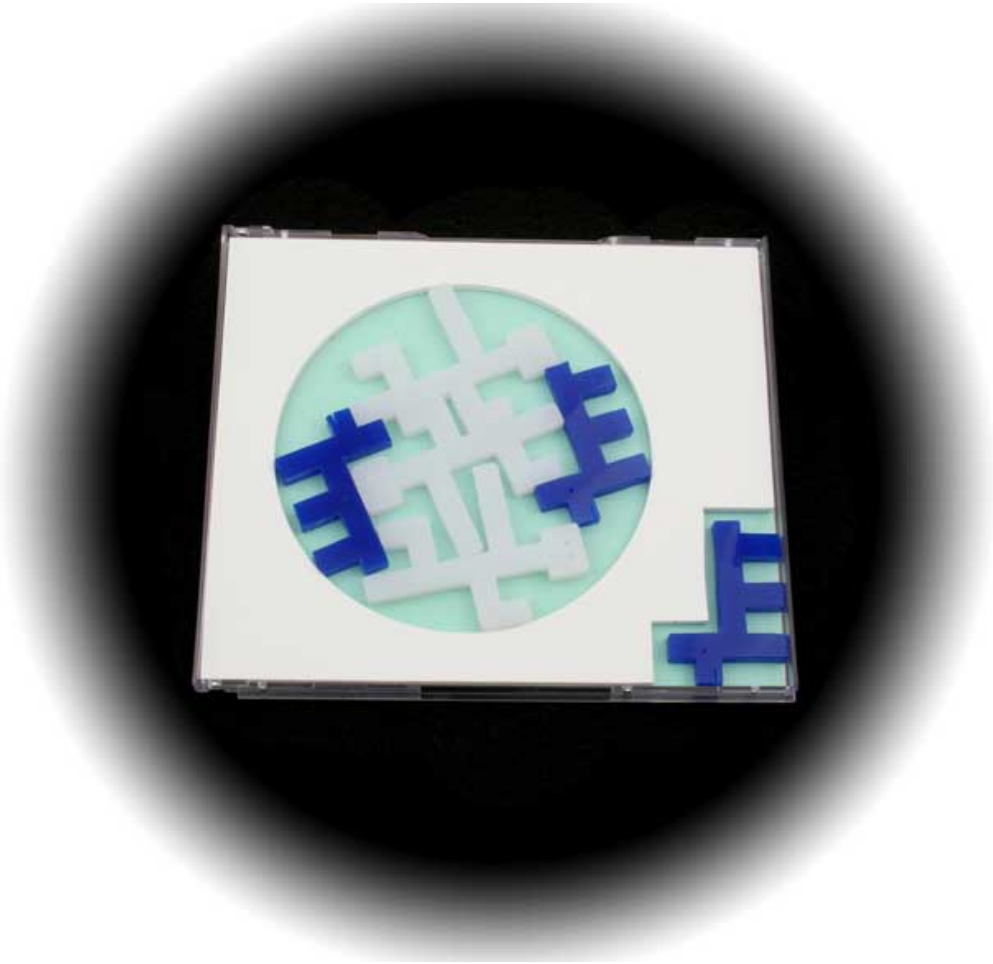
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## Companions

**Puzzle Goal:** Pack the three men and the three dogs flat in the tray.

**Materials:** Plastic pieces and case.

**Classification:** Packing



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## Cross Box

**Puzzle Goal:** Open both secret compartments by manipulating the wooden blocks within the cage.

**Materials:** Bloodwood, beli, purpleheart, magnets

**Classification:** sequential movement



## Cubature of the Ball

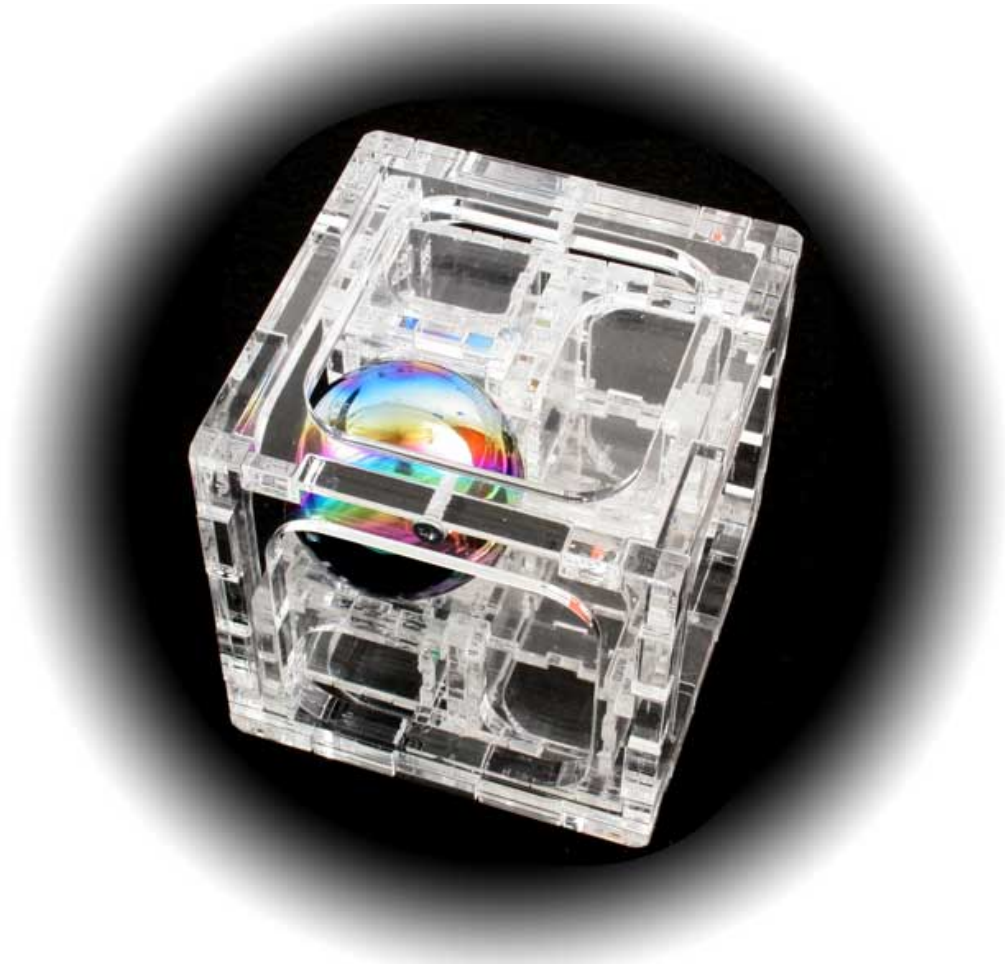
**Puzzle Goal:** Remove the ball.

The cage surrounds eight segments. One segment is empty and the other 7 are filled with 6 identical cubes and one ball. The ball is constrained by the grooves in the cubes and the cage. Aside from this constraint, the ball and the cubes are free to move. The puzzle is a sliding maze where the map changes as the cubes are moved.

If the ball is removed, the goal is then to get the ball into the segment diagonally opposite the entrance.

**Materials:** Plexiglas

**Classification:** SEQUENTIAL MOVEMENT PUZZLES (SEQ)



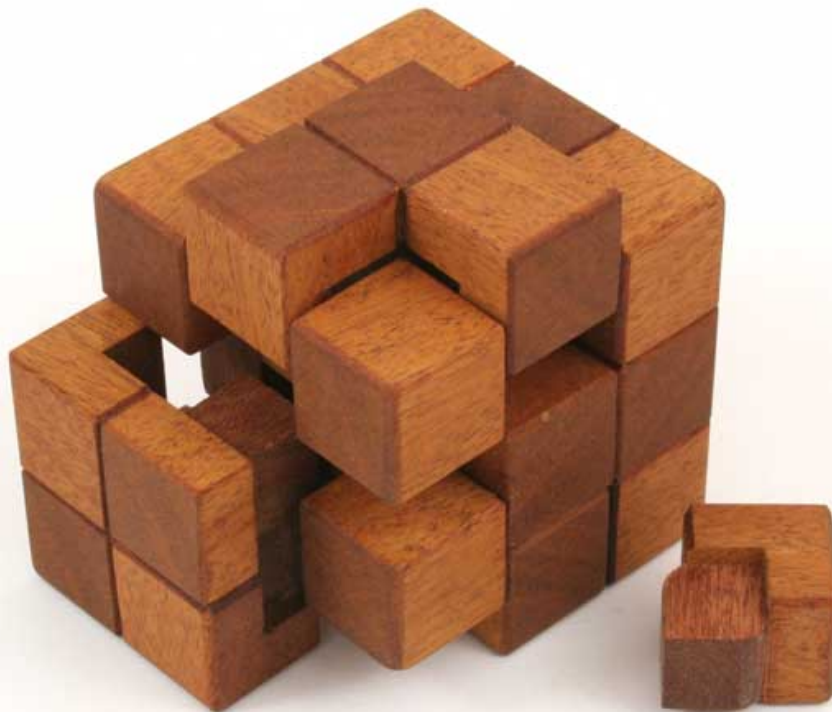
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## Cubicle Puzzle

**Puzzle Goal:** Undo the five main pieces.

**Materials:** Mahogany

**Classification:** Interlocking: 3.2



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## Dé-Mateo

**Puzzle Goal:** Put together and take apart.

**Materials:** ABS, 3d Printer

**Classification:** INT-POLY, Interlocking polyhedral 3d



## Diamond Star

**Puzzle Goal:**

1. Assemble pieces with no two of the same color share sides.
2. Assemble all pieces into a long (8x3x3), color-separated convex hexagon.
3. Assemble 22 pieces to form a color-separated elongated (5x4x4) convex hexagon.
4. Assemble 20 pieces to form a color-separated convex equilateral hexagon.

**Materials:**

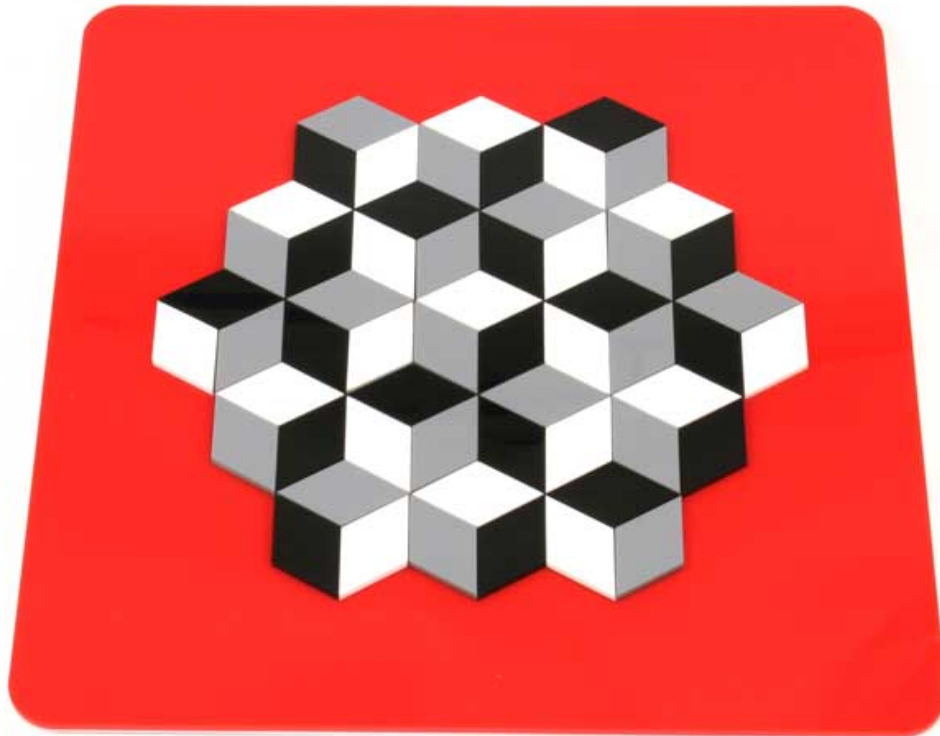
Laser-cut acrylic tiles in a red acrylic tray, with wavy hexagon inset, 23 tiles with total area of 57 diamonds, hand-inlaid with white, black and gray diamonds in star-like patterns.

**Classification:**

Put-together plus non-matching.

**Notes:**

The periodic pattern of two-color stars embedded in hexagons of a third color was originally conceived as the basis for a game board.





## Dice on a String

**Puzzle Goal:** Slide the dice together to form a 3x3x3 cube. 26 dice are connected by a string; place the extra die in the middle where the string must cross twice.

**Materials:** Plastic dices and (minor) flexible colorful string

**Classification:** Folding puzzle FOL (Dalgety)



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## Digits in a Box

**Puzzle Goal:** Fit all ten pieces into the box and close the lid.

**Materials:** Pieces: machined aluminum  
Box: pine or poplar

**Classification:** Polyform, Packing



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## Dinghy

**Puzzle Goal:** First, remove the chain from the wire part without unclasping the chain. Then, return it to the starting position.

**Materials:** Wire and chain.

**Classification:** Disentanglement (Wire-and-String Puzzle)



**20**

## Dissection634

**Puzzle Goal:** You can make a hexagon, a triangle and a square out of all 12 pieces.

**Materials:** Natural Wood coated MDF

**Classification:** Put Together



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## Duodeciburr

**Puzzle Goal:** Find two different ways to assemble the 12 pieces using coordinated motion.

**Materials:** Plum

**Classification:** Interlocking puzzle



## Fall Tower

**Puzzle Goal:**

There are 6 problems of increasing difficulty. In each problem, the goal is to construct a tower of the indicated blocks, placing them end to end so that all visible and adjacent surfaces match in either color or shape. A tower may have a single block lying flat as a base, or have a base of two vertical blocks. All tower blocks not a part of the base will have both ends adjacent to other blocks. The tower must be able to stand without support.

Problem a) Use blocks 1256

Problem b) Use blocks 14567

Problem c) Use blocks 12456

Problem d) Use blocks 123567

Problem e) Use blocks 234567

Problem f) Use all blocks to form a tower

**Materials:**

Maple with acrylic

**Classification:**

put together



**23**

## Football Downunder

**Puzzle Goal:** Ten move puzzle box. Lid is the part with the shoelaces (opposite the map of Australia), it slides off to open; no force needed.

**Materials:** Australian woods, pins magnets

**Classification:** 2.1



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## Forest Puzzle

**Puzzle Goal:** Remove the ring and then put it back.

**Materials:** Natural wood and synthetic string

**Classification:** Disentanglement [ 4.3 String puzzle ]





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## FourFit

**Puzzle Goal:** Fit the four Pentominoes into rectangular tray.

**Materials:** wood

**Classification:** Put-together

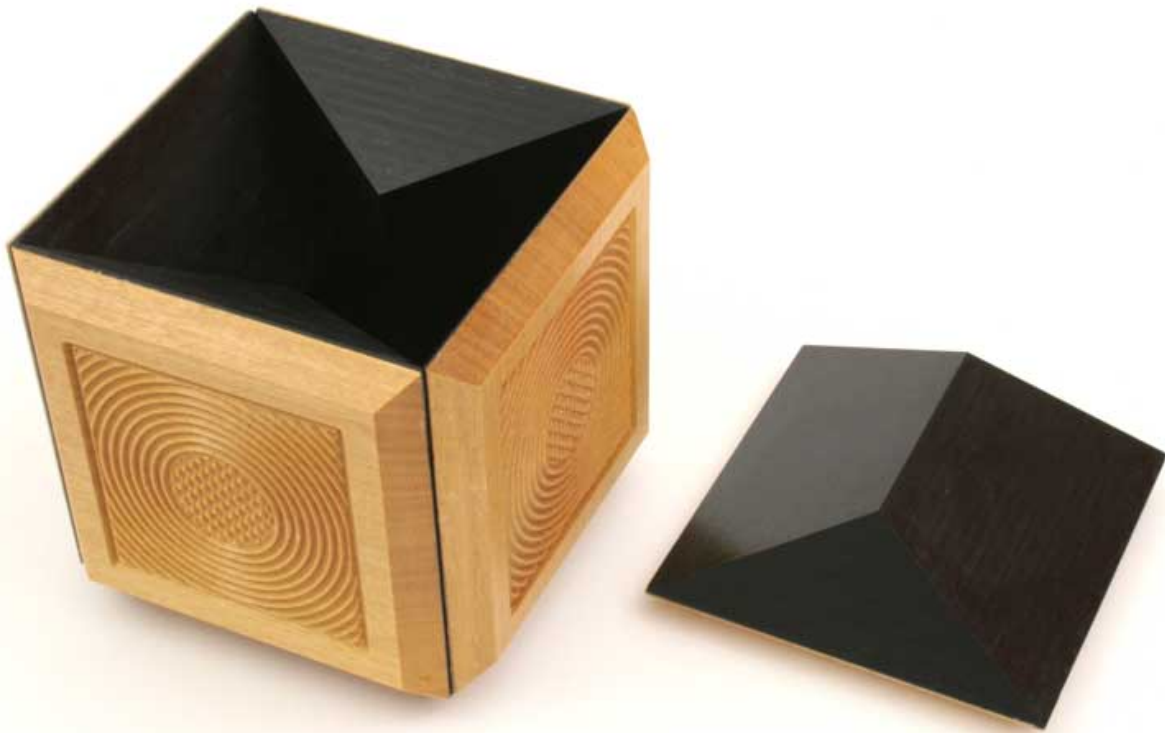


## Inside Out

**Puzzle Goal:** The puzzle contains six pieces. The goal is to connect the six pieces to make either a dodecahedron or a cube. Each edge contains two magnets, which must match in polarity with the adjacent edge.

**Materials:** Ebony, satinwood, and magnets

**Classification:** Put-together



# Jeweled Crown Puzzle

**Puzzle Goal:**

1. Spill out the pieces and make a crown shape with the six pieces. Pieces may be turned over.
2. Rearrange the pieces with an added jewel to make a slightly larger crown shape.
3. Rearrange the pieces with a second added jewel to make an even larger crown shape.

**Materials:**

Wood

**Classification:**

Put Together

**Notes:**

This is the minimum number of pieces known which allows three shapes at different scales to be built.



# La Ronde des Animaux

**Puzzle Goal:** The goal is to solve the enigma of the poem (or back), then arrange the animals as hinted by the poem to form a new figure; then afterwards assemble them in the frame.

**Materials:** Wood, paper and glass

**Classification:** Enigma arrangement, and put-together



## Magnetic Super Dice

**Puzzle Goal:**

Connect the dices to each other to form a solid 3x3x3 cube. The whole cube becomes one consisted form and keeps its shape by magnetic force.

Each face of the cube displays the same side of each separate dice. Each magnet must connect to another magnet.

**Materials:**

Plastic dices and cylindrical magnets

**Classification:**

Pattern puzzle PAT (Dalgety)



## Micromaze

**Puzzle Goal:**

Cover the two dark pins with the smaller cubes by rolling them into place. Each face of the large cube is a separate puzzle.

Begin by placing the small cubes on top of the large cube so that their symbols are visible and match the orientation on the larger cube. Start with the blue arrow cube as the active cube—only the active cube can be rolled. Roll the active cube up, down, left or right and do not fall off the top of the large cube. Only roll onto a pin if there is a hole in the smaller cube which allows it to roll onto the pin. If you roll adjacent to the other cube, you can move your fingers onto the other cube, making it the active cube. Diagonal positions are not adjacent.

**Materials:**

Maple with polyurethane, screws and screw caps.

**Classification:**

Sequential Movement



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## Miruha Burr

**Puzzle Goal:** Remove the three burrs from the cubic structure, then reassemble the cube.

**Materials:** Wood (hemlock and poplar, oil coated)

**Classification:** Interlocking, framed burr



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## Passe-Cylindre

**Puzzle Goal:** Put the brass cylinder in the bottom hole of the wood cylinder (closed by the other piece of wood), so you must get it out by the other hole.

**Materials:** Wood (beech or ash), PCV and brass

**Classification:** Sequential move (Internal maze)





**33**

## Pull the Kunai!

**Puzzle Goal:** Pull the Kunai (sword).

**Materials:** solid wood, poplar

**Classification:** Take Apart



**34**

## Quartet 8L2

**Puzzle Goal:** Separate four identical pieces by explosion, then interlock two colored rings without using force.

**Materials:** Wood (keyaki jindai, mobingi, pao rosa)

**Classification:** Put Together, Take Apart



**35**

## Rappi-Fusion

**Puzzle Goal:** Put together, and then take apart the rings.

**Materials:** Plywood

**Classification:** ASS-MAT, 3D



**36**

## Really Bent Board Burr

**Puzzle Goal:** Disassemble the burr puzzle.  
Find one of the two possible ways to reassemble the puzzle.

**Materials:** Kingwood, holly, East Indian rosewood, tulipwood splines, poplar dowels

**Classification:** 3.6 - Miscellaneous interlocking solid puzzle



**37**

## Sailor's Knot

**Puzzle Goal:** Untie the knot, then re-tie the knot on the inner part, or vice versa.

**Materials:** Birch wood and polyester rope

**Classification:** Disentanglement



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## Save the Ninjas!

**Puzzle Goal:** Remove the ring and Ninja pieces.

**Materials:** spring, yew, teak, poplar

**Classification:** Disentanglement



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## Scroll of Iga Ninjas' Arts

**Puzzle Goal:** Remove the scroll from the rod, then pass the scroll again through the hole.

**Materials:** Bottle, yew and teak

**Classification:** Dexterity



## Secret of Atlantis

**Puzzle Goal:** This puzzle has two sides, and each side has a specified solution state. The goal is to go from one solution state to the other and back.

One solution state (on the one side) shows a picture of two Corinthian columns, and the other solution state (on the other side) shows the picture of a volcano looking at the capital of the city of Atlantis.

**Materials:** Transparent square plastic tiles with diagonal grooves, connecting strings, and paper tiles inserted between the plastic tiles.

**Classification:** 5.6 Miscellaneous sequential movement puzzles

**Notes:** The puzzle is based on the mechanism with square tiles and strings that is used on the Rubik's Magic. A critical difference is that this puzzle uses an odd number of tiles. It is because of the odd number of tiles that this puzzle can never become flat. And it is the same reason that there is no shape-parity, giving the puzzle approximately double the combinations of other even numbered-tile puzzles.





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## Sewing Box

**Puzzle Goal:** Find the hidden needle and string, and then use them to open the hidden drawer.

**Materials:** Kenponashi

**Classification:** Take-Apart



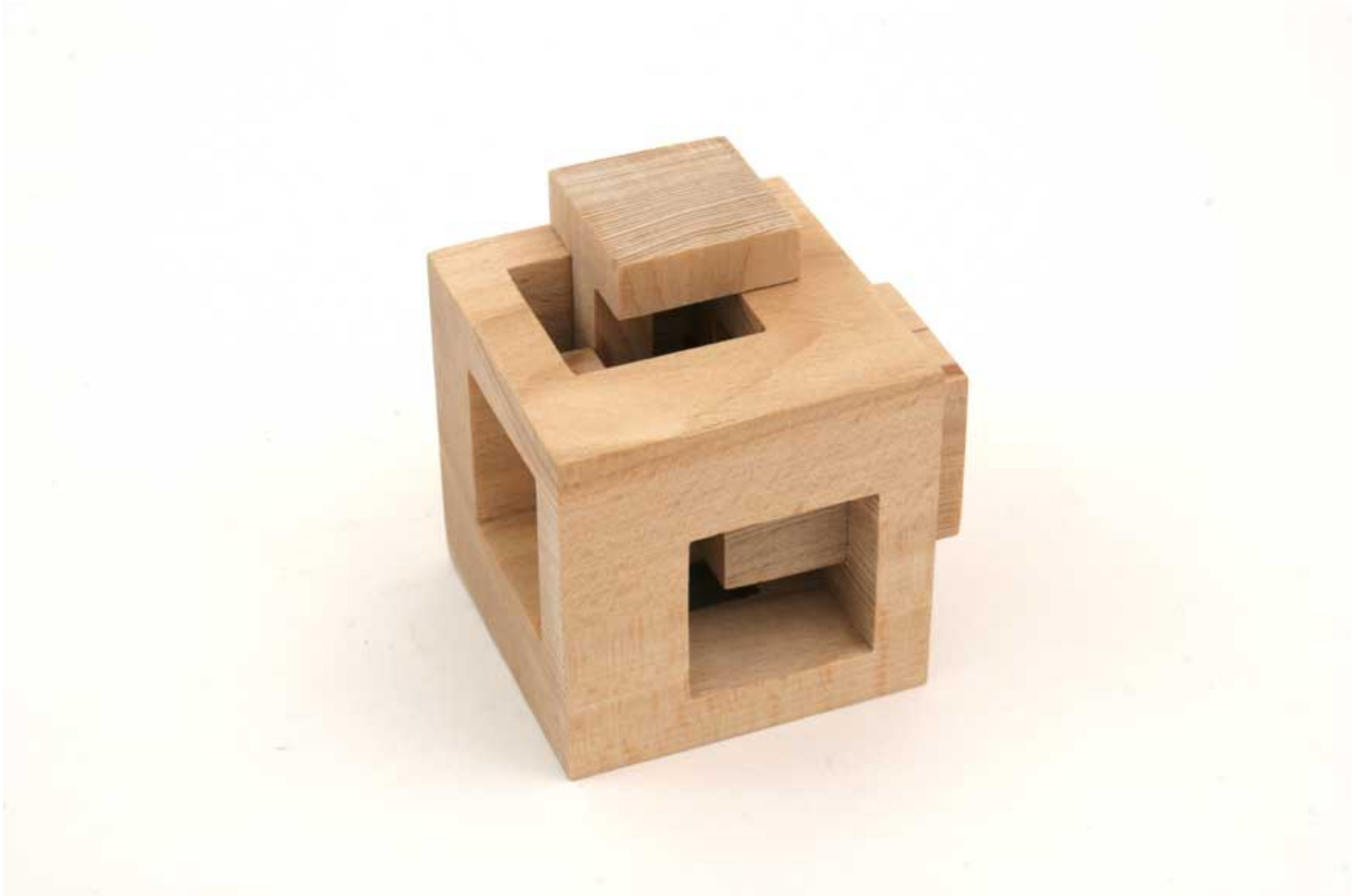
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## Shiroshi Burr

**Puzzle Goal:** Remove the three burrs from the cubic structure, and then reassemble the cube.

**Materials:** Wood (hemlock)

**Classification:** Interlocking, framed burr



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## Sliding Metamorphosis

**Puzzle Goal:** Slide the pieces to form the Square from the Cross.

**Materials:** Maple, white ash, bubinga

**Classification:** Sliding block



# Snake Escape

**Puzzle Goal:** The snakes have escaped! Your job is to pack them all back safely inside the container so you may close the lid.

**Materials:** Snakewood, prehistoric kauri wood, ebony, maple

**Classification:** Put together.

**Notes:** Snakewood is one of the hardest woods in the world. It has a very unique quality of showing a spotted snakeskin figure radiating in all directions. The prehistoric kauri wood is carbon dated somewhere between 30,000 and 50,000 years old. The ancient trees fell long ago and stayed preserved in bogs. Ancient kauri wood is excavated out of the ground in New Zealand.



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## Switched Maze

**Puzzle Goal:**

At the very beginning the stylus is situated at the START point (left). Hold the handle and try to draw it through the maze to the FINISH point (right) and take it out.

When the mission is complete, return the stylus to the START—puzzle is ready for a new victim!

**Materials:**

Plexiglas

**Classification:**

Sequential movement puzzle (SEQ)



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## Tamashido

**Puzzle Goal:** Build the various hollow pyramids with the steel balls, as described in the instructions. The tools, extra balls, and holes can all be used as construction aides.

**Materials:** Hardened steel, PVC, ferrite

**Classification:** DEX-TOOL / INT-POLY



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## Telephone Box

**Puzzle Goal:** The puzzle is to open the telephone box to allow you to have fun with the packing puzzle inside.

To open the telephone box you will need to solve a series of puzzles to find the required tools and work out how to use them to open the door. The pieces packed inside the telephone box spell the words TELEPHONE BOX.

**Materials:** The telephone box is made from satin sycamore timber and finished with brass hardware.

The letters of the telephone box are made from other exotic Australian timbers: T-blush alder, E-grey gum, L-Queensland blackbean, E-grey gum, P-red oak, H-brown quondong, O-saffron heart, N-flooded gum, E-grey gum, b-red oak, o-black wattle, x-blackbutt.

**Classification:** Telephone box – 2.1 Packing puzzle inside – 1.2

**Notes:** The box is a replica of a full size 1940's Queensland PMG telephone box.



# The Great Pyramid

**Puzzle Goal:**

This is a construction kit for 4-level square-based pyramids. The kit's planar pentaspheres can make many challenging 3D assembly puzzles, including the Great Pyramid!

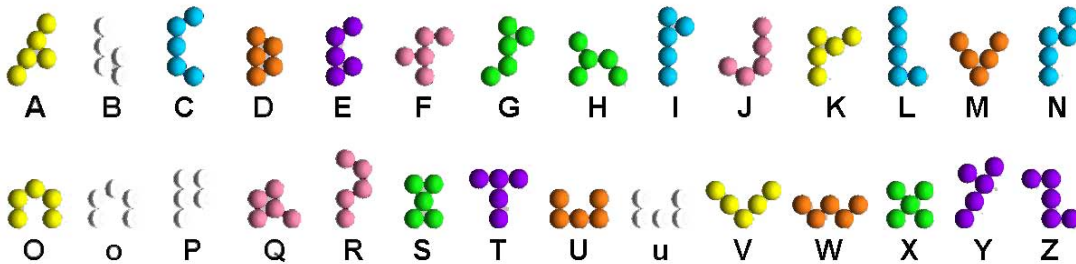
1. Remove pieces JNSU, and build four 4-level square-based pyramids together: AGLoWZ, BIKMRT, CPQVXY, and DEFHOu.
2. Using all 28 pieces, build the Great Pyramid—a 7-level square-based pyramid.

**Materials:**

ping-pong balls

**Classification:**

3D Put-Together





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## Torbus

**Puzzle Goal:** To show the relationship between a toroid and an enclosed ring (similar to a Möbius Strip), by rotating the latter 720 degrees.

**Materials:** Various laminates, rosewood

**Classification:** Interlocking



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## Torbus and Ring

**Puzzle Goal:** Separates into three pieces and assemble as two or three interlocked rings.  
Several interlinked configurations of the three rings can be made without first completely unlinking any one ring.

**Materials:** Oak, steel

**Classification:** Take-apart



# Tornado Burr

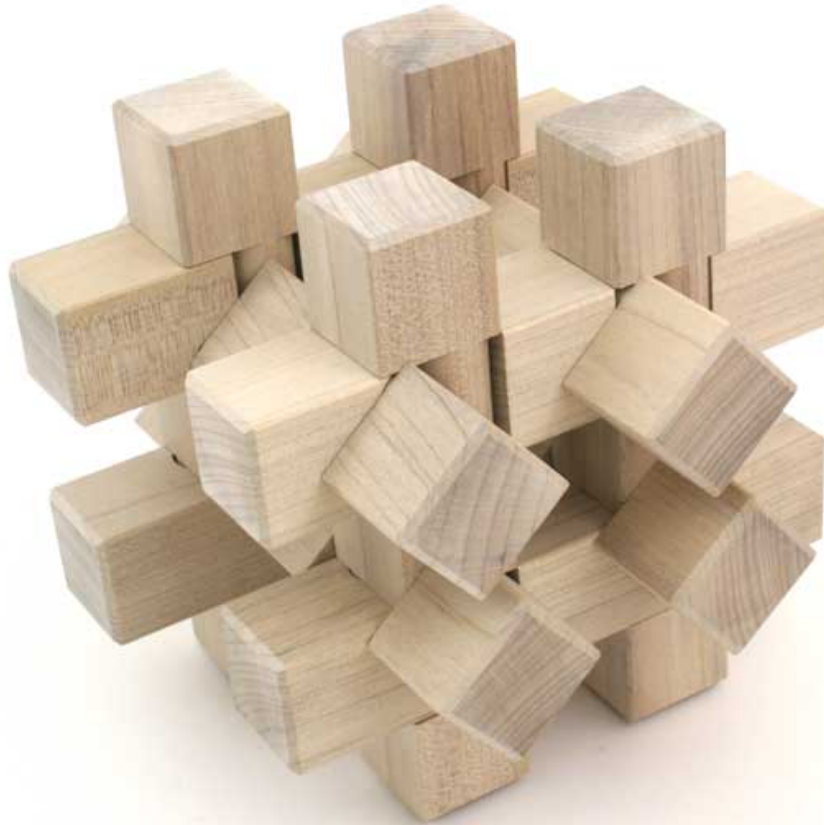
**Puzzle Goal:** Disassemble and reassemble the 12-piece burr.

**Materials:** Magnolia kobus

**Classification:** Interlocking

**Notes:** To assemble or disassemble the Tornado Burr, you must twist the group of 4 pieces simultaneously. Also, such a movement should be done for the other group of 4 pieces one more time.

The most important key of the Tornado Burr is the slanted notches. The slanted notches demand that each piece is assembled and disassembled in the proper order. As you can see, the Tornado Burr has very eccentric movements. Try your luck, and stop this fierce tornado.



# Torus World

**Puzzle Goal:** Assemble and disassemble the three pairs of interlocking rings.

**Materials:** Brass

**Classification:** Interlocking solid puzzle - geometric objects



# TriangleTrio

**Puzzle Goal:** Solve the puzzle in four different ways so that when solved the circles make a different symmetrical pattern each time.

**Materials:** black walnut and red alder wood

**Classification:** 1.1 2D assembly puzzle

**Notes:** Not all solutions have the same type of symmetry.



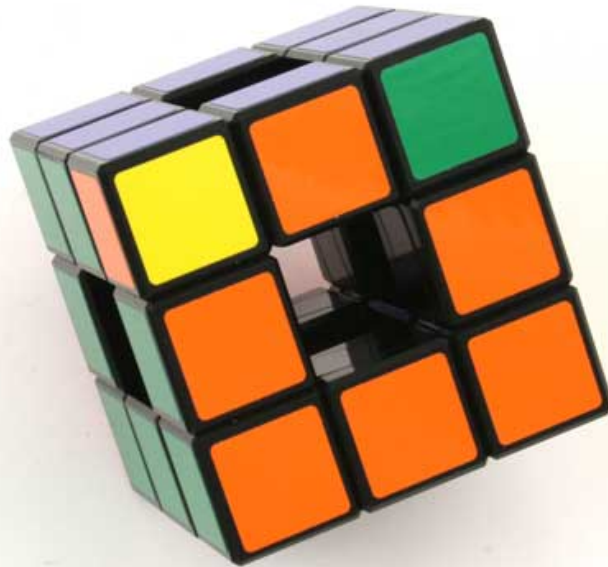
## Void Cube

**Puzzle Goal:** Scramble the cube, and then restore all faces, like Rubik's Cube. In some cases, it will appear that there is no solution to this cube; it is a second puzzle to figure why this happens.

**Materials:** ABS resin

**Classification:** Sequential Movement Puzzles

**Notes:** There are no center cubes!



## Whiz of Oz

**Puzzle Goal:** Move all four cubes from the corners of a board to the center, and so that the letters showing on the cubes match the letters underneath them. There are five playing boards.

Cubes roll from one square to another. The color on the top of a cube cannot match the color underneath it or next to it (except for the goal positions), and the color on any side of a cube cannot match the color of the corresponding neighboring square (note that the color of an occupied square is that on top of occupying cube, not the board square underneath it, making it possible for cubes to work together).

**Materials:** Wood, cardboard

**Classification:** Sequential movement

