

Octahedra Tetrahedra puzzle designs

many by Wayne Daniel / Interlocking Puzzles

George Bell version 9/18/2023

Notes:

1. The order is the number of vertical layers in the BurrTools file.
2. Some designs are excluded because they do not fit in the Tetrahedra-Octahedra grid.
3. Unique identifier is
(2 characters for final shape) + (2 characters for designer) + (2 digit number)
New numbering for each final shape.
4. The numbering will be flexible until this list becomes more complete. As new puzzles are added, it may need to be recalculated.
5. Shapes: Tetrahedron = TE, Truncated Tetrahedron = TT, Stellated Tetrahedron = ST, Octahedron = OC, Truncated Octahedron = TO, Half Octahedron = HO, Cuboctahedron aka Truncated Cube = CO.

Tetrahedron Designs

Tetrahedron2 TEUU01

Designer: Unknown

Maker: Lots

Burrtools file made, order 2

Pieces: 2 identical

Total voxels: 12 (4+8), pieces: 6, 6

Each piece is 2+4A (half a tetrahedron)



Notes: This is a common puzzle, make a tetrahedron using two identical pieces. The photo shows a copy made by Allen Boardman.

References:

<http://puzzles.baxterweb.com> (search for "Tetrahedron"), see Lot 3349

Tut's Tetrahedron TEAB02

Designer: Allan Boardman

Maker: Allan Boardman

Made: Unknown



Burrtools file made, order 2

Pieces: 4 identical

Total voxels: 12 (4+8), pieces: 3, 3, 3, 3

Each piece is 1+2A

Notes: Cutting the TE1 piece in half diagonally produces this confusing puzzle with four identical pieces. This was an IPP26 exchange puzzle from Allan Boardman.

References:

<http://puzzles.baxterweb.com> (search for "Tetrahedron"), see Lot 2297

Tetrahedron3 TEWD03

Designer: Wayne Daniel

Maker: Interlocking Puzzles

Made: 1991-2002



NO Burrtools file, order 3

Pieces: 3

Total voxels: 43 (11+32)

Notes: Three pieces form a tetrahedron. One piece stamped "WAD '91" or "Interlocking Puzzles 2001". A similar puzzle is sold by Creative Crafhhouse in 2023. Looking at photos of the pieces, they don't seem to be the same puzzle.

References:

<http://puzzles.baxterweb.com> (search for "Tetrahedron"), see Lot 3156

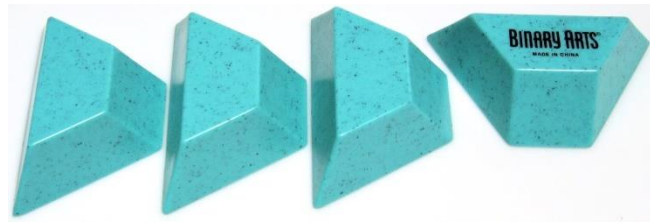
<https://www.cs.brandeis.edu/~storer/JimPuzzles/ZPAGES/zzzTetrahedron3Pieces.html>

Tetrahedron4 TEWS04

Designer: Wolfgang Schneider

Maker: Binary Arts

Made: 1998



Burrtools file made, order 4

Pieces: 4 identical

Total voxels: 104 (24+80), pieces: 6+20A

Notes: Four identical pieces form a tetrahedron. 3.25 inches on a side when assembled.

References:

<https://www.cs.brandeis.edu/~storer/JimPuzzles/ZPAGES/zzzPyramid4PiecesVer2.html>

Tetrahedron4 TEWD05

Designer: Wayne Daniel

Maker: Interlocking Puzzles

Made: 2002



Burrtools file, order 4 (this is a BurrTools example)

Pieces: 4

Total voxels: 104 (24+80)

Notes: 2 pairs of identical pieces make an elegant tetrahedral assembly. Edge: 12 cm.

References:

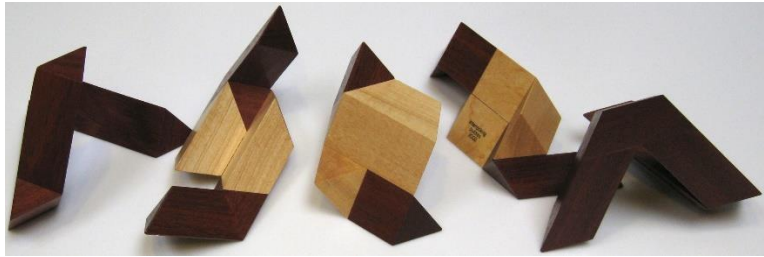
<http://puzzles.baxterweb.com> (search for "Tetrahedron"), see Lot 478, 3155, 5357, 2897?

<https://www.cs.brandeis.edu/~storer/JimPuzzles/ZPAGES/zzzTetrahedron4Pieces.html>

Tetrahedron5 TEWD06

Designer: Wayne Daniel
Maker: Interlocking Puzzles
Made: 2002

NO Burrtools file, order 5
Pieces: 5
Total voxels: 205 (45+160)



Notes: Comes apart into a 3-piece and 2-piece assembly. Edge: 14 cm or 6".

References:

<http://puzzles.baxterweb.com> (search for "Tetrahedron"), see Lot 972

<https://www.cs.brandeis.edu/~storer/JimPuzzles/ZPAGES/zzzTetrahedron5Pieces.html>

Tetrahedron6 TEWD07

Designer: Wayne Daniel
Maker: Interlocking Puzzles
Made: ?

NO Burrtools file, order 6
Pieces: 6
Total voxels: 356 (76+280)



Notes: 6-pieces form a tetrahedron using coordinate motion. Inscribed "W.D."

References:

<http://puzzles.baxterweb.com> (search for "Tetrahedron"), see Lot 476

Truncated Tetrahedron3 TTWD01

Designer: Wayne Daniel
Maker: Interlocking Puzzles
Made: 2002?

NO Burrtools file, order 3
Pieces: 4
Total voxels: 100 (20+80)



Notes: Two identical pieces and two mirror image pieces assemble using coordinate motion. Interior stamped "Interlocking Puzzles". Not a true truncation as the edge lengths are not equal.

References:

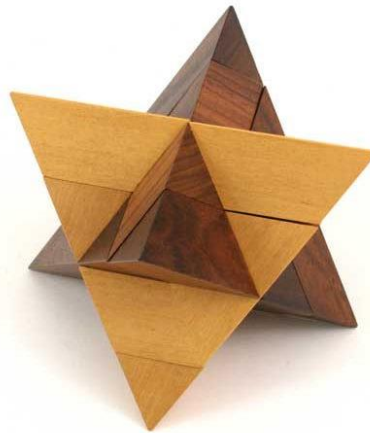
<http://puzzles.baxterweb.com> (search for "Tetrahedron"), see Lot 579

<https://www.cs.brandeis.edu/~storer/JimPuzzles/ZPAGES/zzzTruncatedTetrahedron.html>

Dual Tetrahedron4 STWD01

Designer: Wayne Daniel
Maker: Interlocking Puzzles
Made: ?

NO Burrtools file, order 4
Pieces: 4
Total voxels: 152 (40+112)



Notes: Two pairs of identical pieces fit together to form two intersecting tetrahedra or a stellated tetrahedron.

References:

<http://puzzles.baxterweb.com> (search for "Tetrahedron"), see Lot 680

Octahedron Designs

Truncated Octahedron4 TOSS01

Designer: Steve Smith

Maker: Interlocking Puzzles

Made: 2004

Wood: Maple

Burrtools file made, order 4

Pieces: 4

Total voxels: 160 (32+128), pieces: 40, 40, 40, 40

Each piece is made from 8 copies of 1+4A



Notes: George Bell purchased a copy 7/2023 for \$170.00 from Gergo Prémecz (CD auction).

First piece to come out is labeled "Interlocking Puzzles".

The puzzle is serially interlocking.

Sets of 3 sold for \$11,111 and \$1,207.

References:

<https://www.cs.brandeis.edu/~storer/JimPuzzles/ZPAGES/zzzTruncatedOctahedra.html>

<http://puzzles.baxterweb.com> (search for "Truncated Octahedron"), Lots 581, 3015, 5536

Truncated Octahedron4 TOSS02

Designer: Steve Smith

Maker: Interlocking Puzzles

Made: 2004

Wood: Jarrah

Burrtools file made, order 4

Pieces: 4

Total voxels: 160 (32+128), pieces: 40, 40, 40, 40

Each piece can be made from 8 copies of 1+4A



Notes: George Bell purchased a copy 7/2023 for \$170.00 from Gergo Prémecz (CD auction).

Four piece coordinate motion. Two pairs of mirror image pieces.

The puzzle is not built from identical components. One piece is labeled "Interlocking Puzzles".

One piece is made from 2+12A + 2+4A + 4x(1+4A)

Second piece is made from $1+8A + 2+4A + 5x(1+4A)$
Sets of 3 sold for \$11,111 and \$1,207.

References:

<https://www.cs.brandeis.edu/~storer/JimPuzzles/ZPAGES/zzzTruncatedOctahedra.html>
<http://puzzles.baxterweb.com> (search for "Truncated Octahedron"), Lots 974, 5534-5

Truncated Octahedron4 TOWD03

Designer: Wayne Daniel
Maker: Interlocking Puzzles
Made: 2004
Wood: Tajibo

NO burrttools file, order 4
Pieces: 4
Total voxels: 160 (32+128)

Notes: Four pieces assemble in two halves. One piece stamped "Interlocking Puzzles".
This is reportedly the simplest of the three.
Sets of 3 sold for \$11,111 and \$1,207.

References:

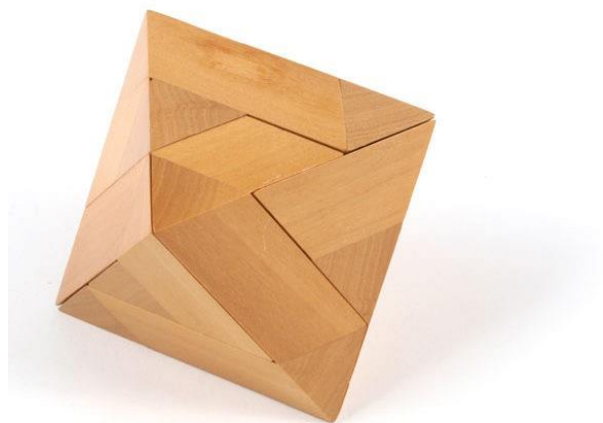
<https://www.cs.brandeis.edu/~storer/JimPuzzles/ZPAGES/zzzTruncatedOctahedra.html>
<http://puzzles.baxterweb.com> (search for "Truncated Octahedron"), Lots 3015, 5536

Octahedron6 OCWD01

Designer: Wayne Daniel
Maker: Interlocking Puzzles
Made: 2004
Wood: Peroba Rosa

NO burrttools file, order 6
Pieces: 4
Total voxels: 184 (32+152)

Notes: Two pair of identical pieces form an octahedron. Edge length 8-9 cm.
Sold for \$200-\$300.



References:

<http://puzzles.baxterweb.com> (search for "Octahedron"), Lot 4670, 5358

Octahedron6 OCWD02

Designer: Wayne Daniel

Maker: Interlocking Puzzles

Made: 2004

Wood: Peroba Rosa

NO burrttools file, order 6

Pieces: 4

Total voxels: 184 (32+152)



Notes: Four piece sequential assembly. Edge length 9 cm.

Sold for \$200-\$300.

References:

<http://puzzles.baxterweb.com> (search for "Octahedron"), Lot 6260

Octahedron6 OCWD03

Designer: Wayne Daniel

Maker: Interlocking Puzzles

Made: 2004

Wood: Unknown

NO burrttools file, order 6

Pieces: 4

Total voxels: 184 (32+152)



Notes: Four pieces form an octahedron using coordinate motion

Sold for \$700.

References:

<http://puzzles.baxterweb.com> (search for "Octahedron"), Lot 2558

Octahedrik OCRB04

Designer: Rick Brouwer

Maker: Unknown

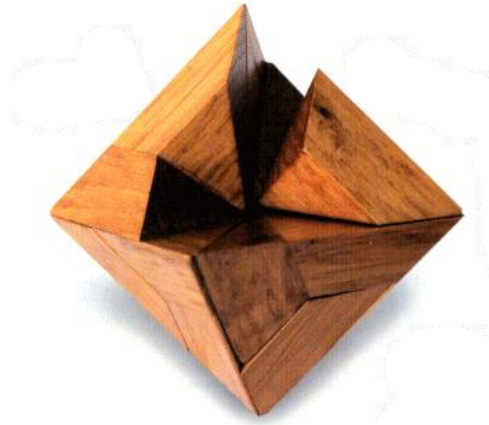
Made: 2003

Wood: Unknown

NO burrttools file is possible on this one

Pieces: 6

Total voxels: n/a



Notes: The pieces do not fit into the T-O geometry

References:

<https://market.cubicdissection.com/listing/octahedrik/116894>

Half Octahedron2 HOB501

Designer: Bill Sheckels

Maker: Bill Sheckels

Made: Unknown

Wood: Padauk or Walnut or Maple

Have burrttools file, order 2

Pieces: 4 identical

Total voxels: 28 (4+24)



Notes: Four identical pieces 1+6A form a half-octahedron (4-sided pyramid). George Bell has a copy of this puzzle.

References:

Sold at <https://www.etsy.com/shop/blackdogpuzzleworks> as "Pyramid IV"

Cuboctahedron4 COWD02

Designer: Wayne Daniel

Maker: Interlocking Puzzles

Made: 2004

Woods: Jatoba, Peroba Rosa, Jarrah

NO burrttools file, order 4



Pieces: 4

Total voxels: 264 (56+208)

Notes: Also called a Truncated Cube. These three puzzles have the same size and shape, with six square faces and eight triangular faces (corresponding to where the corners of the cube have been truncated). The five piece version was designed by Steve Smith and the 6 and 7 piece versions by Steve and Leslie Smith. Here is some of what they say about these three puzzles:

Five piece Truncated Cube (Jatoba, left?): "Each piece is a challenge, even after removing the first three, getting the last two apart and together isn't easy. Reassembly? Let's just say this should NOT be the first polyhedra puzzle of ours you work with."

Six piece Truncated Cube (Peroba Rosa, middle?): "A small internal space requires multiple moves to get the first piece out."

Seven piece Truncated Cube (Jarrah, right?): "Unique trilateral symmetry makes this puzzle quite difficult. This puzzle can be thought of as two three piece puzzles, with a key piece that holds it all together."

References:

<http://puzzles.baxterweb.com> (search for "Truncated Cube"), Lot 580

<https://www.cs.brandeis.edu/~storer/JimPuzzles/ZPAGES/zzzTruncatedCubes.html>