

Rubik's Cube - The Ultimate Solution

All these puzzles with just two little algorithms??? Absolutely!

4x4x6 Cuboid

The **4x4x6 Cuboid** is a cuboid which can be thought of as a 4x4x4 Rubik's Revenge with an extra layer on top and bottom. The ultimate solution takes care of this cube in much the same way as the Rubik's Revenge. The basic idea is to first solve the inner 4x4x4 and then complete the outer layers.



Everything from here on in is from me, since this cube was not invented when the original site was made. It's assumed you can solve a 3x3x3 rubiks cube using the ultimate solution, as well as a 4x4x4 and a 3x3x4 cuboid.

The Basic Plot

1. Solve centers
2. Pair edges of inner 4x4x4
3. Place edges of inner 4x4x4
4. Place corners of inner 4x4x4
5. Pair outer edges
6. Place outer edges
7. Place outer corners

Step 1: Solve Centers

This is done in the same way as the Rubik's Revenge, in that there is no fixed center piece. The only complicating part is that the puzzle is not in cuboid shape, so it may not be immediately obvious which are the center pieces.



Step 2: Pair Edges of Inner 4x4x4

All centers are now in place and it's time to concentrate on solving the inner 4x4x4. You can see this inner 4x4x4 if you ignore the outer top and bottom faces. There are two types of edge pieces.



RUBIK'S CUBE

[How I Found The Ultimate Solution](#)

[Overview of the Ultimate Solution](#)

[What's an Edge Piece Series?](#)

[What's a Corner Piece Series?](#)

[Step 1 - Bottom Cross](#)

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[Step 3 - Remaining Edge Pieces](#)

[Step 4 - Five Corner Pieces](#)

[Step 5 - End Game](#)

This site has taken an awful lot of time and effort.

If you appreciate it, and would like me to keep making tutorials, please use the button below to send me a little encouragement. Any amount you donate will be very gratefully received. Thanks!



OTHER TWISTY PUZZLES

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[4x4x4](#)

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The first type is an edge piece which has two stickers on it. These edge pieces make up the middle layer.

The second type is an edge piece which has an outer edge piece attached to it. This type has only one sticker colour on it.

Use the edge piece series as follows

1. Find two edge pieces needing to be matched
2. Bring them together (centers will be disturbed)
3. Use an edge piece series to move the matched edge pair onto a different face. Make sure that edge pair 3 is not already a matched pair.
4. Return the centers

It's simple, as this video will show.

Step 3: Place Edges of Inner 4x4x4

Now treat each edge pair as a single edge piece. Turn only the outer faces. Position the edge pairs exactly as you would for the 3x3x3 Rubik's cube.

Help! My Last Edge Pair Is Placed But Inverted?!?

This will happen some of the time. The fix is as follows:

1. Hold the puzzle with the 4x4 faces at top and bottom.
2. Turn the bottom 3 slices (bottom half of puzzle) one turn in either direction.
3. Re-solve the centers.
4. Re-pair the edges.
5. Re-place the edges.

The process is very simple. This video will make it clear.

4x4x5 (Ayi's)

4X4X6

5x5x4 (Ayi's)

5x5x5

5x5x5 Supercube

6x6x6 V-Cube

7x7x7 V-Cube

Corner Turning Octahedron

Crazy 3x3x2

Crazy 3x3x3 Earth - CC Last

Crazy 3x3x3 Earth - Reduction

Crazy 3x3x3 Jupiter - CC Last

Crazy 3x3x3 Jupiter - Reduction

Crazy 3x3x3 Mars - CC Last

Crazy 3x3x3 Mercury - CC Last

Crazy 3x3x3 Mercury - Reduction

Crazy 3x3x3 Neptune - CC Last

Crazy 3x3x3 Saturn - CC Last

Crazy 3x3x3 Uranus - CC Last

Crazy 3x3x3 Uranus - Reduction

Crazy 3x3x3 Venus - CC Last

Crazy 3x3x3 Venus - Reduction

Crazy 4x4x4 II

Crazy Earth Tetrahedron

Crazy Jupiter Tetrahedron

Crazy Mars Tetrahedron

Crazy Mercury Tetrahedron

Crazy Neptune Tetrahedron

Crazy Saturn Tetrahedron

Crazy Tetrahedron Standard

Crazy Venus Tetrahedron

Dayan Gem IV

Dayan Jewel

Face Turning Octahedron

Face Turning Starminx

Fisher Cube

Latch Cube

Master Skewb

Megaminx - Edges First

Megaminx - Layer By Layer

Pentahedron 3 Layer

Pentahedron 5 Layer Standard

Pentahedron Crazy Jupiter

Pentahedron Crazy Uranus

Professor Pyraminx

Pyraminx Crystal

Rex Cube

Skewb Ultimate

Tetra Pyramid

Witeden Super 3x3x3

Witeden Super 3x3x4

Witeden Super 3x3x5

COMING SOON!

Pentahedron 5 Layer

Pentahedron Crazy Earth

- Pentahedron Crazy Jupiter
- Pentahedron Crazy Mars
- Pentahedron Crazy Mercury
- Pentahedron Crazy Neptune
- Pentahedron Crazy Saturn
- Pentahedron Crazy Uranus
- Pentahedron Crazy Venus
- Pentahedron Super 5 Layer
- Pyraminx
- Teraminx

Step 4: Place Corners of Inner 4x4x4

We now complete the solving of the inner 4x4x4 by placing its corners. These are not actually corners of the puzzle, but we treat them as though they are. This means we can use the corner piece series just as we would for a standard cube.

Note that even though there are two white-green inner corners, each of them has only one position on the puzzle.

Place each inner corner one by one until there are three left. Then use setups if necessary to place these last three, much like an endgame scenario.

Here's a video showing it on a solved puzzle:


And now let's see it on the scrambled puzzle.

Help! I Need To Swap The Last Two Inner Corners?!?

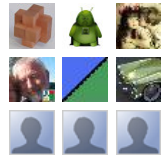
This will happen some of the time. The fix is as follows:

1. Hold the puzzle with the 4x4 faces at top and bottom.

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2. Turn the bottom 2 slices one turn in either direction.
3. Re-pair the edges.
4. Re-place the edges.
5. Re-place the inner corners.

This fix will mean that instead of having to swap two corners, we will have three corners to cycle at the end. The process is very simple. This video will make it clear.

Step 5: Pair Outer Edges

At this point the puzzle has returned to cuboid shape. We now hold the puzzle so that the 4x4 faces are at left and right. We pair the outer edges in effectively the same way that we pair the inner edges.

Use the edge piece series as follows

1. Find two edge pieces needing to be matched
2. Bring them together (centers will be disturbed)
3. Use an edge piece series to move the matched edge pair onto a different face. Make sure that edge pair 3 is not already a matched pair.
4. Return the centers

It's simple, as this video will show.

Step 6: Place Outer Edges

This step is the simplest step of the solve. We hold the puzzle with the 4x4 faces at top and bottom, and use edge piece series to move outer edge pairs into position. Even if we find there are two outer edge pairs to swap at the end, this is easily fixed by turning the upper face one turn and then using edge piece series to finish placing the edge pairs.

Step 7: Place Outer Corners

The final stage of the solve is to place the outer corners. We do this just as we would for a 3x3x4 cuboid. Use the corner piece series where we turn the left and right faces 180° instead of 90°.

This video will show the corner piece series on a solved puzzle .

Now let's see it in action on the scrambled puzzle.

Help! I Need To Swap The Last Two Outer Corners?!?

This will happen some of the time. The fix is as follows:

1. Hold the puzzle with the **4x4 faces at left and right**.
2. Turn the bottom 2 slices 180°.
3. Re-place the centers.
4. Re-pair the outer edges.
5. Re-place the outer edges.
6. Re-place the outer corners.

This fix will mean that instead of having to swap two outer corners, we will have three outer corners to cycle at the end. The process is very simple. This video will make it clear.

And that's it. Your 4x4x6 is now solved. I trust this site has been helpful. If you have any questions or want some clarifications, please use the comments to do so.

Posted by chareaves at Friday, April 27, 2012 

Labels: [4x4x6](#), [4x4x6 solution](#), [rubiks](#), [solve the 4x4x6](#), [the ultimate solution to rubik's cube](#), [Tomz 4x4x6](#), [Tomz 4x4x6 solution](#), [twisty puzzles](#), [ultimate](#), [ultimate solution](#)

3 comments:



Kevin Apr 27, 2012 01:18 PM

My goodness! You are a genius! It is absolutely amazing that you can apply these techniques to such a complex cuboid. I will probably not use this as my primary technique but it will be fun to try this method as a secondary approach!

Kevin
PuzzleMad

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chareaves Apr 27, 2012 03:44 PM

So what will your primary technique be? I'm curious!



Kevin Apr 28, 2012 08:38 AM

The way I had thought it out was to solve the 2x2 centres as you have and then I would pair the edges BUT instead of pairing the edges like you, I would pair the extended edges together and the non-extended edges whilst ignoring the layer in.

My next step would be to solve it as a 4x4 which would return it to a cuboid state (I only want to ensure that the centre 2 rows are fully solved - the top and bottom 2 layers don't matter) - you could use your system to do it as it is just a normal 4x4 solve. I have an algorithm that is quite easy to remember for the single edge flip parity issue.

My next step would be to complete the centres (4x2 areas) by flipping end to end to match up and then turning out before remaking the broken edges again.

After this I would use my standard cuboid algorithms to solve the rest (I start at the middle and work out) this is just as I solved the 3x3x9.

BUT this is all hypothetical as my 4x4x6 is caught in the post somewhere
- I have been waiting over 2 weeks with no sign as yet!!!

Kevin
PuzzleMad

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