



How to Solve a 5x5x5 Rubik's Cube

Four Parts: [Before Starting](#) [Solving the 3x3 Centers](#) [Solving the Edges](#) [Finishing Up](#)

Solving the original 3x3x3 Rubik's Cube is hard and will impress your friends. Solving the 4x4x4 Rubik's Cube is even harder and more impressive. But solving the 5x5x5 Rubik's Cube is even harder and potentially mind-blowing. Once you know how to do it, you can follow through, step by step, to solve even the toughest of cube arrangements.

Part
1

Before Starting

- 1 Realize that the 5x5x5 cube is more complicated than the basic 3x3x3 cube.**
 - Not only it is more complicated, you would also need to know how to solve the 3x3x3 cube and the 4x4x4 in order to be able to solve the professor's cube. Solving the professor's cube involves the same logic and contains many similar algorithms that are used in the 3x3x3 and 4x4x4 cubes.
- 2 Know the side notations.** Note that although the 5x5x5 cube has an additional row, its notation is the same as in the 4x4x4 cube, since the center row will not be turned independently of other rows.

Part
2

Solving the 3x3 Centers

- 1 Solve the top base center.** Start with locating the white center piece on your scrambled cube. The white side will represent the top of the cube.
 - Similarly to solving the first layer on a 3x3x3 Rubik's Cube, create a 3x3 white area in the center by completing inner edges on other sides and then transferring them to the white side.
 - Since this is the first step, you shouldn't be worried about breaking up anything and can freely turn the cube as you please as long as it completes the white center.
- 2 Create a cross on the bottom base.** Because the white center is already completed, you want to make a center on the bottom without destroying the white center.
 - From here, you can start using a simple algorithm $R U^2 R'$ for transferring the cross pieces to adjacent sides for such cases.
- 3 Complete the bottom base center.** After you have a cross completed, you would need to fill in the rest of the yellow center.
 - In order to transfer the inner corners into their corresponding center, perform the algorithm $Rr U Rr' U Rr U^2 Rr'$. Keep in mind that this algorithm will be used in completing other side centers.

- 4 Complete two more centers.** First, start with choosing two adjacent side centers.
 - As in the previous step, complete the crosses on the sides by using the algorithm $R U^2 R'$.
 - After, apply the algorithm $Rr U Rr' U Rr U^2 Rr'$, to transfer all inner corners to their corresponding sides to form a center.
- 5 Finishing all the centers.** After completing the first two adjacent sides, complete the two remaining centers on the cube using the same approach as explained in the previous step.
- 6 Verify your cube centers.** You should have all six 3x3 area centers completed on each side respectively.

**Part
3**
Solving the Edges

- 1 Use a basic strategy for solving the edges.** Most of the edges can be solved using a simple strategy. Locate matching wings on the cube and situate them on opposite edges. After, simply connect them and then substitute the entire edge with a scrambled edge.
 - To connect a wing to its corresponding edge without breaking any of the centers or edges that you have already completed, perform a substitution by using the base algorithm $Ll' U L U' Ll'$ for the left side and $Rr U L' U' Rr'$ for the right side.
 - Note that you might have to search for a scrambled edge by turning the side to which the completed edge is moved.
- 2 Complete the majority of the edges.** Using the same approach, complete all the edges except for the last two that remain since there would be no other scrambled edges left for substitution.
- 3 Complete the last two edges.** Eventually you will run out of scrambled edges for substitution and you would have to finish the remaining two edges using algorithms. This algorithm will swap 1 wing on the top with its opposite wing on the top. If they're on the right side do this one $Ll' U^2 Ll' U^2 F^2 Ll' F^2 Rr U^2 Rr' U^2 Ll^2$. If they're on the left side do this one $Rr U^2 Rr U^2 F^2 Rr F^2 Ll' U^2 Ll U^2 Rr'^2$.
- 4 Verify your edges.** By now you should have completed all the centers and edges.

**Part
4**
Finishing Up

- 1 Solve the 3x3x3 cube.** After completing the previous step, you can see that you have created a 3x3x3 Rubik's Cube structure. Using your previous knowledge, solve the rest of the cube as you would normally solve a 3x3x3 Rubik's Cube.
- 2 Congratulations!** You finally solved the 5x5x5 Rubik's Cube.

Community Q&A

How do I verify the edges? All the edges on my cube are in the wrong position, and I don't know how to do it.

 BobsonJoe
Make sure the cube is now composed of corners, 3x3 centers, and 1x3 blocks of the same color (the edges).
Not Helpful 0 Helpful 6

Why would anyone even do this?

 wikiHow Contributor
It's a personal challenge like a crossword puzzle or a memory game.
Not Helpful 8 Helpful 5

To create a cross on the bottom base what color should be on the top if the color white is already complete? Does U2 mean turning the top side twice?

 wikiHow Contributor
The opposite of white is yellow, blue is green, and red is orange. If white is down, yellow is up, blue is in the front, red will be on the right, orange on the left, and green on the back. U2 means turning the top layer twice.
Not Helpful 1 Helpful 0

Tips

- Whenever you make a mistake and you accidentally scramble your cube, go back to the previous steps and start over again.
- Be very careful when performing the algorithms because if you fail, you would have to redo the structures that you messed up.
- Remember that you cannot master the professor's cube from only one time of solving it. You need to constantly practice and improve in order to avoid making simple mistakes. Refer to these instructions as many times as you need.

Things You'll Need

- 5x5x5 Rubik's Cube

Sources and Citations

- <http://www.alchemistmatt.com/cube/5by5cube.html>
- https://protofusion.org/idiots_guide_to_rubiks_cube/oldsite/5x5x5.html
- <http://imgur.com/r/all/wsTqj>