



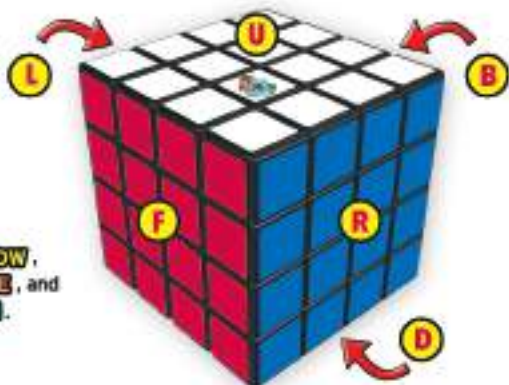
Solution Guide
4x4 Rubik's Cube
Unlock the Secret!

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STAGE 1:

Get to know your Rubik's Revenge

Like the 3x3 Rubik's Cube, the Rubik's Revenge is made up of edge, corner, and center pieces. Both puzzles have 8 corner pieces, however the Revenge has 24 center pieces instead of 6, and 24 edge pieces instead of 12.



When the Cube is solved,

WHITE is opposite **YELLOW**,
RED is opposite **ORANGE**, and
BLUE is opposite **GREEN**.



R = RIGHT FACE



L = LEFT FACE



U = UP FACE



D = DOWN FACE



F = FRONT FACE



B = BACK FACE



r = INSIDE RIGHT



l = INSIDE LEFT



u = INSIDE UP



d = INSIDE DOWN

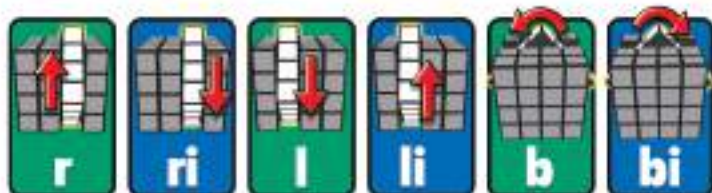


f = INSIDE FRONT



b = INSIDE BACK

When making the moves below, hold your Cube so that the FRONT (F) face is facing you. Each move is a $\frac{1}{4}$ turn rotation. A letter with an "i" after it means to make an inverted, or counter-clockwise, turn when looking at that face directly.



If there is a 2 in front of the letter, then make that turn twice.



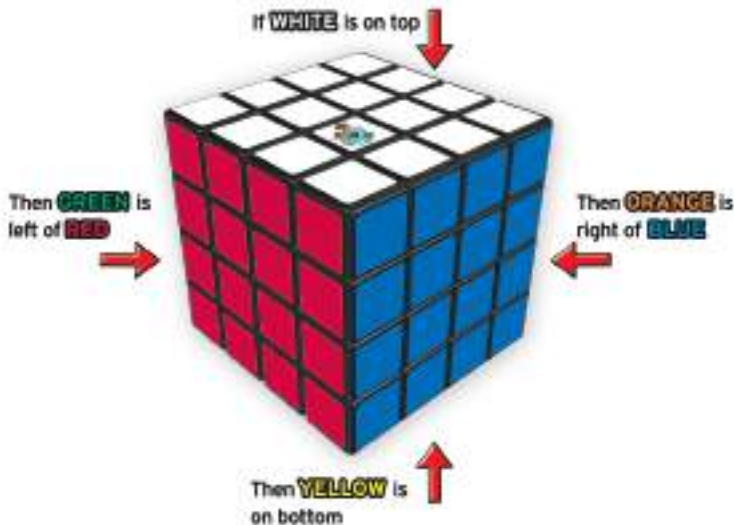
STAGE 2

Solve the Centers



GOAL

Unlike the 3x3 Rubik's Cube, there is not a fixed center piece to indicate the color of each face when the Cube is solved. The color layout is found through observations of the corner pieces, or by knowing that the Rubik's Cube follows a certain color layout:



APPROACH:

To solve the centers, swap two center pieces at a time from adjacent faces until all six colors are grouped. After solving one color, remember to follow the color layout above when choosing where to group the centers of the next color.

Step 1

To swap two center pieces that are on adjacent faces, hold the Cube so that the pieces are on the UP and RIGHT faces.

Step 2

If needed, turn **U** until the desired center piece of the UP face is in the highlighted position, and turn **R** until the center piece of the RIGHT face is in the highlighted position.



Step 3

Follow this sequence to swap the pieces.



Step 4

Continue swapping center pieces until all 6 faces (24 center pieces) are solved and in the correct color layout.

Congratulations! You have solved the centers.



STAGE 3: Solve the Edges



APPROACH:

To solve the edge pieces, find two edges with the same colors and pair them together.

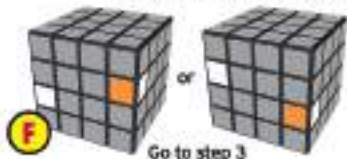
Step 1

Identify an edge piece that needs to be paired. Hold the Cube so that the piece is between the **FRONT** and **RIGHT** faces.



Step 2

Find the other edge piece with the same two colors. Use some combination of the turns **U**, **L**, **D**, and **B** to get the other edge between the **FRONT** and **LEFT** faces.



Step 3

If the edges are not directly across from each other, follow this sequence to line them up.



Step 4

Once the edges are across from each other, follow this sequence to pair them.



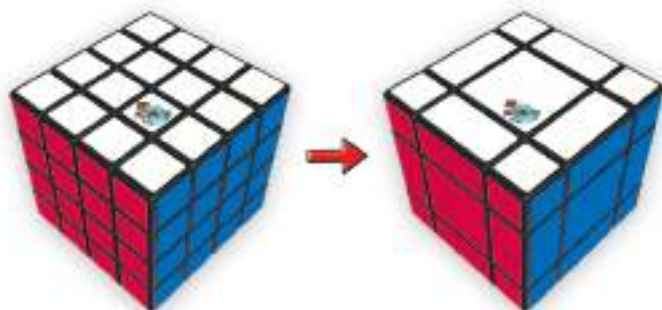
Step 5

Repeat these steps until all 24 edge pieces are paired.

Solve the 4x4 like a 3x3

STAGE 4

By grouping the centers and pairing the edges, the 4x4 Rubik's Revenge can now be solved like the 3x3 Rubik's Cube.



APPROACH:

Using outside layer turns (U, D, F, B, R, and L), follow the steps needed to solve the 3x3 Rubik's Cube. The outside layer turns will not scramble the solved centers or edges.

IMPORTANT:

There may be two times during the 3x3 solve that additional steps are needed to solve the 4x4. These two cases are referred to as parities, and are not addressed in the 3x3 Solution Guide. The parity fixes can be found on pages 8 and 10 of this guide.

A solution guide for the 3x3 can be found at:
www.YouCanDoTheCube.com





Step 1

Solve the WHITE Cross.



Step 2

Solve the WHITE Corners.



Step 3

Solve the Middle Layer, treating the two inside layers as one. This picture shows the Cube with the WHITE face down.



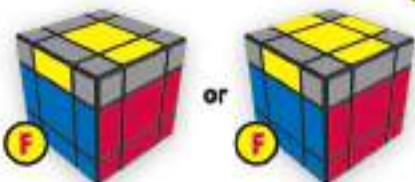
Step 4

Make the YELLOW Cross. This is where the first parity may occur when following the 3x3 Solution Guide. Determine how many YELLOW edge pairs are on the UP face and follow the corresponding steps.

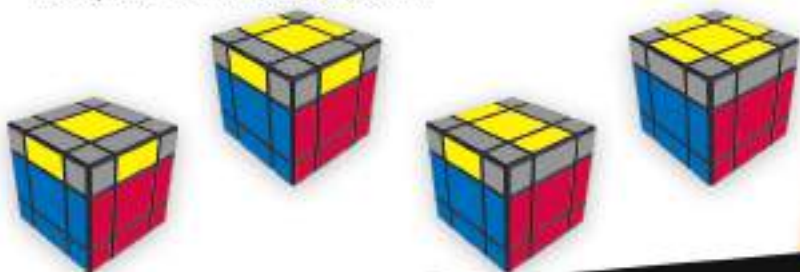


Step 4 Continued

If there are 1 or 3 edge pairs on the UP face, then hold the Cube as shown and follow this sequence to fix the parity.



If there are 0, 2, or 4 edge pairs on the UP face, then continue with the steps outlined in the 3x3 Solution Guide.





Step 5

Make the UP face all YELLOW.



Step 6

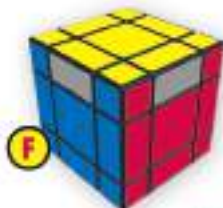
Position the YELLOW Corners correctly.



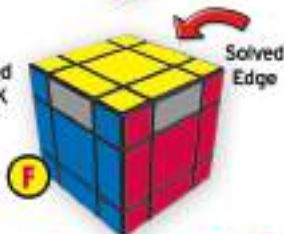
Step 7

Position the YELLOW edges correctly. This is where the second parity may occur. Determine how many of the YELLOW edge pairs are in the correct position and follow the corresponding steps.

If there are **no YELLOW edge pairs** in the correct position, follow the sequence below either once or twice until at least one edge pair is positioned correctly.



If there is **one YELLOW edge pair** positioned correctly, hold the Cube so it is in the BACK and follow the sequence below either once or twice until the Cube is solved.



Step 7 Continued

If there are two **YELLOW** edge pairs positioned correctly, then the Cube is in a parity state. To fix the parity and solve the Cube, determine which two edge pairs need to be swapped, and follow the corresponding sequence.

If the edge pairs that need to be swapped are **adjacent**, hold the Cube so that they are on the **FRONT** and **RIGHT** faces. Then follow this sequence to solve the 4x4.

F



If the edge pairs that need to be swapped are **opposite** of each other, hold the Cube so they are on the **FRONT** and **BACK** faces. Then follow this sequence to solve the 4x4.

F



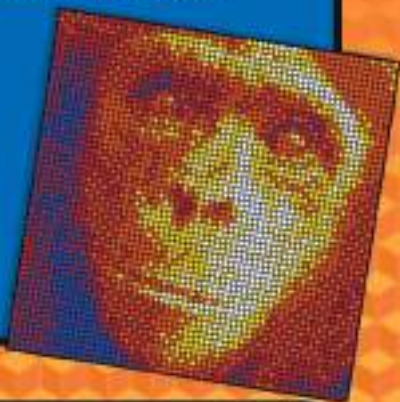
Congratulations!



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Thank you to Bryan Kinkel and Dan Van der Vieren
for their contributions to this guide.

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V1- 6 /18