

SOLUTION GUIDE

Unlock the Secret!

STAGE 1: GET TO KNOW YOUR RUBIK'S CUBE

DEFINITIONS OF RUBIK'S CUBE PIECES

THE PARTS:



EDGE PIECES

PIECES WITH TWO (2) COLORS. THERE ARE TWELVE (12) EDGE PIECES LOCATED IN THE MIDDLE ROWS.



CORNER PIECES

PIECES WITH THREE (3) COLORS. THERE ARE EIGHT (8) CORNER PIECES LOCATED ON THE CORNERS.



CENTER PIECES

PIECES WITH ONE (1) COLOR. THERE ARE SIX (6) CENTER PIECES LOCATED IN THE CENTER OF EACH SIDE. CENTER PIECES DO NOT MOVE AND REPRESENT THE COLOR OF THEIR SIDE.

WHITE YELLOW ORANGE RED GREEN BLUE

CENTER PIECE COLORS ARE ALWAYS OPPOSITE EACH OTHER:

- WHITE OPPOSITE YELLOW
- ORANGE OPPOSITE RED
- GREEN OPPOSITE BLUE

EACH SIDE OF THE CUBE IS REPRESENTED BY A LETTER

R = Right Face - Right side of the cube 

L = Left Face - Left side of the cube 

U = Up Face - Top side of the cube 

D = Down Face - Bottom side of the cube 

F = Front Face - Front side of the cube 

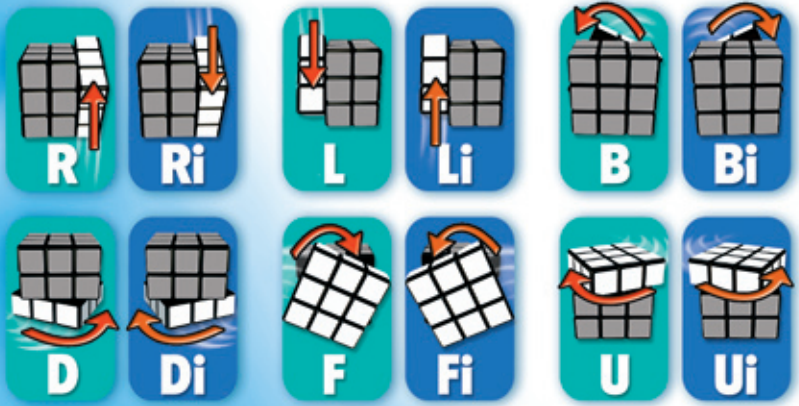
B = Back Face - Back side of the cube 

A letter with an "**i**" after it means an inverted or counter-clockwise move when looking at the face directly.

VERY IMPORTANT

When making the moves below hold your cube full-face front with logo on top as shown. Dark grey on the pictures means the color does not matter. Each move is a 1/4 turn rotation.





STAGE 2: SOLVE THE WHITE CROSS

Holding Your Cube:

Holding your cube with the white center piece on the top (U) face, you must create a white cross as shown to the right. Much of this level is achieved with practice and by trial and error...but we do have some tips.



Tips:

- Be sure to solve the sections of the white cross in the following order - blue, orange, green, red.
- Notice the EDGE PIECE COLORS above match the top white center piece and the side red and blue center pieces. This is how we know the edge pieces are in the correct positions.
- Keeping the white center piece on top, move the blue/white edge piece to the bottom (D) face, then rotate it on the bottom until it is directly under the blue center piece. Now hold your cube so the blue center piece and blue/white edge piece are on the right (R) face.

Rotate the right (R) face 

until the blue/white edge piece is on the top (U) face and above the blue center piece.



- If your cube looks like this, hold your cube so the orange center piece is on the right (R) face and start solving the side with the orange center piece the same way as stated above.



- If your cube looks like this, do the sequence below making sure the blue center piece is on the right (R) face.



Congratulations!

If your Cube has a white cross that looks like this picture, you can move to **Stage 3**!



SOLVE THE WHITE CORNERS

STAGE 3:

Holding Your Cube:

With the white cross on top (U) face, you must solve the white corner pieces.



Tips:

- Corner pieces will have one white side plus 2 other colors.
- If the corner piece is already on the bottom (D) face, then rotate the bottom (D) face until the corner is directly below its intended location. Once in that position, your cube may look like any one of the 4 pictures on the right.









THEN do the sequence below 1X, 2X or 3X or UNTIL it is in the correct position



- Repeat this process for all four corners.
- If the corner piece is on the top (U) face, move it to the bottom (D) face by doing:





NOW rotate the bottom (D) face UNTIL the corner is directly below it's intended top (U) face location.

Congratulations!

If your white layer looks like the picture here, you have completed one third of the cube and you can move to **Stage 4!**



STAGE 4: SOLVE THE MIDDLE LAYER



Holding Your Cube:

With the COMPLETED WHITE LAYER on the BOTTOM, now you have to solve the middle layer, which means positioning the 'edge pieces' in the correct place.

Tips:

- Notice the vertical row of blue (this could be red, orange, green) - THIS IS CRITICAL!
- Create a vertical line by rotating the top (U) face until the front color of the edge piece on the top (U) face without yellow on it matches a side center piece. The color on the edge piece's top (U) face will determine the direction the edge piece should move.

1) If you're moving the edge piece in the same direction as indicated in the picture, then follow the sequential moves pictured below:





2) If you're moving the edge piece in the same direction as indicated in the picture, then follow the sequential moves pictured below:





Continue these steps until all the edge pieces are in the correct position.

NOTE: If one of the edge pieces is already in the middle row, but in the wrong position, then do either one of the sequential moves, and it will move to the top layer. Then you can do the appropriate sequential moves to position it in the correct location of the middle layer.

Congratulations!

If your bottom two layers look like this picture, you can move to **Stage 5**. You Are Two Thirds of the Way Done!



SOLVE THE TOP LAYER... GET THE YELLOW CROSS

STAGE 5:

Holding Your Cube:

1) Match the yellow pattern on the top (U) face of your cube to one of the yellow patterns shown on the cubes below.
2) Then follow the correct sequence.



Tip:

- Yellow edge pieces on the top (U) face do NOT need to match on the side pieces... yet!

1st Step : Make a yellow cross

State 1.



Proceed to the 2nd Step on the next page.

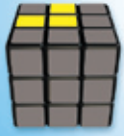
State 2.





Then match the result to State 3 or 4, hold the cube to match that State and do that sequence.

State 3.





State 4.





SOLVE THE TOP LAYER... GET ALL THE YELLOW ON TOP



2nd Step: Make all the corners yellow

NOW, look at the top (U) face and match your top (U) face to one of the states below



State 1. If No Corner Cubes are Yellow on the top (U) face, you must have Yellow Left Corner on Left Face as shown

State 2. If One Corner Cube is Yellow match your top (U) face as shown and do the sequence below.



State 3. If Any Two Corner Cubes are Yellow don't worry about their position. You MUST match the front (F) face with a Yellow Left Corner as shown.



Do this sequence 1, 2 or 3 times to achieve a complete yellow top (U) face. After each sequence, orient the cube to REMATCH the top (U) face to the appropriate state and repeat the sequence until all corners are yellow.



Congratulations!

If your cube looks like this picture you can move to **Stage 6**!



POSITION THE YELLOW CORNERS CORRECTLY

STAGE 6:

Holding Your Cube:



1) While holding cube as shown, NOW twist the top (U) face until at least 2 corners are in the right location. 2 corners MUST be in the right location as A, B or A, D or B, C as shown below. If all 4 corners are in the right place then proceed to 2nd step on next page.

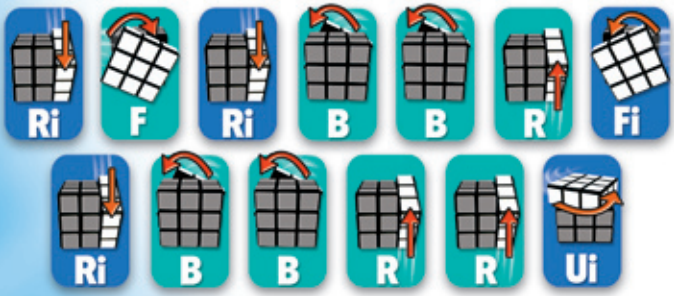


1st Step: Position yellow corners correctly

While holding your cube as shown above, look at the top (U) face. Place the 2 correct corners in the back A, B or diagonally A, D or B, C across from each other.



If Corners A and B are in the right place then to switch C and D, do the sequence below:



If you need to switch diagonal corners like B and C or D and A, then do the sequence once. Then, orient the cube so the 2 correct corners are in the back and do the sequence again.

Congratulations!

If your cube looks like this picture you can move to the **2nd Step!**



POSITION YELLOW EDGES CORRECTLY

2nd Step: Position yellow edges correctly



If 1 edge is correct and 3 edges are incorrect orient the cube so the face with the correct edge is the back (B) face. Then, determine if the edge pieces need to move clockwise or counter-clockwise and do the correct sequence below.



If all 4 edges are incorrect, then do either sequence below once, and then determine what direction the three edge pieces need to move and do the correct sequence below.

To cycle E F G Clockwise or E F G H Clockwise



To cycle E F G Counter-Clockwise or E F G H Counter-Clockwise





Congratulations!

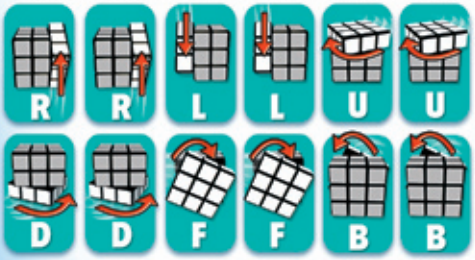


Try these additional moves

Now you CAN do the RUBIK'S CUBE®

Multicolored Cross

Holding the solved cube full front do the following sequence:





Square In The Middle

Holding the solved cube full front do the following sequence:





Fun Facts!

If you made a single turn of one of the Cube's faces every second, it would take you 1400 million years to go through all the possible configurations. (By way of comparison, the universe itself is only 14 thousand million years old.)

The most expensive Rubik's Cube was the Masterpiece Cube, produced by Diamond Cutters International in 1995. This actual size, fully-functional cube features 22.5 carats of amethyst, 34 carats of rubies, and 34 carats of emeralds, all set in 18-carat gold, and was valued at approximately 1.5 million US dollars.

Movie star Will Smith solved the Rubik's Cube in the 2006 motion picture, *Pursuit of Happyness*, but before that he could be seen solving the cube in a 1993 episode of his television sitcom *Fresh Prince of Bel Air*, when his character is interviewed by the Director of Admissions of Princeton University.

The largest Rubik's Cube was built by Daniel Urlings of Luxemburg. It could contain 64 normal sized Rubik's Cubes.

More than 300 million Rubik's Cubes have been sold worldwide. If all the cubes were placed on top of each other they would reach the top of Mount Everest, twice!

Go to

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Earn prizes
Start a club
Print certificates
Become a Cube Coach
Find fun activities and events

Thank you Tyson Mao, Jasmine Lee and Dan Harris
for your inspiration to this guide.

Prizes and products may vary from those pictured.

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