

Rubik's Cubes Beginner Instructions

An explanation of cubing notation: In these instructions and with almost all cubing guides, we will use cubing notation.

U – Rotate the top layer of the cube clockwise

D – Rotate the bottom layer of the cube clockwise

F – Rotate the front layer of the cube clockwise

B – Rotate the back layer of the cube clockwise

R – Rotate the right layer of the cube clockwise

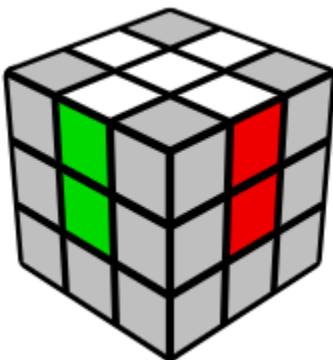
L – Rotate the left layer of the cube clockwise

U', D', F', B', R', L' are the equivalent moves counter-clockwise

Any letter followed by the number 2 indicates doing the move twice. (For example, **U2** means rotate the top layer 180 degrees).

1) Build the white cross

The first step in solving the cube is to build the white cross. This step is mostly intuitive. Find each of the white edges and get these into position so that the white sticker is on top with the white centerpiece and the side stickers match with the side centerpieces. This step takes a little work and practice to figure out. The completed white cross should look like the picture below.



For this first step, spend some time playing with the cube and get a feel for how the pieces move. Many will be able to figure out the white cross with no instruction, but you can go to the video version of the instructions if you find yourself stuck.

2) The white corners

Hold the cube with the white cross facing up. Now look for the white corner pieces. If a corner piece is already in the bottom layer, rotate the bottom layer until it is directly below where it should go like the images below.

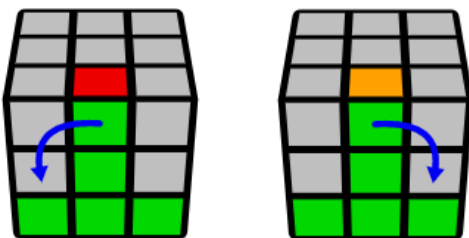


With the corner piece in this position, do this sequence multiple times until it is in the correct position: **R' D' R D**

If the corner piece is in the top layer, do the following sequence to move it down into the bottom layer: **R' D' R**

3) The Middle Layer

Now that the first layer is complete, turn the cube over so that the white layer is facing down. To build the middle layer, find the four edge pieces (green/red, green/orange, red/blue, blue/orange) and line each piece up matching it to its matching center like in the picture below.



Case 1

Case 2

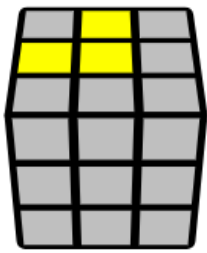
To rotate the edge piece into the right position on the middle layer using the corresponding

Case 1: U' L' U L U F U' F'

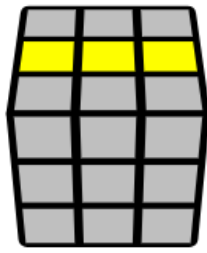
Case 2: U R U' R' U' F' U F

4) Top Layer: Make the Yellow Cross

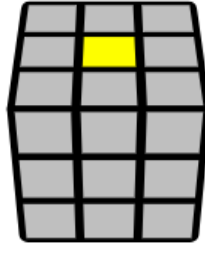
Now that the first two layers are complete, there are a few steps left to complete the top layer. Hold the cube with the yellow centerpiece facing up. Turn the top layer until it matches one of the patterns below and then execute the matching sequence below to build the yellow cross.



Case 1



Case 2



Case 3

Case 1: **F U R U' R' F'**

Case 2: **F R U R' U' F'**

Case 3: **F R U R' U' F' U² F U R U' R' F'**

5) Top Layer: Make all the Corners Yellow

The next step is to orient the top corners so that the yellow stickers are all facing up. The same sequence will be used 1-3 times until complete. Each time before executing the sequence, check to see if the top layer matches Case 1 or Case 2 below and orient the cube like below.

R U R' U R U² R'



Case 1

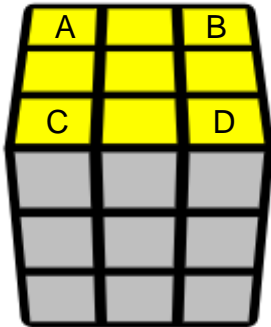


Case 2

If the top layer matches Case 1, the sequence only needs to be done once. If it matches Case 2, it will need to be done twice. If the top layer doesn't match either of these 2 cases, the sequence needs to be done 3 times.

6) Top Layer: Position the Yellow Corners Correctly

If two corners are matching, hold the cube as shown below with two matched corners in the A and B positions and execute the first sequence below to swap C and D. If no corners match, execute the 2nd sequence to swap A and D.



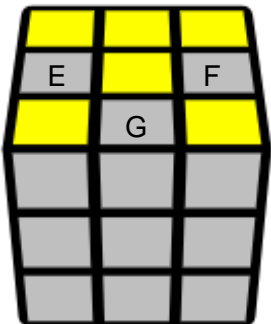
To swap C and D:

$R' F R' B2 R F' R' B2 R2$

To swap A and D:

$F R U' R' U' R U R' F' R U R' U' R' F R F'$

7) Top Layer: Position the Yellow Edges Correctly



If one of the edge pieces is in the correct position, orient the cube so this edge is in the back. Then execute one of the sequences below.

To rotate EFG Clockwise:



$F2 U L R' F2 L' R U F2$

To rotate EFG Counter-Clockwise:



$F2 U' L R' F2 L' R U' F2$

If no edges are in the correct position, then execute either sequence above. This will put one of the pieces into the correct position and then execute the appropriate sequence.

Congratulations! Your cube should now be solved.