■ SOLVING THE RUBIK'S CUBE ■ Daniel Alexandre ■ feedback@cubicpostcode.com ■ http://rubiks.cubicpostcode.com ■

Sequences are formulated with capital letters, each one corresponding to one rotation (turning one of the faces once). RIGHT = R, LEFT = L, FRONT = F, BACK = B, UP = U and DOWN = D. Those are clockwise turns (imagining you are facing that face). An anticlockwise turn (imagining you are facing that face) is indicated with an apostrophe following the letter (usually called 'prime', when it is mentioned). And two consecutive turns are indicated with the number 2 following the letter. Edges are the pieces with two colors and corners are the pieces with three colors.

First layer

1) WHITE CROSS:

With the white center up, the first step is to correctly position the four white edge pieces around the white center to create a cross. Most people are able to do it by playing a bit with it for a while.

The only few caveats that seem to require a bit more wit are:

- 1.1) Having white edges flipped (in the top-layer). To solve that, facing each flipped edge, this is the sequence to use: FU'RU
- 1.2) If a white edge is in the middle-layer the edge piece shall be moved down to the bottom-layer with one rotation turn.
- 1.3) If there are two non-flipped white edges in the top-layer not matching with the middle-layer (and rotation of the top-layer cannot fix that) an edge shall also be moved down to the bottom-layer. Then, the bottom-layer shall be rotated (to align the piece directly below the place on the white face where it needs to be placed).

2) WHITE CORNERS:

- 2.1) To fix the corners with a white sticker, a white corner in the bottom layer is found (or brought down from the front-right-up corner with: R'DR) and put directly under where it should go (matching colors with corresponding faces).
- 2.2) Move the cube around so that the piece to be moved on is put on the <u>front-right-bottom</u> corner and is put in its place following the sequence one, three or five times: R'D'RD. One time (if the white sticker is facing right), three times (if it is facing down) and five times (if it is facing forward). Making sure the same face is being faced in all of those moves.

Second layer

3) EDGES:

The yellow face is turned up and then rotated around so each edge (being faced on from front and top perspective) can be swapped down to the middle-layer (to the left or to the right) and placed correctly (with its colors matching correctly its corresponding faces).

- 3.1) Edge Swap Down to the Right: URU'R'U'F'UF
- 3.2) Edge Swap Down to the Left: U'L'ULUFU'F'

Third layer

4) YELLOW CROSS:

- 4.1) To make a yellow cross (with the yellow center facing up) if there are no yellow edges up or if there are in fact two that can make an yellow horizontal line (along the yellow center with one of the yellow edges on the left face and the other on the right face) the following sequence is used: FRUR'U'F'.
- 4.2) If there are two yellow edges up the yellow edges need to be placed so that one of the yellow edges is with yellow sticker facing up on the left and another facing up on the back). Then the following sequence is used: FURU'R'F'

5) MATCHING THE YELLOW EDGES:

- 5.1) The yellow cross edges need to be oriented correctly so that the other colors on those edges match their corresponding faces. Move around the top layer until there are two edges on the top-layer (with yellow stickers showing up) that need to swap in between each other (one on the front and one on the left face). To have the front-top and left-top edges orientation solved, the following sequence is then used: RUR'URU2R'U
- 5.2) When those two edges do not show up promptly, the top layer may use the sequence mentioned in the previous step. If such is the case notice that it is required that the sequence is used two times in a row.

6) POSITIONING OF THE YELLOW CORNERS:

- 6.1) To bring the final yellow corners to their correct places it is required to find one yellow corner that is correct (even if its orientation is wrong) and to move the cube around to put it at the front-right-top position.
- 6.2) When no yellow corner is in the right place, the sequence (on a random corner) is repeated until they get to be in the correct place and also it is repeated if the other three corners need a fix (that's despite orientation of corners, solved in last step): URU'L'UR'U'L 7) ORIENTATION OF THE YELLOW CORNERS:
- 7.1) The cube is held with the yellow corner to be oriented in the front-right-top corner and then the following sequence is used (either two consecutive times or four consecutive times) until that corner is properly oriented: R'D'RD
- 7.2) Another corner (that needs to be oriented) is moved to the front-right-top corner rotating the top-layer. Then the sequence mentioned in the previous step is repeated. Until the cube is solved it may start looking as if the whole cube got messed up but it will all go back to normal after all the yellow corners are solved. Be well aware, since it can be a tricky finish-line, when solving it for the first time.

Well done!