Rubik's cube shortcut patterns pdf

Mobile Site Play with your cube and get familiar with it. Try to solve the white face without reading this tutorial. Learn the letters which are used to mark the rotations of the faces to describe the algorithms. We divide the Rubik's Cube into 7 layers and solve each group not messing up the solved pieces. Practice the moves, memorize the algorithms until you can solve the Rubik's Cube without help. A few things you might notice: Notice that no matter what kind of face rotation you do, the center pieces always stay in the same position. They determine the color of each face. Beside the fixed center pieces the cube is composed of 8 corner pieces with 3 stickers and 12 edge pieces with two stickers. There are so many possible configurations (over 43 quintillion) that it would be impossible to solve it by randomly turning the faces until it's all done. It's hard not to break the solved pieces while fixing new ones. We need to divide the cube into layers and use algorithms in each step which don't break the finished parts. We've marked the six faces of the cube with the initials of their names. F – Front R – Right U – Up L – Left We are not going to use the D (down) and B (back) faces in this tutorial. A letter by itself means a clockwise rotation of the face while a counterclockwise turn is marked with an apostrophe. U Quarter clockwise turn on the Up face (90°). F' Front face counterclockwise turn. R2 Double rotation on the Right face. Click the buttons to see the animated rotations in action. And now we're prepared to learn the solution! Solving the first face of the Rubik's Cube is relatively easy because there are not too many solved pieces that you can mess up. Spend some time playing with the puzzle and try to do this without reading further this page. ✔Start with the white edges, then do the corners. ✔Make sure the side colors are matching the side center colors (image below). ✔Can you do this step by yourself without reading this help? We already know that the center pieces are fixed and they define the color of each face. This is why we have to solve the white edges according to the color of the center piecess as illustrated above.Solving the white edges is intuitive and quite easy because at this stage there are no solved pieces that we can break. In most cases you can just simply rotate each piece where they are supposed to be. Here are a few examples that require a few extra moves. Press the Play button to animate the rotations. Apply this short algorithm when the piece is in the right spot (FU edge), but it's oriented wrong. U' R' U F' Do this when you can't simply just turn the front edge to its spot because it would be oriented wrong. F' U' R U The algorithm to solve the white edge when it's oriented wrong in the middle layer. U' R U This is another easy stage where you shouldn't memorize any algorithm just follow your instincts. If you have difficulties solving the white corners, here's an easy trick you can always apply, you just have to memorize a short algorithm and repeat it until the piece is solved: R' D' R D Bring the corner below the spot where it belongs (Front-Right-Down position highlighted with grey) and repeat the algorithm above until the white corner pops into its place oriented correctly. This algorithm sends the piece back and forth between the spots marked with dark, always changing the orientation. Play the animation for an example where the sequence is repeated five times. Watch the affected white corner going to the top then back to the bottom in each step, changing its orientation. The sixth would bring the cube back to its original position: This trick always works but requires too many unnecessary steps. Here are the shortcuts: At the end of this step your cube should have a solid white face. U' L' U L U F U' F' U R U' R' U' F' U F When there's no edge piece to insert into the middle layer you will have to execute the algorithm twice to pop the piece out in the first step. For example, when the edge is on its place but turned incorrectly: At the end of this step your cube should have the middle layer solved and an intact white face at the bottom. At this point you can have one of these patterns on the top of your cube. Use the algorithm below to jump to the next state until you reach the cross. »»» F R U R' U' F' Dot – we have to apply the formula three times when all top edges are oriented wrong and there are no yellow stickers around the yellow center. Make sure you reorient the cube in your hands after the first stage because the "L"-shape will be upside down. "L"-shape – You're two algorithms away from the target. Make sure the yellow edges are located on the left and back positions as illustrated.(There's a shortcut which jumps from the "L"-shape to the cross in one step, reducing the solution time: F U R U' R' F'). Line – Perform the algorithm once, holding the line horizontally and you're done. Cross – The cross is complete, you can go to the next level! R' D' R D Start by holding the cube in your hand having a misaligned yellow corner in the highlighted Front-Right-Up spot (see image). Repeat the R' D' R D algorithm until this piece comes to the correct position with the yellow sticker upwards. Turning only the Up face, move another wrong yellow corner to the highlighted spot and repeat the R' D' R D algorithm until that yellow piece is oriented correctly. Move other misaligned yellow corners to the marked spot one by one and do the formula until all corners are solved. The puzzle might seem to be scrambled between the moves but don't worry because everything will come together when all yellow corners are oriented properly. Watch the video or the animation below that demonstrates examples of how to use this move. More examples on how to use the R' D' R D algorithm. Front, Right, Up, Left L – Left clockwise F' – Front inverted R2 – Double right (180°) 1,2. White Face Cross, then corners. Right: U R U' R' U' F' U F Left: U' L' U L U F U' F' 4. Top Cross F R U R' U' F' 5. Swap Top Edges R U R' U R U2 R' U U R U' L' U R' U' L 7. Orient Top Corners Move the misaligned yellow corners one by one to the highlighted position rotating the top layer and do R' D' R D until the current piece is solved. Source of the document: CubeSolve.com Mobile site Copyright ©CubeSolveTerms and Conditions, Privacy PolicyThis website is not affiliated with the Rubik's Cube™We use cookies on this website to collect anonymous analytics. Adjust your browser settings if you'd rather disable them. Contact: Solve the Rubik’s cube by following these 5 easy steps: STEP 1 - COMPLETE THE FIRST LAYER CROSS STEP 2 - COMPLETE THE FIRST LAYER CORNERS STEP 3 - COMPLETE SECOND LAYER STEP 4 - COMPLETE THE THIRD LAYER CROSSSTEP 5 - COMPLETE THE THIRD LAYER CORNERS DOWNLOAD FREE PDF - Rubik's cube Beginners Guide STEP 1 - COMPLETE THE FIRST LAYER CROSS Keep WHITE centre on top Put the GREEN centre piece in front (facing you) Find the GREEN/ WHITE edge piece (it only has 2 colours) and turn it to one of the positions shown below (keeping white on top and green in front) Choose the options below that matches your situation and follow the arrow steps to place the GREEN/ WHITE edge piece in place. Keeping white on top, turn the cube so that a different colour face (center) is toward you. Follow the above instructions again. Repeat with the other two faces until the white cross is complete. This step is quite intuitive; you can do it for sure but it does take a little practice. Just move the white edges to their places not messing up the ones already fixed. STEP 2 - COMPLETE THE FIRST LAYER CORNERS Keep WHITE on top Put the GREEN centre piece in front (facing you) Find the GREEN/WHITE/RED corner (it has 3 colours) and place it in one of the positions below (without disturbing the white cross) Choose from the steps below to place the GREEN/WHITE/RED corner piece in place without disturbing the white cross. Possible Problem:The corner you are looking for is in the top layer, but in the wrong position or turned the wrong way around. Turn the cube so that the corner is in the front right top corner then move the corner to the bottom layer by following the following steps. Solution: Perform these steps , then choose again from steps above to put the corner in place Keeping white on top, turn the cube so that a different colour face is toward you. Follow the above instructions again. Repeat with the other two faces until the white cross is complete. STEP 3 - COMPLETE SECOND LAYER Keep WHITE on top Find the GREEN/RED edge piece If it is in the bottom layer, then turn the bottom layer to match the edge with the centre colour (see fig below). If the edge is not in the bottom layer, then go to Step C Choose from the steps below to place the edge piece in place. A/B Possible Problem:The edge piece you want to move is in the second layer, but in the wrong position or the wrong way around. Solution: Turn the cube so that the edge is in the front layer then do either solution above to move the piece into the bottom row. The go back to step 4 above. C Continue with steps A/B with different centers facing you until the second layer is complete STEP 4 - COMPLETE THE THIRD LAYER CROSS Turn the cube over (white is now on the bottom and yellow on top) You should find that there is 0, 2 or 4 pieces (of the cross) facing upward. Ignore the corners for now. The idea is firstly to get the yellow cross and secondly to turn swap pieces to the correct position in the cross. Perform the algorithm below to get to the yellow cross. Make sure your cube is orientated is shown in the image. Repeat this algorithm till you get the yellow cross You will now have 4 or 2 edge pieces in the correct place. Matching with the center colors. Ensure the correct edge pieces are at the back and right face. Use the algorithm below to put the edge pieces in the correct position. Possible Problem:Two pieces that are in the correct position are opposite each other. Solution: Perform the steps above once and then turn the cube like the one shown above and perform the steps again. STEP 5 - COMPLETE THE THIRD LAYER CORNERS (1) First we will put the corners in the correct position (A).You will now have either 0, 1 or ALL the corners pieces will be in their correct positions, either the right way up or reversed.If one corner piece is in the correct corner turn the cube to that this correct corner is in the front top right position. The piece is in the correct position, BUT may not be turned the correct way around. (A) Repeat the sequence until all the corners are in the correct position. Possible Problem: None of the corners is in the correct position. Solution: Perform the steps in (A) once with ANY side facing you (YELLOW at the top). Now one corner will be in the correct position. Proceed with (A) above. Having trouble with this step? Watch the video below The next steps will turn the corners (one by one) the correct way and ultimately solve the cube. NOTE: THIS ROUTINE MAY APPEAR TO UPSET THE REST OF THE CUBE. DO NOT DESPAIR AND KEEP THE SAME SIDE FACING YOU IT WILL ONLY BE SOLVED ONCE THE LAST CORNER IS ORIENTATED. Repeat the moves until the YELLOW side of the corner piece is on top. You may have to do it 2-3 times. KEEP THE SAME SIDE FACING YOU. Rotate the TOP LAYER until the next corner piece to be rotated is in the top right position. Repeat the above sequence until the YELLOW side of the corner that you are rotating is on top. Continue the process until the cube is complete. Having trouble with this step? Watch the video below At speedcube we know you love your speed cubes, and that you want them delivered fast - that's why 99.9% of our customers rate us a 5 star shopping experience. Please do try our fantastic service, or come visit us at our store - we are here to help. Also checkout: THE BEST SPEED CUBES OF 2021 FREE PDF - Rubik's cube Beginners Guide

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