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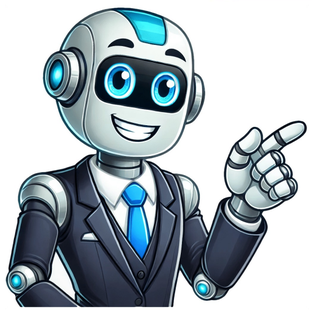

If you're serious about solving the Rubik’s Cube fast, you’ve probably heard of the CFOP method. It’s the go-to method for speedcubers worldwide, used by world record holders and casual speedcubers as well. But what exactly is CFOP, and how do you go from a beginner to an advanced solver cutting off every possible second? Let’s break it down. What is CFOP? CFOP stands for Cross, F2L (First Two Layers), OLL (Orientation of the Last Layer), and PLL (Permutation of the Last Layer). CFOP is widely considered the fastest and most optimized solving method, and while it may seem scary at first, breaking it down step by step makes it manageable, even for beginners. Step 1: The Cross This is where it all begins. You solve a cross on one face of the cube, usually white, by aligning the edge pieces with the correct center pieces. Tips for improving: Try solving the cross in 8 moves or fewer. Look ahead: don’t just solve one piece at a time. Learn to solve the cross without rotating the cube too much. At first, this step may take a few seconds, but with practice, it can be done in under 2 seconds! Step 2: F2L (First Two Layers) Instead of solving the corners and edges separately like in the beginner’s method, F2L pairs them up and inserts them at the same time. This is where CFOP really starts to speed up compared to layer-by-layer methods. How to get better: Start with intuitive F2L: figure out how to move pairs without memorizing algorithms. Once comfortable, learn algorithmic F2L for tricky cases. Reduce cube rotations: your goal is to minimize unnecessary movements. Mastering F2L is a game changer and will significantly improve your solve times. Step 3: OLL (Orientation of the Last Layer) Now that the first two layers are done, it’s time to orient the last layer so that all the top stickers are the same color. Two approaches: 2-Look OLL: Learn just 3-4 algorithms to make a cross, then another set of 7 to finish orienting the last layer. Full OLL: 57 algorithms that solve OLL in one step. It takes time to learn, but it’s much faster in the long run. Most cubers start with 2-Look OLL and gradually learn full OLL as they get faster. Step 4: PLL (Permutation of the Last Layer) OLL got all the last-layer pieces facing the right way, but they’re still scrambled. PLL solves the entire cube by permuting these pieces into their correct spots. Learning PLL efficiently: 2-Look PLL: Learn 2 algorithms for corner permutation and 4 for edge permutation. This is a good stepping stone. Full PLL: 21 algorithms that solve the last layer in one step. A must for serious speedcubers. Full PLL combined with full OLL lets you finish the last layer in just two algorithms, cutting down your solve time drastically. Taking CFOP to the Next Level Once you’ve got CFOP down, here’s how to make it even faster: 1. Lookahead Speedcubing isn’t just about turning fast; it’s about planning ahead. Train yourself to spot F2L pairs while finishing the cross, and recognize OLL and PLL patterns before finishing F2L. 2. Finger Tricks Efficient turning is key. Learn how to execute algorithms quickly by trying out multiple different algorithms for a certain case and choosing one that fits your turning style. Is CFOP Right for You? CFOP is the dominant method in speedcubing, but it’s not the only one. Some cubers prefer Roux or ZZ for their unique solving styles. However, if you’re looking for the method with the most resources, tutorials, and world records behind it, CFOP is the way to go. Now go grab your cube and start practicing! Happy cubing! The most popular Speedsolving method is the CFOP (Cross, First 2 layers, Orientation of last layer, Permutation of last layer) a.k.a Fridrich Method. Unlike The beginner's method, the Speedsolving method focuses mainly about solving the Rubik's cube in the fastest and most efficient way, rather than the easiest way. The CFOP method average number of moves for a complete solution is ~56 moves. While using the beginner's method, the average number of moves is roughly around 110 moves. (100% more moves!) All top ranking speedcubers today use the CFOP method (sometimes with additional variations to it). Mastering the speedsolving method requires learning some new algorithms and practice, and takes a bit longer than the beginner's method. However since fully mastered it will enable you to speedsolve the Rubik's cube much faster, and basically from there only practice is what stands between you and sub 30/20/10 solving time, and the world record! Note: It is advised to start learning the speedsolving method only after successfully solving the Rubik's cube and mastering the beginner's method. Speedsolving is all about time, so it best to be able to solve the Rubik's cube within 1:30-2:00 minutes before start learning it. Before that it might just be too soon. Read my beginners solving tips on how to get faster, as they review the basic principle that relevant for every speed-cuber. The Fridrich method consists of 4 steps only: Cross: Solving the first layer 4 edge pieces completely. (what looks like a cross shape) F2L: Solving the first two layers completely (not hard as it sound:)) OLL (Orientation of Last Layer): Correctly orienting the last layer corner & edge pieces. PLL (Permutation if Last Layer): Correctly permuting the last layer corner & edge pieces. Tip: I recommend getting a quality and well turning Rubik's cube before start learning the speedsolving solution method, as it makes the learning of new algorithms easier, and much more fun! Last and not least, quickly read again my Rubik's cube solution intro part to make sure you are on the same page for the mechanical stuff of the cube like what edge, corner and center pieces are, and move notations, et cetera. It is important to know the full move notations for speedsolving (middle layer turns, double layer turns & cube rotations) check my guide here- Move Notations Page. Solving the cross is the first step of the CFOP, it consists of solving the 4 edge pieces of the first layer you choose to start with. After solving them correctly they will form a shape of "cross". This step is exactly the same as the first step of the beginner's method, so you should already know how to do it, however with one difference: Solving the cross on the bottom of the cube instead on top. Thus saves the need of flipping the cube upside down during the solving which saves valuable time, and allows much faster shifting to the next step. Solving the cross on the bottom will also allow looking ahead for the next step, which is a key principle in speedcubing. It is ok to keep solving the cross on top, however I highly recommended starting to practice solving it on the bottom already. Solving the cross on the bottom won't be natural at the beginning, mostly due to the fact that you don't see the being solved pieces. Another con of solving the cross on the bottom is that it's harder to realize you'd misplaced one of the pieces, which will cost valuable time and setback in resolving the cube. Just keep practicing solving the cross on the bottom. It will take longer than solving it on top in the beginning, however after some practicing it will become much easier and worthwhile. Don't afraid to look at the bottom of the cube during your solving at the beginning, after some practice you'll be able to avoid this habit. Choosing a color: Most of the speedcubers chooses white as the color to start with and solve the cross on. Choosing a color and sticking to it is important, as you will get to know this color-scheme by heart, and get faster recognition for the pieces to solve in next steps (mostly in the F2L). Solving the cross is based on intuitive moves only, no algorithms required. These examples cover all possible edge positions: R2 u' R u R u R' u' The second step is about completely solving the first 2 layers (a.k.a F2L). This step is parallel to steps 2-3 in the beginner's method. F2L is a very important step of the speedsolving, where most of the time improvement occurs, at all levels, thanks to the huge reward for looking ahead and good cubing techniques (e.g. no cube rotations), which can lead to lightning fast solving even not for the fastest hands. 8 pieces needed to be solved in this step: the 4 of the first layer corner pieces, and the 4 middle-layer edge pieces. The way to solve this step is by pairing a matching corner & edge piece, and solving them together to their slot, making this step about solving 4 pair-pieces. Slot- The place on the cube where the paired corner & edge piece should be solved to. There are 4 slots to solve to complete this step. Block- a paired up corner & edge pieces I call a Block. Solving the F2L should be done intuitively, with no use of algorithms. It can take some time to fully understand and master all the possible variations for this step, however it is very rewarding! There are 41 possible variations of different corner-edge positions (not including the already solved edge-corner variation), however most of them are very similar, as they are mirrors of each other. Most of the possible 41 variations solving will end in one of the 2 following options to insert a corner & edge block to its slot: U' F' U F F' U' F In the first variation you can see that the edge and corner pieces are already paired up to a block, and only have to be inserted to the slot. In the second variation, the corner and edge pieces are not matched to a block yet, however during the insertion to the slot they are being paired. Even that they are not already paired – the number of moves required to solve them is similar to a paired block. That’s way this position will be considered just liked as a paired block. You could easily recognize this position by 2 signals: 1) the color you chose to start with (color of the cross & first layer) on the corner piece is facing to one of the sides (i.e. and not facing up, on the U face). 2) The colors on the edge piece are in inverse position to the similar colors on the corner (as you can see on the animation above: the blue sticker on the edge piece is on the R face, while the blue sticker on the corner piece in on the U face (instead of being in one of the side faces like L / F / B/ R). Same goes for the red sticker- one is up while the other one is on the side). After some practice you'll recognize that without even thinking about it. The way to approach and solve each of the possible 41 variations is divided into 2 stages: Bringing the corner & edge pieces to one of the 2 solving positions shown above (blocked pieces, or being blocked while inserting) Solving the variation by inserting the edge-corner block to its slot. F2L algorithms page (covering all 41 possible variations) Basically, all you have to learn in this step is to intuitively do the first stage, meaning bringing the corner & edge pieces to one of the solving positions and working form there. Since most of the variations are very similar (mirrors), doing that is very similar in all variations. The best way to understand that is by slowly following all the solving algs for the different variations until you get it. I explain everything in the examples below: Since the colors of the edge & corner pieces on top does not match (blue & red in this case), it seems that the best way to solve this variation is by getting the pieces to fit the second solving position. For that, all we'll have to do is to "move" the edge piece one place left, to the L-U faces. Trigger the animation and see how it is done. The way to do it is by moving the corner to the right (to the R-B-U faces) by doing U', and then making an R turn, that way we will be able to make a U' turn and move the edge piece to the desired location, without moving the corner along with it, and without affecting any of the already solved cross pieces and other 3 slots. Then we'll return the corner back to the Upper face by doing R'. That's it, the edge and corner are ready to be inserted to the slot using the second solving position (execute U F' U' F to finish inserting) Note that also the following variations use the exact same technique: #10, #13, #15, #16 (#10 is exactly the same situation- just in a mirror view; #13: the only difference is that we have to "move" the edge piece at the beginning 2 places to the left, to reach the L-U faces- Only difference is U2 instead of U') In this variation the edge and corner colors match (Blue color is on top in both pieces, Red is on the side in both pieces), therefore the right way here will be solving this variation by pairing them to a block and using the first solving position (only one exception to this rule- cases #7 & #8 where the edge and corners colors fit – yet it's easier to bring them to the 2nd solving position). The way to do it is by "moving" the edge piece one place right, to the R-U faces. For that we'll use the exact same technique as the previous position: We'll move the corner to the R-B-U faces by doing U', and then make an R turn (taking the corner piece down, so it won't be affected by the U turn of the next move), then we'll do the U turn to reposition the edge piece where we want it, and make an R' turn to get the corner back up. Now the corner and edge pieces are completely paired and forms a block, all that left is to insert them into the slot by executing the first solving variation (U2 R U' R'). Note that also the following variations use the exact same technique: #4, #5, and #6. This variation can be seen in first inspection a little bit harder for intuitive solution, however it is much easier than it looks! Here is how it goes: We'll pair up the edge and corner piece to a block, and solve it by the first solving position. We'll have to flip the corner so the first-layer color (white in our case) will face to one of the sides, instead on facing top; then we'll pair up the corner with the edge piece to form a block. Lucky us, it's done simultaneously: We'll turn the U face until the edge piece side color will fit the center piece below it (In our case this is red, and requires a single U turn), then we'll make an R turn so the edge piece goes temporary to the middle layer. Now, we'll make a U2' turn to place the corner on top of the edge piece (Pay attention: we have just paired them and created the block), and return the edge-corner block to the Upper face by doing R'. Interesting thing is that while returning the edge piece to the top we used it to both pair the piece and flip the corner. Now the block is ready to be solved to the slot by executing the first solving variation (U R U' R') Note that also the following variations use the exact same technique: #20, #21 and #22. In variations where the corner or edge piece (or both of them) is inside the slot, usually the approach is to get the piece out of the slot back to the U face, adjust the corner-edge pieces to one of the solving positions, and insert them into the slot correctly. Usually, we will try to eject the edge/corner piece to the U face in a way that the other piece of the pair will already be correctly positioned to fit one of the solving position. Now, take your time and learn how all the different variations of the F2L are being solved. Focus on understanding how it is done rather than learning the "algorithms". The bolded algorithms are the one that I use in my solving (the one that I find the easiest/most comfortable for me to execute). In this step I focused on learning the basics of F2L, however the F2L is the step with the biggest potential for time reduce and improvement, with lots of advanced techniques which I show in the Advance F2L page: Minimizing cube rotations (re-gripping) Maximizing looking ahead. Taking advantage of empty slots Multi-slotting Special cases & tricks After you feel comfortable intuitively solving the F2L, read my advance F2L techniques page. The third step of the solution is Orientation of Last Layer (a.k.a OLL). Orienting the last layer includes 8 pieces: 4 Corners & 4 edges, all to be solved in 1 algorithm (or 2 – for 2 look OLL). The permutation of the edge & corner pieces in this step does not matter and they will be addressed in the next step. There are 57 different possible variations (or combinations) of the last layer pieces orientations (Not including the fully solved variation). Therefore there are 57 different algorithms to learn to fully master the 1 look OLL. However, since it is a lot to learn, the best way to start is with the 2 Look OLL: 2 look OLL means solving the OLL within 2 algorithms (2 looks). The 2 look OLL requires knowing only 10 algorithms, which some of them you should already know from the Rubik's cube beginner's method. Here is how it goes: Orienting the LL edge pieces: There are only 3 algorithms necessary here: [F R U R' U' F'] [f R U R' U' f'] When 2 opposite edges are oriented: Use the T orientation algorithm. All edges will become oriented. When 2 adjacent edges are oriented: Use the P orientation algorithm. All edges will become oriented. When no edges are oriented: This algorithm is the combination of the first two algorithms executed one after the second (T+P). All edges will become oriented. Orienting the LL corner pieces: There are only 7 possible variations of corner orientations when all the edges are already oriented. All 7 cases and their algorithms are in the first table of the OLL Algorithms page. 1 look OLL or Full OLL means solving all the possible variations and orienting the last layer within 1 algorithm. The OLL step is the "least rewarding" step in a matter of learning algorithms, meaning that the transition from 2 look OLL to 1 look OLL requires additional 47 algorithms- yet rewards in "only" around 2-4 seconds. Full OLL becomes more relevant in sub 20 second solving and under. Keep in mind that the PLL algorithms (4th step) are more important and it is better to fully learn them (21 total) before going for the full OLL. Fast OLL solving is a matter of knowing the algorithms, and fast fingertricks. Though it is important to work on your fast execution of these algs, most of the progress and time-reducing will happen in the F2L (Such practice will improve your turning speed which will make also your OLL faster). The algorithms are divided into sub-groups based on the shape they form on the U face (e.g. P shapes, T shapes and lightning bolts shapes), which makes it much easier to quickly recognize the variation and execute the right algorithm. There is absolutely no need to try and learn them all in once, just quickly review them and overview the different shapes and how to identify them. It is advised to learn a new algorithm once a day or so (depends how much time you spend solving the Rubik's cube a day:)). Make sure that you start with the 10 algorithms required for the 2 look OLL, only then progress to the rest. After learning the 2 look OLL algs, I would recommend just trying different algs and start with those easier for you to execute. You can continue and start learning the last step (PLL) while still learning the 2 Look OLL algorithms (you still can solve the OLL with up to 5 looks using the beginner's method you already know) The fourth and last step is Permutation of Last Layer (a.k.a PLL). There are 21 possible unsolved variations for permuting the last layer pieces (total of 4 edge & 4 corner pieces), which require learning 21 different algorithms. The good news is that you already know 2 of them (which used in the beginners methods step 7). Compared to the OLL step, there are much less algorithms to learn. However just like the OLL, you could use 2 look PLL, and solve the Rubik's cube within 2 algorithms. Doing that will require knowing only 6 algorithms out of the 21 (which the 2 algs you already know are part of them). I cannot stress enough how important it is to continue and learn the full PLL, and use the 2 look PLL only as a temporary solution. Recognizing time can be longer than the execution, and it's done twice- which leads to x2 slower PLL solving time rather than the full PLL. Besides, most of the algorithms are relatively very easy and "finger-friendly". Doing the 2 look PLL done in 2 stages: Permuting the 4 corner pieces: You need to know 2 algorithms for this stage: the Aa-perm & the E-perm (you can use any of the Y / N / V permutations here instead of the E-perm, however I found the E-perm easiest to do) l' U R' D2 R U' R' D2 R2 x' [R U' R' D] [R U R' D'] [R U R' D] [R U' R' D'] How it is done: Look for 2 adjacent correctly permuted corners, meaning 2 corners that are permuted correctly in relation to each other. The best way to recognize it is by looking for two similar stickers on corner pieces in a single side face (F / R / B / L faces) - what called headlights. In the Aa-perm image above you can see that the 2 corners at the Back face are right corners (see the blue headlights?). If on a given side face the 2 corner stickers show different colors – then the corners are not correctly permuted in relation to each other. Now: - If you found 2 adjacent right corners: rotate the cube (or better- make a U turn) so both corners will be on the B face, at the back of the cube. Then execute the Aa-perm algorithm. Once executed, all 4 corners will be correctly permuted. - If you found no adjacent right corners: Execute the E-perm. The angle of executing does not matter here. Once executed, all 4 corners will be correctly permuted. Permuting the 4 edge pieces: Once all the corner pieces are correctly permuted, there are only 4 possible variations for permuting the last layer edge pieces (and by that solving the Rubik's cube completely): Ua-perm, Ub-perm, Z-perm & H-perm: Ua Perm[R U' R] U R U R U' R' U' R2 Ub PermR2 U R U R' U' R' U' R' U R' Z PermM2 U M2 U M' U2 M2 U2 M' U2 H PermM2 U M2 U2 M2 U M2 Just follow the suitable algorithm for the variation you have. By executing this algorithm you had completely solved the Rubik's cube. Recognizing the suitable variation and applying the right algorithm is a bit trickier than in the OLL step, since there are no clues on the U face (it's already oriented). Figuring the right algorithm to apply is based on the colors/stickers to the side of the last layer, mainly by recognizing color bars, headlights and blocks. However, once you get it right, you'll be able to figure out the right algorithm in an inch of a second. Congratulations! You know now how to speedsolve the Rubik's cube! Using the CFOP method you'll be able after some practice to make lightning fast solving! The next step for you will be by order: to intuitively master the F2L, know the Full PLL and 2 look OLL, and finally go for the full OLL too. Furthermore, I'll advice you to read my advanced pages for all the steps with more advanced techniques and speedcubing tips for faster solving. Remember that the key factors for fast solving are: looking ahead, good algorithms, efficient solving and fast turning. Add Rubiksplace.com to Favorites! That’s it! I hope you enjoyed my speedsolving solution. You are invited to leave a comment in our facebook page telling about your experience with speedsolving the Rubik's cube. Beginners simplified 3-Look OLL and PLL CFOP algorithms. Used to solve 3x3 cubes using fewer algorithms whilst still following the CFOP method.When moving from the beginner method to CFOP, I found it overwhelming to learn all the new 2-Look OLL and PLL algorithms.I discovered that it is possible to reduce the number of 2-Look OLL and PLL algorithms you need to use in order to solve the cube whilst still using the CFOP method. This basically turns it into a 3-Look OLL and PLL method.If you don’t already have a semi-decent speed cube, something like the MoYu RS3M 20201 as pictured above, will make cubing so much more enjoyable.Simplified 3-Look OLLFrom the table below, you can see that it is possible to use the “Sune” algorithm in a number of additional cases. These cases require two or three simple algorithms instead of one arguably more complex algorithm to solve this stage of the cube.Whilst this may take longer, I found this much easier to learn fewer algorithms. Rather than 10 algorithms, we only need 5. “Sune”, “Antisune” and “H” are basically the same algorithm.Note that patterns “Pi” and “U” are rotated compared to those in JPerm’s table.The original table can be found on JPerm’s site: Algorithms: 2-Look OLL.NameCaseAlgorithmGroupI-ShapeF R U R’ U’ F'1: EdgesL-Shapef R U R’ U’ f'1: EdgesDot-Shape“I-Shape” “L-Shape”1: EdgesAntisuneR U2 R’ U’ R U’ R'2: CornersSuneR U R’ U R U2 R'2: CornersL“Sune” U2 “Antisune”2: CornersT“Sune” U’ “Antisune”2: CornersPi“Sune” U “Sune”2: CornersU“Sune” U “Antisune”2: CornersH(This is basically Sune, but with extra moves in the middle)R U R’ U R U’ R’ U R U2 R'2: CornersSimplified 3-Look PLLSimilar to the simplified 3-Look OLL, we can reduce the number of algorithms necessary to learn for 3-Look PLL.Here we need to learn 4 algorithms instead of 6.The original table can be found on JPerm’s site: Algorithms: 2-Look PLL.NameCaseAlgorithmGroupPLL (H)M2 U M2 U2 M2 U M22: EdgesPLL (Z)“Repeat Headlights” turning cube as necessary until complete2: EdgesPLL (Ua)R U’ R U R U R U’ R’ U’ R22: EdgesPLL (Ub)(Perform “Ua” x2 or mirror “Ua” with following algo)L U L U’ L U’ L’ U L’ U L22: EdgesHeadlights(Complex but need to learn)R U R’ U’ R’ F R2 U’ R’ U’ R U R’ F'1: CornersDiagonal(“Repeat Headlights” turning cube as necessary until complete)1: Corners Breakdown of the CFOP method The CFOP method, also known as the Fridrich method, was published by Czech speedcuber Jessica Fridrich in the 1990s. Since then, the method has become one of the most popular methods in speedcubing and has established itself as one of the main techniques in speedcubing. It is still very popular today. If you want to refine your technique and take part in competitions, the CFOP method is ideal. It offers a structured and efficient strategy that will lead you to fast solve times. In this guide, we will show you what the CFOP method involves and how you can learn it quickly. First things first: In the opening step, you need to form the white cross on one side of the cube. Then arrange the edges so that they match the colour of the centre. The '3-move insert' is a technique that is particularly helpful at the beginning. With this technique, you can quickly place individual edge pieces (cube pieces with two colours) in the correct position in the white cross. The name '3-Move Insert' comes from the fact that in many cases only three turns are required to place the edge stone in the correct position. One possible approach looks like this: FF R'R' F'F' R'R' FF RR Later, you can combine a single move ('1-Mover') with a technique called '3-Move Insert'. This allows you to insert two edges into the white cross at the same time and will speed up the solving process. It could look like this: UU FF R'R' Moving the white cross helps you avoid unnecessary moves. In the example below, you can directly insert the blue-white edge with just 3 moves by shifting the cross. This way, you don't have to move the edge upwards first. It saves you extra steps and time. DD R'R' D'D' RR UU R'R' F'F' U'U' FF UU RR U'U' R'R' U'U' F'F' UU FF (U'U' RR U'U') (R'R' UU RR) UU R'R' (UU F'F' UU) (FF U'U' F'F') U'U' FF (U'U' RR UU) (R'R' UU RR) UU R'R' (UU F'F' U'U') (FF U'U' F'F') U'U' FF dd (R'R' U2U2 RR) d'd' (RR UU R'R') U'U' (RR U2U2 R'R') dd (R'R' U'U' RR) (RR U'U' R'R' UU) dd (R'R' U'U' RR) (F'F' UU FF U'U') d'd' (FF UU F'F') (UU F'F' U2U2 FF) (UU F'F' U2U2 FF) (U'U' RR U2U2 R'R') (U'U' RR U2U2 R'R') (UU F'F' U'U' FF) (UU F'F' U2U2 FF) (U'U' RR UU R'R') (U'U' RR U2U2 R'R') (RR U2U2 R'R' U'U') (RR UU R'R') (F'F' U2U2 FF UU) (F'F' U'U' FF) (UU RR U2U2 R'R') (UU RR U'U' R'R') (U'U' F'F' U2U2 FF) (U'U' F'F' UU FF) U2U2 (RR UU R'R' UU) (RR U'U' R'R') U2U2 (F'F' U'U' FF U'U') (F'F' UU FF) (RR UU R'R' U'U') U'U' (RR UU R'R' U'U') (RR UU R'R') y'y' (R'R' U'U' RR UU) UU (R'R' U'U' RR UU) (R'R' U'U' RR) (UU F'F' UU FF) (UU F'F' U2U2 FF) (U'U' RR U'U' R'R') (U'U' RR U2U2 R'R') (UU F'F' U'U' FF) (d'd' FF UU F'F') (U'U' RR UU R'R') (dd R'R' U'U' RR) (RR U'U' R'R') (dd R'R' UU RR) (RR UU R'R' U'U') (RR UU R'R' U'U') (RR UU R'R') (UU RR U'U' R'R') (U'U' F'F' UU FF) (U'U' F'F' UU FF) (UU RR U'U' R'R') (F'F' UU FF) (U'U' F'F' UU FF) (RR U'U' R'R') (UU RR U'U' R'R') (RR UU R'R') (U'U' RR UU R'R') (F'F' U'U' FF) (UU F'F' U'U' FF) (RR U'U' R'R' UU) RR U2U2 R'R' (UU RR U'U' R'R') (RR U'U' R'R' U'U') (RR UU R'R' U'U') (RR U2U2 R'R') (RR UU R'R' U'U') (RR U'U' R'R') UU dd (R'R' U'U' RR) (RR U'U' R'R') dd (R'R' U'U' RR U'U') (R'R' U'U' RR) (RR U'U' R'R' dd R'R' U2U2 RR) (UU R'R' U2U2 RR) (R'R' U2U2 RR) UU (R'R' UU RR) (RR U2U2 R'R') U'U' (RR U'U' R'R') F'F' (rr UU R'R' U'U') (r'r' FF RR) (rr UU R'R' U'U') (r'r' FF RR F'F') RR U2U2 (R2'R2' U'U' R2R2 U'U') (R2'R2' U2U2 RR) (RR UU R'R') UU (RR U'U' R'R') UU (RR U2U2 R'R') R2R2 DD (R'R' U2U2 RR) D'D' (R'R' U2U2 R'R') (RR U2U2 R'R') (R'R' FF RR F'F') U2U2 (R'R' FF RR F'F') FF (RR UU R'R' U'U') F'F' ff (RR UU R'R' U'U') f'f' ff (RR UU R'R' U'U') f'f' UU FF (RR UU R'R' U'U') F'F' ff (RR UU R'R' U'U') f'f' U'U' FF (RR UU R'R' U'U') F'F' MM UU (RR UU R'R' U'U') M'M' (R'R' FF RR F'F') FF (RR UU R'R' UU) y'y' R'R' U2U2 (R'R' FF RR F'F') (RR UU R'R' UU) (R'R' FF RR F'F') U2U2 (R'R' FF RR F'F') MM UU (RR UU R'R' U'U') M2M2 (UU RR U'U' r'r') (RR UU R'R' U'U') M'M' (UU RR U'U' r'r') M'M' U'U' MM U2'U2' M'M' UU MM RR U2U2 R2R2 (U'U' RR U'U' R'R') U2U2 (FF RR F'F') (RR UU R'R' UU) RR d'd' RR U'U' R'R' F'F' ff (RR UU R'R' U'U') (RR UU R'R' U'U') f'f' FF (RR UU R'R' U'U') RR F'F' (rr UU R'R' U'U') r'r' FF (RR UU R'R' U'U') F'F' (RR UU R'R' U'U') (R'R' FF RR F'F') R'R' FF (RR UU R'R' U'U') F'F' UU RR LL F'F' (L'L' U'U' LL UU) FF U'U' L'L' (R'R' FF RR) UU (R'R' F'F' RR) y'y' (RR U'U' R'R') FF (UU RR U'U' R2R2) F'F' (RR UU RR U'U' R'R') rr UU r'r' (RR UU R'R' U'U') rr U'U' r'r' l'l' U'U' ll (L'L' U'U' LL UU) l'l' UU ll R'R' U'U' (R'R' FF RR F'F') UU RR (RR UU R'R' U'U') xx D'D' R'R' UU RR U'U' DD x'x' (RR UU R'R' UU) (RR U'U' R'R' U'U') (R'R' FF RR F'F') (L'L' U'U' LL U'U') (L'L' UU LL UU) (LL F'F' L'L' FF) ff (RR UU R'R' U'U') f'f' f'f' (L'L' U'U' LL UU) ff R'R' U'U' FF UU RR U'U' R'R' F'F' RR FF UU RR U'U' F'F' rr UU R'R' U'U' r'r' (RR U2U2 R'R') (R'R' FF RR F'F') (RR U2U2 R'R') FF R'R' F'F' RR UU RR U'U' R'R' r'r' U2U2 (RR UU R'R' UU) rr rr U2U2 R'R' U'U' RR U'U' r'r' FF (RR UU R'R' U'U') (RR UU R'R' U'U') F'F' F'F' (L'L' U'U' LL UU) (L'L' U'U' LL UU) FF R'R' FF R2R2 B'B' R2'R2' F'F' R2R2 BB R'R' (R'R' FF R'R' F'F') R2R2 U2U2 yy (R'R' FF RR F'F') (l'l' U'U' LL U'U') (L'L' UU LL U'U') L'L' U2U2 ll (rr UU R'R' UU) (RR U'U' R'R' UU) RR U2U2 r'r' F'F' (L'L' U'U' LL UU) FF yy FF (RR UU R'R' U'U') F'F' FF (RR UU R'R' U'U') F'F' UU FF (RR UU R'R' U'U') F'F' (rr UU R'R' UU) RR U2U2 r'r' r'r' U'U' RR U'U' R'R' U2U2 rr (RR UU R'R' UU) (R'R' FF RR F'F') RR U2U2 R'R' (RR UU R'R' U'U') R'R' FF R2R2 UU R'R' U'U' F'F' (RR UU R'R' U'U') RR U'U' R'R' F'F' U'U' (FF RR UU R'R') (R'R' FF RR F'F') (R'R' FF RR F'F') (RR UU R'R' U'U') (RR UU R'R') (RR UU R'R' UU) RR U2U2 R'R' FF (RR UU R'R' U'U') F'F' (LL F'F' L'L' FF) L'L' U2U2 LL dd (RR UU R'R') (M2M2 UU M2M2) U2U2 (M2M2 UU M2M2) R'R' U'U' R2R2 UU (RR UU R'R' U'U') RR UU RR U'U' RR U'U' R'R' U2U2 R2R2 U'U' (R'R' U'U' RR) UU RR UU (RR U'U' RR) (R'R' UU R'R' U'U') R'R' U'U' (R'R' UU RR) UU R2R2 xx z'z' R2R2 U2U2 (R'R' D'D' RR) U2U2 (R'R' D'D' R'R') zz x'x' xx R2R2 D2D2 (RR UU R'R') D2D2 (RR U'U' RR) x'x' R2R2 UU R'R' U'U' yy (RR UU R'R' U'U') (RR UU R'R' U'U') (RR UU R'R') y'y' (RR U'U' R2'R2') (RR UU R'R' U'U') R'R' FF R2R2 U'U' R'R' U'U' RR UU R'R' F'F' (FF RR U'U' R'R') U'U' (RR UU R'R' F'F') (RR UU R'R' U'U') (R'R' FF RR F'F') U'U' (R'R' UU RR U'U') R2R2 (F'F' U'U' FF UU) xx (RR UU R'R' U'U') R2R2 x'x' (R'R' UU R'R' U'U') yy (R'R' DD R'R' D'D') R2R2 y'y' (R'R' B'B' RR BB RR) L' U' L F (L' U' L U) L F' L2 U L U R U R' F' (R U R' U') R' F R2 U' R' U' (L U2 L') U2 L F' (L' U' L U) L F L2 U (R' U2 R) U2 R' F (R U R' U') R' F' R2 U' (R U R' U) (R U R' F') (R U R' U') R' F R2 U' R' U2 (R U' R') (R' U R U') R' (F' U' F) (R U R' F) R' F' (R U' R) y R2' u (R' U R' U') (R u' R2) y' (R' U R) (R' U' R) y R2 u (R' U R U') (R u' R2) y R2' u' R U' (R U R' u) R2 y (R U' R') y2 (R U R') y' (R2 u' R) U' (R' U R') u R2 This is the first step in the CFOP series. Cross is the most intuitive step, and will become the most important step as you progress on your journey. In this video we’ll see how we can best deal with each type of cross piece. F2L, or First Two Layers, is the second and longest step of the CFOP method, where we solve the first two layers simultaneously. While it's a significant step up from the beginner method, I've worked hard to make the concepts as easy as possible to understand. Good luck! OLL, or Orientation of the Last Layer, is the third step of the CFOP method which solves the yellow face. In this video I'll show you how to solve the yellow face in two steps (sometimes one) by learning just 9 easy algorithms. PLL, or Permutation of the Last Layer, is the last step of the CFOP method which finished the cube. In this video I'll show you how to do PLL in two steps (or less) by learning just 6 algorithms. Solving the Rubik's Cube in under 30 seconds makes you a true speed cuber. Once you've grasped the basics of the CFOP method, these tips will help you break that barrier! If you’re still struggling with one of the steps, over here you can find example for each of the four steps applying the techniques from the beginner course. The CFOP method (also known as the Fridrich method) is the most popular method for speedsolving the 3×3 Rubik’s Cube. It was invented by Jessica Fridrich in the 1980s and has been used to set countless world records. CFOP stands for the four steps involved in the method: Cross, F2L, OLL, and PLL. This comprehensive guide will walk you through each step of the CFOP method, providing detailed explanations, helpful examples, and tips to improve your speed and efficiency. Whether you’re a beginner just starting with the Rubik’s Cube or an intermediate cuber looking to take your skills to the next level, this guide has something for everyone. Step 1: The Cross The Cross is the first step of the CFOP method and involves solving a cross on the bottom layer of the cube. This means having one color center and four matching edge pieces correctly oriented around it. Tips for solving the Cross: Start with the white face: Most speedcubers start with the white face because it’s the easiest to track visually. Plan ahead: Don’t just solve the cross randomly. Try to anticipate where the next edge piece needs to go and how to get it there efficiently. Use your intuition: With practice, you’ll develop an intuition for solving the cross quickly and efficiently. Finger tricks: Learning basic finger tricks can significantly speed up your cross solution. Example: Let’s say you want to solve the white cross. You might start by finding a white edge piece and placing it in the correct position relative to the white center. Then, you would find another white edge piece and maneuver it into its correct position, and so on until the white cross is complete. Step 2: F2L (First Two Layers) F2L (First Two Layers) is the second and most time-consuming step of the CFOP method. It involves pairing up corner and edge pieces and inserting them into their correct slots in the first two layers of the cube. F2L Techniques: Intuitive F2L: This involves understanding the basic principles of F2L and solving pairs using your own intuition and pattern recognition. Algorithms: There are many algorithms for solving specific F2L cases. Learning these algorithms can significantly improve your speed. Tips for solving F2L: Look ahead: While solving one pair, try to anticipate where the next pair will be and how to get it into position. Efficiency: Aim for the fewest moves possible. Practice: F2L requires a lot of practice to master. Example: To solve an F2L pair, you might first find a corner piece and an edge piece that belong together. Then, you would maneuver them into a specific setup and use an algorithm or intuitive moves to insert them into their correct slots. Step 3: OLL (Orientation of the Last Layer) OLL (Orientation of the Last Layer) is the third step in the CFOP method. It involves orienting all the pieces in the last layer so that the color of the top face is the same. OLL Algorithms: There are 57 OLL algorithms, each corresponding to a different permutation of the last layer pieces. Tips for learning OLL: Start with the easy ones: Some OLL cases are much easier to learn than others. Start with those and gradually work your way up to the more difficult ones. Use mnemonics: Mnemonics can help you remember the algorithms. Practice: Consistent practice is crucial for mastering OLL. Example: One common OLL case is the “dot” case, where all the top layer pieces are oriented correctly except for one, which has its color facing sideways. There’s a specific algorithm to orient this last piece correctly. Step 4: PLL (Permutation of the Last Layer) PLL (Permutation of the Last Layer) is the final step of the CFOP method. It involves permuting the pieces in the last layer to solve the entire cube. PLL Algorithms: There are 21 PLL algorithms, each corresponding to a different permutation of the last layer pieces. Tips for learning PLL: Start with the easy ones: Like OLL, some PLL cases are easier to learn than others. Use mnemonics: Mnemonics can help you remember the algorithms. Practice: Consistent practice is crucial for mastering PLL. Example: One common PLL case is the “T-permutation,” where two corner pieces and two edge pieces need to be swapped. There’s a specific algorithm to perform this permutation. Advanced CFOP Techniques Once you’ve mastered the basics of CFOP, there are several advanced techniques you can learn to further improve your speed and efficiency: Cross + 1: Solving the cross and the first F2L pair simultaneously. Lookahead: Anticipating the next step while solving the current one. Finger tricks: Advanced finger tricks can significantly speed up your solves. Winter variation: A variation of OLL that involves orienting the edges and corners of the last layer separately. ZBLL: A set of algorithms that solve both OLL and PLL in one step. Tips for Improving Your CFOP Practice consistently: The more you practice, the better you’ll become. Focus on efficiency: Aim for the fewest moves possible. Use a timer: Timing your solves helps you track your progress and identify areas for improvement. Watch videos of top speedcubers: Observing how experts solve the cube can provide valuable insights. Join a cubing community: Sharing tips and experiences with other cubers can be motivating and helpful. Conclusion The CFOP method is a powerful and efficient method for solving the Rubik’s Cube. By mastering each step and practicing consistently, you can significantly improve your speed and efficiency. Remember to start with the basics, gradually learn the algorithms, and focus on lookahead and finger tricks to optimize your solves. With dedication and practice, you can become a CFOP master and achieve your speedcubing goals. Cross, First 2 Layers, Orientation, Permutation (CFOP) is the most popular method for speedsolving the Rubik's Cube. It is the method used by all 3x3 world record holders in the last decade. Make sure you know how to read move notation to follow the tutorials. Step 1. Cross You should have already learned about the cross in the Beginner Method. This video assumes you can already do the cross, and then goes into the fundamentals of making your cross faster, including: solving the cross on the bottom, ignoring the centers, and dealing with specific cases. With the right practice, the cross can easily be done in less than 5 seconds. Step 2. F2L Instead of solving layer by layer, you can solve 2 layers at the same time. The concepts are harder than the beginner method, but with practice, F2L is much faster than the beginner method. Intuitive F2L means algorithms are not required, and the process should make sense. You can save around 20 moves per solve by using F2L instead of the beginner method. Step 3. OLL Orientation of the Last Layer (OLL) solves the top face by applying algorithms. Beginner OLL (2-look OLL) has 2 steps: Orient the edges (3 algorithms) Orient the corners (7 algorithms) Some of these algorithms were already taught in the beginner method. Other algorithms can be memorized by patterns (which is a common technique for memorizing algorithms) shown in the video. To organize your progress and train the algorithms, use the 2-look OLL algorithm trainer. Step 4. PLL Permutation of the Last Layer (PLL) solves the cube after the top face is completed. Beginner PLL (2-look PLL) has 2 steps: Solve the corners (2 algorithms) Solve the edges (4 algorithms) The corner algorithms are long, but very similar to each other. The edge algorithms are quite short and can be memorized visually. To organize your progress and train the algorithms, use the 2-look PLL algorithm trainer. Advice You should focus on new things to learn, in order to maximize improvement. I recommend learning OLL and PLL first, followed by F2L, and leaving the cross improvements for later. It will probably take a few days to properly memorize all of the algorithms. Memorizing too much at once will make you forget them, so try to avoid overlearning. F2L is not that hard to understand at first, but practicing it is where most of your time investment will be. There are many different situations to recognize, and finding 2 pieces at once is definitely a step up. Expect to be slower at first since it's harder, but over time you will be much faster with F2L compared to the beginner method. Practice is absolutely key for speedsolving. It's a lot easier to become knowledgeable about algorithms and concepts than it is to actually become fast at solving the cube. I know people who know many algorithms and take over 1 minute, as well as people who are sub-30 seconds with the beginner method because of how much they practice. Next Steps Learn good finger tricks to ensure you have high turning speed potential. Good habits are crucial for getting faster, since you don't have much time to think when you solve. When you feel you are ready to move on, you can learn Advanced Cross, Advanced F2L, Full OLL, and Full PLL. There is no set time for when this should happen, but usually people approach this around sub-30 second averages. Good luck! Download Article Everything you need to know about this popular speedsolving method Download Article Do you wish you could solve a Rubik's Cube even half as fast as a champion like Max Park? Well, you've come to the right place. If you want to drastically decrease your speedsolving time, it's going to take a lot of practice. That, and the CFOP method! With the help of Rubik's cube artist and champion Timothy Huynh, we'll walk you through the 4 stages of the CFOP process: Cross, first two layers (F2L), orient the last layer (OLL), and permute the last layer (PLL) and give you the algorithms you need to get started. The CFOP method allows you to solve a Rubik's cube using 4 steps: Cross, first two layers (F2L), orient the last layer (OLL), then permute the last layer (PLL). This method is favored by the fastest speedsolvers because it relies primarily on muscle memory and algorithms, which allows you to get faster through repetition. 1 Inspection During a speedsolving competition, you have 15 seconds to inspect the scrambled cube before you start solving. CFOP solvers often use this time to work out how to make the white cross, which will be the first stage of the solving method.[1] Huynh notes that the top five-second solvers now "basically know 70% about the whole solution with just inspecting [the cube] in 15 seconds," so this is a very important part of the solving process. When you're solving at home, you can take as much time as you want to inspect the cube and visualize your moves. If you're aiming to compete, though, you'll eventually want to start limiting yourself to a maximum of 15 seconds. 2 Cross For the first stage of the CFOP method, the goal is to create a white cross on the bottom face of the cube. While you can use algorithms at this stage, there are really too many to list. Most solvers complete this stage with pattern recognition and intuition.[2] While it does make more sense to solve the cross on the top face and then just flip the cube over, practice doing it on the bottom if you want to eventually reach solve times under 20 seconds. Advertisement 3 First two layers (F2L) When you first started solving, you were likely solving layer by layer. Huynh explains that F2L is "significantly quicker because you're doing two layers at once, but it's much trickier as well because in the beginner's method, you're just focusing on the corners, but in the F2L, you're doing corners and edges at the same time. So you're paying attention to different pieces." While there are some algorithms you can learn that will help you solve this stage more efficiently, most players find it easiest to solve by intuition when they're first starting out.[3] With practice, you'll start to recognize patterns and learn the turns you need to make to get the first two layers lined up. 4 Orient last layer (OLL) In this stage, solve the top layer of the cube so that it's all yellow. At this point, you don't have to worry about whether all the side colors match—you'll fix that in the last step.[4] It's usually best to start with the two-look OLL method, which requires learning fewer algorithms (even though it takes a little longer). According to Huynh, "two-look OLL is a method you learn pretty much after beginners if you want to improve." 5 Permute last layer (PLL) Start by rotating the top layer so that you've aligned as many pieces as possible. With practice, pattern recognition will make this much easier. Then, use one of the 21 PLL algorithms to complete your solve.[5] As a beginner to the method, two-look PLL allows you to complete this stage without memorizing as many algorithms, although it does tend to require a few extra moves. Advertisement CFOP is widely considered the fastest speedsolving method. It's definitely the most popular, with all of the world champions using some variation of it. The primary benefit of the CFOP method is that it relies a lot on memorization of algorithms and muscle memory, meaning that you can just practice and practice to become better.[6] As you get used to pattern spotting, you'll be able to see not only the patterns on the cube but the patterns that will be created if you make specific moves. This allows you to think ahead and potentially skip steps. Thanks to muscle memory, you don't even have to think about the algorithms you've memorized after you've practiced them enough. Your brain will recognize a pattern and your fingers will know what to do in response to that pattern without you even actively thinking about it. Most beginner's methods use some parts of the CFOP method, which also makes it the easiest method to pick up first if you want to learn some more advanced solving methods. Yes, with practice you might find that you can skip steps. Typically, this happens when you recognize a pattern that you know you can resolve in such a way that you complete the next stage at the same time. This can potentially save you a lot of moves and drastically cut your time—but it's not something that's likely to happen very often. Even if you can't skip an entire stage, you might also see multiple patterns that allow you to choose the solve method with the fewest number of moves. Advertisement 1 Memorize the Singmaster algorithm notation. Singmaster move notation is the most commonly used way to write the algorithms you'll need to solve a Rubik's cube puzzle using the CFOP method. The basic moves are notated using the first letter: Up, Down, Right, Left, Front, Back. These orientations are based on how you're looking at the cube, so the "up" side is the side on the top as you're looking at it. A single letter means that you turn that side clockwise, as if you were facing it.[7] If there's an apostrophe after the letter (called a "prime" in Singmaster notation), turn that face counter-clockwise instead. If there's a 2 after the letter, it means to turn that side twice. Wide moves turn 2 layers at once and are denoted by lower-case letters, rather than upper-case letters. Cube rotations are denoted with x, y, and z. For x, you rotate the cube right, up for y, and front for z. Slice moves turn the middle layer and are denoted with M, E, and S. For M, turn to the left. For E, turn down. When you see an S, turn the layer to the front. 2 Use the two-look OLL method to simplify OLL algorithms. When you're just starting out, it's going to be tough to memorize an algorithm. After you've memorized your first one and practiced with it, though, it'll become second nature. As you go, muscle memory means each new algorithm will take progressively less time for you to pick up. But as a beginner, the two-look OLL method allows you to practice the CFOP method while only learning 9 algorithms:[8] Dot shape (edges): F R U R' U' F' f R U R' U' f' I-shape (edges): F R U R' U' F' L-shape (edges): f R U R' U' f' Antisune (corners): R U2 R' U' R U' R' H (corners): R U R' U R U' R' U R U2 R' L (corners): F R' F' r U R U' r' Pi (corners): R U2 R2 U' R2 U' R2 U2 R Sune (corners): R U R' U R U2 R' T (corners): r U R' U' r' F R F' U (corners): R2 D R' U2 R D' R' U2 R' 3 Permute the last layer by solving the corners, then the edges. This is called "two-look PLL" and only requires you to learn 6 algorithms, which is a lot easier than learning the 21 total PLL algorithms. It does require you to break the PLL process down into two separate stages and solve the corners first, then solve the edges. Use the following algorithms:[9] Diagonal (corners): F R U' R' U' R U R' F' R U R' U' R' F R F' Headlights (corners): R U R' U' R' F R2 U' R' U' R U R' F' PLL (H) (edges): M2 U M2 U2 M2 U M2 PLL (Ua) (edges): R U' R U R U R U' R' U' R2 PLL (Ub) (edges): R2 U R U R' U' R' U' R' U R' PLL (Z) (edges): M' U M2 U M2 U M' U2 M2 Advertisement 1 Complete the OLL stage in a single step. Once you've got the two-look OLL stage down, you might decide that you're ready to take your skills up a notch and go to the straight OLL, the kind all the pros use. This stage has a whopping 57 algorithms to memorize, but once you do, you'll be able to save every permutation of the top layer using a single sequence of moves.[10] Essentially, these 57 algorithms give you the code to solve the Rubik's Cube puzzle from this stage of the process. Like the beginner algorithms you learned, all of these algorithms can be drilled until it becomes like second nature for your fingers to move in response to the pattern you see. 2 Pick up the rest of the PLL algorithms. There are 21 total algorithms for the PLL stage if you're not doing it in two looks. The great thing is that you've already learned 6 of these for the two-look PLL, so now you only have 15 left to master.[11] Drill the algorithms in small groups to learn them for quicker mastery. For example, you might learn 5 algorithms and drill them for a week, then learn the next 5 and alternate drilling them and drilling the new ones. 3 Look for patterns that predict future patterns. After you've practiced for a while, you'll start to see patterns that you recognize. Some of these patterns will enable you to unlock other patterns with just a few turns. These are effectively shortcuts that you'll find along the way.[12] While CFOP is a less intuitive method than some others, incorporating pattern recognition can help you complete the stages of the method even faster. Advertisement 1 Keep your cube well-lubricated. A well-lubricated cube just moves smoother and faster than one that's not. Once you're confident in your movements, you'll find that you can turn a well-lubricated cube much more quickly and with a lot less effort.[13] A well-lubricated cube also decreases the resistance, which can lower your risk of hand and wrist repetitive-use injuries. You reduce the risk that the cube will lock up as well, which could totally ruin your time. Silicone grease and silicone sprays tend to work a bit better for lubricant than WD-40, which can make the cube (and your fingers) a bit sticky.[14] 2 Practice strong finger placement. The more types of moves you can make without moving your fingers, the faster you'll be able to make those moves. Choose the finger positions that give you the most mobility and allow you to manipulate the cube in as many ways as possible without changing those finger positions.[15] This is also part of building muscle memory because your fingers will automatically know exactly where to move and what to do when they are oriented in the same position on the cube every time you pick it up. During competition, use a couple of seconds of your inspection time to make sure that your fingers are in a good position and you're holding the cube in the way that's most comfortable for you. 3 Visualize the moves as you look at the scrambled cube. As you recognize patterns, apply the algorithm mentally by visualizing your fingers making the required moves or just the cube moving in the way that you want. Practice running through the whole algorithm mentally before you set your fingers to it. Doing this will make your movements more automatic.[16] The aim of this exercise is to decrease the delays between moves so that your fingers seem to be moving synchronously in many different directions at once. Because your fingers already know what to do next, they'll anticipate that action, which also helps you get faster. 4 Keep your hands in a neutral position and hold the cube stable. Hold the cube steady in one place rather than moving it around. As you make moves, focus on moving only your fingers and keeping your palms steady at all times. Steady palms will keep the cube stable and make it less likely to slip.[17] There are some moves that you can't complete without moving your hand. But when you make those moves, you can still keep your hands as still as possible. Think in terms of making a subtle tip of your hand rather than an exaggerated movement that will take more time to complete. 5 Move with delicate precision rather than brute force. If you started out playing with a cheaply made cube, you might be used to handling it with more force than might be strictly necessary—especially if you start practicing with a competition-grade cube. Using less force also conserves energy, which means that your fingers will be able to move a little faster.[18] When you focus on accuracy and making precise movements, you might also find that you can pull off little finger tricks that you learn with more consistency. On the other hand, turning aggressively can actually cause your cube to lock up—and that certainly won't do anything to improve your time. 6 Drill algorithms regularly. Huynh recommends that you "just sit and drill your algorithms, make sure your finger tricks are good and make sure you master them." Top solvers may know up to 3,000 algorithms, which obviously you can't sit and drill all at once. When you get to the point where you know quite a few, Huynh advises that "spaced repetition is a good tool to use if you're learning a lot of algorithms or just in general." The more often you drill algorithms, the more natural and automatic the finger movements will become. It'll also take less time for you to think about the algorithm before you execute it. 7 Experiment with different algorithms and finger tricks. Once you've memorized the algorithms, you can start playing around and figure out which ones work best for you, given all the different variables including hand and finger size and dexterity. Pinpoint the algorithms that are most comfortable for you, then work on pattern spotting to identify situations when you can use that algorithm—or make a few minor adjustments that will set you up for that algorithm.[19] Huynh emphasizes that getting faster is really about "improving your skills little by little and not worrying about who has what time." He encourages beginners to "think about it in the long run because when you learn a new method, you're going to be slower than you were." Advertisement Ask a Question Advertisement This article was co-authored by Timothy Huynh and by wikiHow staff writer, Jennifer Mueller, JD. Timothy Huynh is a Rubik’s Cube Artist & Champion based in Tampa, Florida. Timothy has been solving Rubik's Cubes professionally since 2016 and became a Guinness World Record Holder with advanced Rubik's cube-solving skills. Timothy has a follower base of over 8.6 million YouTube subscribers and 124k followers on Instagram. Internet celebrities including David Dobrik and Simu Liu have sung his praises, and Pixar has deemed his work "incredible." This article has been viewed 3,393 times. Co-authors: 6 Updated: February 13, 2025 Views: 3,393 Categories: Rubik's Cube Print Send fan mail to authors Thanks to all authors for creating a page that has been read 3,393 times.