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Back in 1981-82, **Erno Rubik** released a puzzle that seemed to start a Cube Craze. His Rubik's Cube was just the start of dozens of puzzles to hit the market. Although the craze lasted only 2 to 3 years, there are some puzzle fans out there, like me, who simply refuse to let it all go. If you are one of those, or simply still have one of these puzzles around, you can finally <u>SOLVE</u> the darn thing by following along.

Please review the <u>Basic Terminology</u> section, as you will need to be familiar with it in order to follow along.

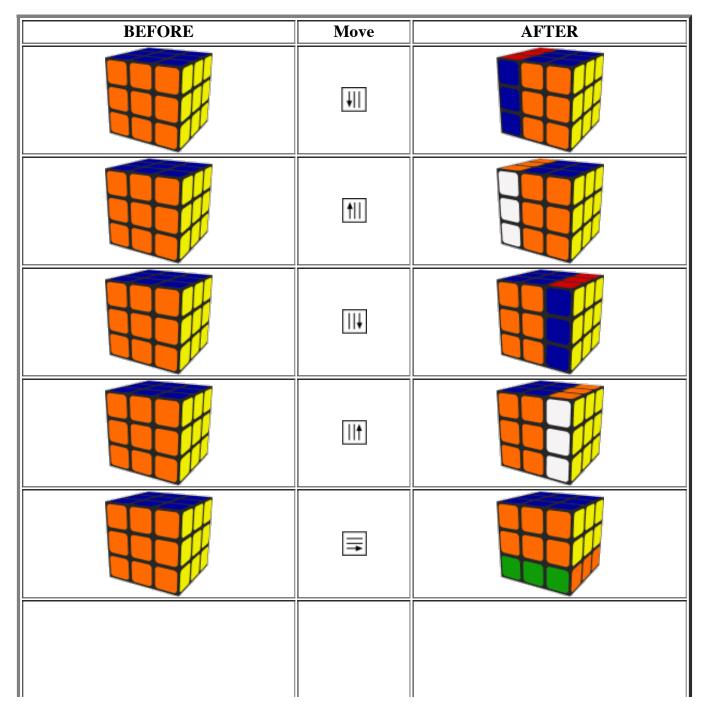
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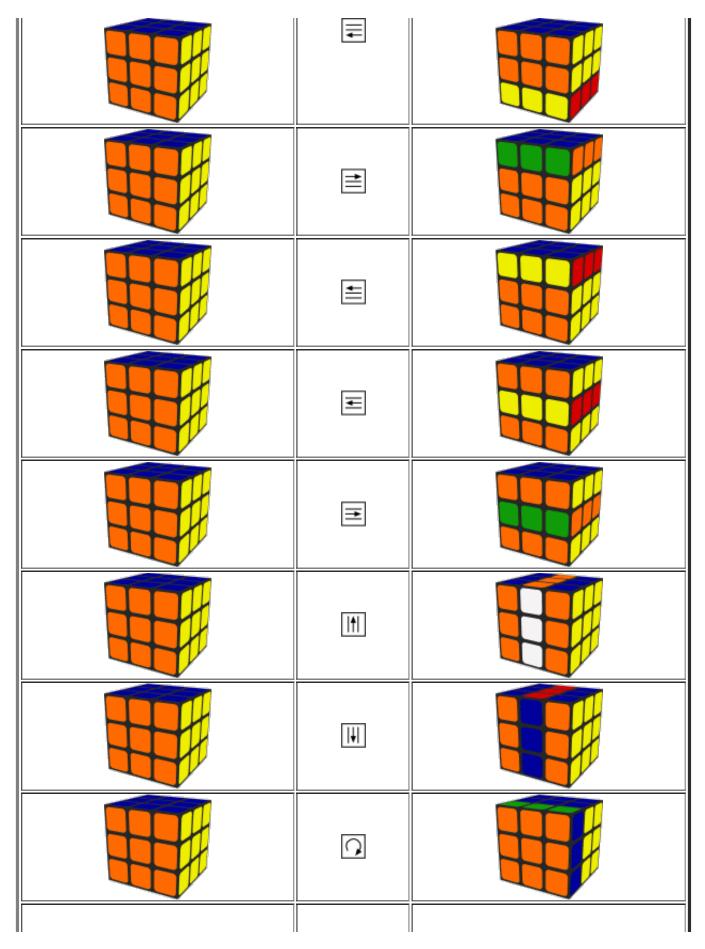
This site was created on 3/1/97 by Denny Dedmore who is no longer maintaining this site

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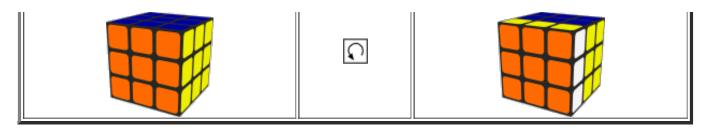


Since solving the puzzle will involve you having to turn different sides of the cube different directions, I have come up with the following symbols that you will need to be familiar with in order to successfully solve this puzzle. It should only take a few minutes of study to fully understand all of them.





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Yes, these are the only symbols that you will have to be familiar with to fully this puzzle. Now let's go back and <u>SOLVE</u> the cube.



Now that you have reviewed the Terminology section, you are ready to start solving the Rubik's Cube.

The Top Corners

I have based all of the pictures shown here, on the Rubik's Cube that I have. Your colors may be different or they may be on different sides. If this is the case you may have to do some mental juggling to follow along. When this process is finished the top of your cube will look like this:



The First Corner

You will start by solving the BLUE side of the cube. Rotate the cube in your hands until you find the corner with the colors (Blue/Orange/Yellow). Now turn the cube so that the Blue sticker on that corner is facing up and matches the picture below.

NOTE: The gray stickers indicate that the colors of those stickers are irrelevant to the operation being performed.



Congratulations! You have placed your first piece.

Notice that we considered this piece **in place** when it was correctly positioned in the upper right-hand corner of the Rubik's Cube. The following procedures for solving the rest of the top corners of the Rubik's Cube also

rely on that same assumption.

The Top Center Piece

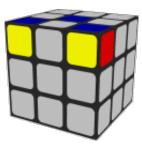
Before we can continue you must move the appropriate Blue Center piece to the center top position. If you simply rotate the two center rows (highlighted below) you will be able to position the Blue Center where it belongs:



Let's now proceed to the other top corners.

The Second Corner

Before you can put the second corner in place, you need to rotate the cube 1 turn to the left so that the upper right-hand corner does not have a properly positioned piece in it. When we finish putting this second piece in place, your cube will look like this:

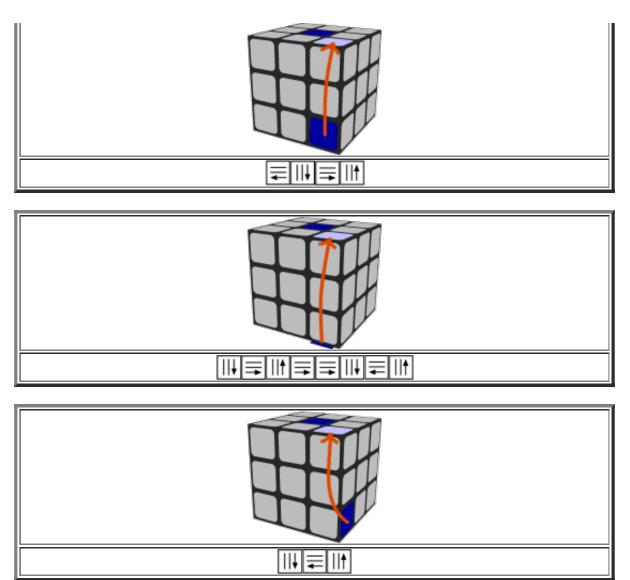


Now you need to put the second piece in place. First, let's find it.

Keeping the one solved piece in the upper left-hand corner, spin the bottom of the Rubik's Cube until you find the piece you want (the Blue/Yellow/Red corner).

■ Note: It is possible that the corner you are looking for is not presently on the bottom. If this is the case you will need to jump to The Third Corner and then come back to this corner last.

Once you have found the piece you wanted, keep turning the bottom until the piece is in the bottom right-hand corner, directly below where you want to place it. Your Rubik's Cube should match one of the three images below. Follow the procedure below the appropriate image to put the piece in its proper place.



The Third Corner

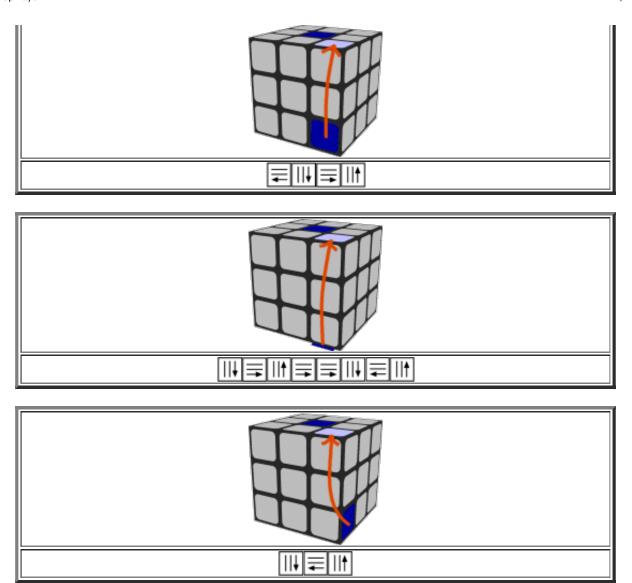
Before you can put the third corner in place, you need to rotate the cube 1 turn to the left so that the upper right-hand corner does not have a properly positioned piece in it, as you did while solving the Second Corner.

Now you need to put the third piece in place. First, let's find it.

Spin the bottom of the Rubik's Cube until you find the piece you want (the Blue/Red/Green corner).

■ Note: It is possible that the corner you are looking for is not presently on the bottom. If this is the case you will need to jump to <u>The Fourth Corner</u> and then come back to this corner last.

Once you have found the piece you wanted, keep turning the bottom until the piece is in the bottom right-hand corner, directly below where you want to place it. Your Rubik's Cube should match one of the three images below. Follow the procedure below the appropriate image to put the piece in its proper place.



The Fourth Corner

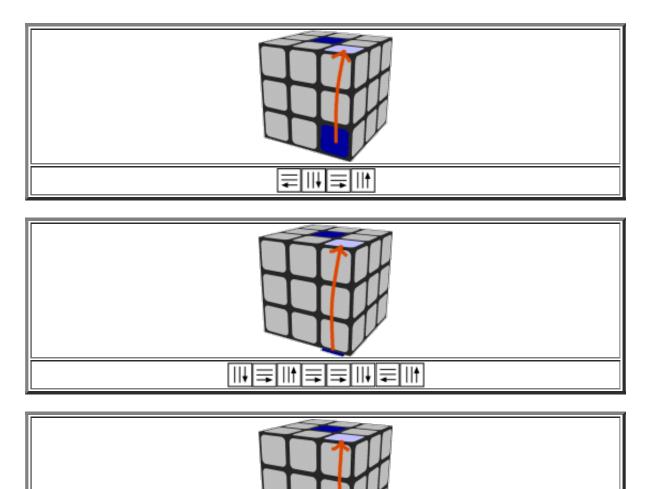
Before you can put the Fourth corner in place, you need to rotate the cube 1 turn to the left so that the upper right-hand corner does not have a properly positioned piece in it, as you did while solving the Previous Corners.

Now you need to put the fourth piece in place. First, let's find it.

Spin the bottom of the Rubik's Cube until you find the piece you want (the Blue/Green/Orange corner).

■ Note: It is possible that the corner you are looking for is not presently on the bottom. If this is the case you will need to jump to <u>Completing The Top</u>.

Once you have found the piece you wanted, keep turning the bottom until the piece is in the bottom right-hand corner, directly below where you want to place it. Your Rubik's Cube should match one of the three images below. Follow the procedure below the appropriate image to put the piece in its proper place.

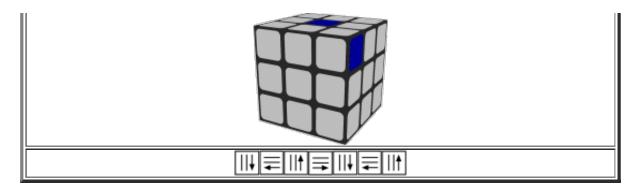


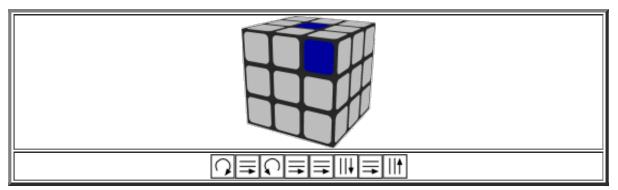
Completing The Top

At this All Of The Top Corners Have Been Completed. If not you may go back and solve:

- The Second Corner
- The Third Corner

If you are having problems putting a piece in place because it is not on the bottom and is actually in its proper place - however the Blue Side is not facing up - then match your scenario to one of the situations below and follow the steps shown.





When you have completely finished the top corners, you will be ready to <u>SOLVE</u> the Top Edges

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Now that you have completed the Top Corners, you are ready to position all of the Top Edges of your Rubik's Cube.

The Top Edges

When you are finished with this step of the solution, you will have a cube that looks like this:

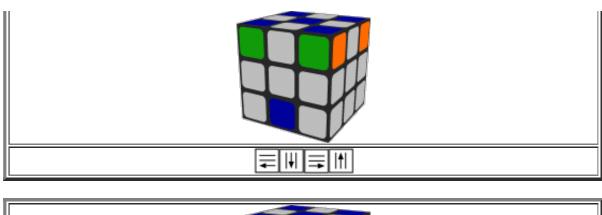


The Four Top Edges

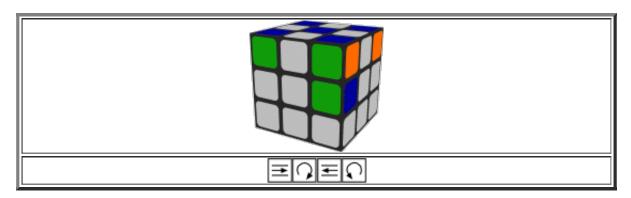
You will need to find an edge piece that belongs on the top layer.

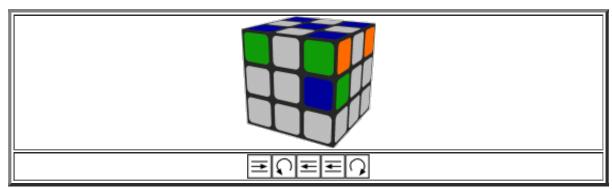
So that you do not undo the hard work you accomplished in putting the top corners in place, please do not rotate any of the sides of the cube while looking for these pieces. You are only allowed to spin the bottom layer or the middle layer.

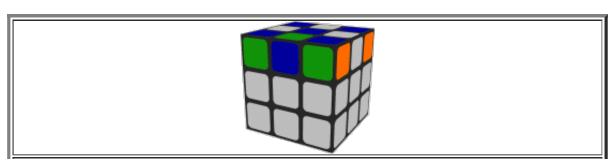
We now need to strategically position your found piece. Spin either the bottom layer or the middle layer in order to position your found piece to match one of the 5 possible scenarios below. Follow the instructions below each scenario to properly position that one piece. Repeat this process up to 4 time to place all 4 edge pieces on the top.













When you have completely finished the top edges, you will be ready to <u>SOLVE</u> the Center Row.

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Now that you have finished the entire Top Layer of the cube you are ready to start solving the Middle Layer.

The Middle Edges

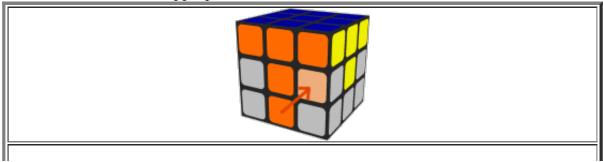
When you finish this next step your cube will look like this:



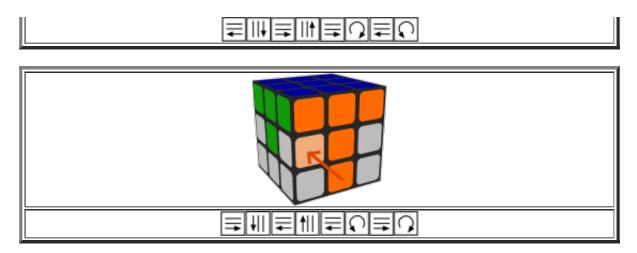
Before we start, rotate the top layer until the center colors on all 4 sides match the top row. This will in effect lock the two top rows into position. We're getting closer. Your cube should look like this:



There are only 3 possible scenarios you will face when tackling this middle row. To start, simply look at the 4 edges on the Bottom Layer and find one piece that does not belong on the Bottom Layer. Once you have found one, simply rotate the Bottom Layer until you match one of these two possibilities as shown below, and follow the direction below the appropriate match:



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The third possibility is that a piece is already in place, but backwards, as shown below. Unless the piece is on the bottom row you will not be able to get it properly in place, so simply put a bogus piece, from the bottom row, in its place - this will force the problem piece to the bottom row so that you can use one of the two methods above to put it back in place.

Repeat this process for each edge piece and you will have completed the middle layer.

When you have completely finished the Middle Layer, you will be ready to <u>SOLVE</u> the Bottom Corners

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Before we start the next section I want you to flip the Rubik's Cube upside down, so that the Blue face is facing down. We will work through the remaining steps this way.

Positioning The Last Corners

Find the two corners on the top layer that have ORANGE on them. It does not matter at this time which directions the ORANGE colors face.

If the two ORANGE corners are next to each other then rotate the top layer until you can match your Rubik's Cube to the picture below.

NOTE: If the Orange corners are diagonally across from each other you will need to skip to the <u>diagonal</u> procedure.

 NOTE: The appearance of the many Orange stickers on the two top corners is only to show that the Orange stickers can be facing any direction.



If the corners are actually in their correct locations (even if their colors are not quite yet facing the correct directions), then this step is <u>complete</u>.

If they are actually backwards (in each other's position) then perform the following procedure to swap them.



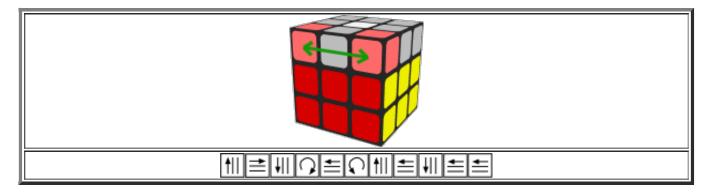
Diagonally

If the Orange corners were diagonally across from each other, you will need to rotate the Top until the Top Left Corner is actually in the correct position and then perform the following procedure to move the other Orange corner into its proper position.



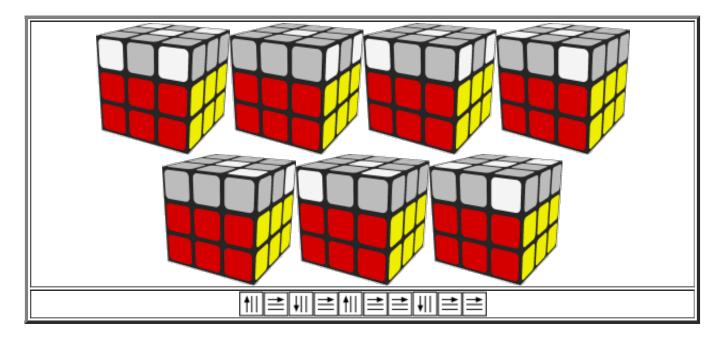
The Other Two Corners

Once you properly position the Orange corners you will need to check the positions of the Red corners. If they need to be swapped, perform the following procedure.



Finishing The Corners

Spin the entire cube (keeping the White Side Up) until you can match one of the 7 patterns below. Don't concern yourself if your yellow and red sides are not matching up like in my images. If after completing the process below, you find that the corners are not quite yet finished, match up your new pattern and perform this sequence once again. You will have to perform this process no more than three times - and hopefully just once.



Now that you are totally finished with the Corners, you will be ready to fully <u>SOLVE</u> the entire cube.



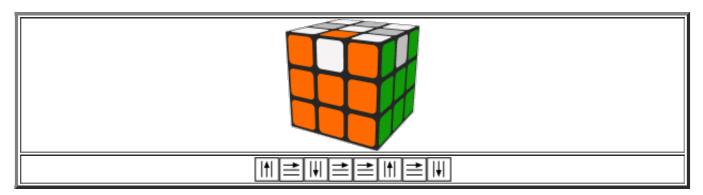


The corners are all finished and just 4 little pieces left to put in place.

Last Four Edges

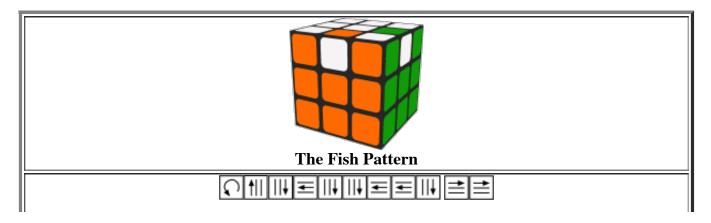
Even in the worst possible scenario at least one of the 4 remaining edges is actually in place. Find that piece and rotate the cube until it is positioned in the Front as shown below. If you perform the following move, you will be able to put all 4 pieces in their correct locations.

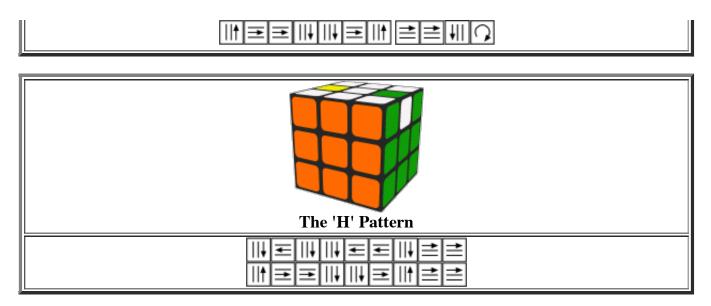
Note: You may have to perform this step twice to get them all in place.



The Last Step

All pieces are now in place, in fact you may actually be done now. Your cube can now only appear in one of 2 different states. I have outlined those states below with the needed moves to correct them.





If you find youself with all four edge flipped (I call this the Double 'H' Pattern) then you will simply need to perform the above 'H' procedure twice.

That's it! You're done! Practice often and spread the word!

The Cube Is Not Dead!

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