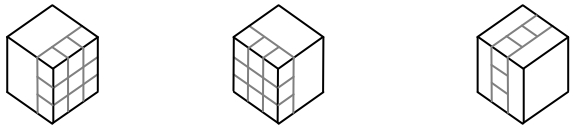
Revolving Door Solution by Dan Knights

This solution is unique for several reasons: it requires no special algorithms; it requires no special notation; lastly, it is designed so that, after some practice, anyone can follow the logic behind each step. Most other solutions require blind memorization without understanding. Although you can blindly memorize this solution too, I encourage you to try to understand how it works. This is the only solution that uses common sense to solve the cube, and it's all done using the concept of "Revolving Doors." If you learn how to use the "Doors" as shown on this page before you begin the actual solution, then the rest will be a breeze!

Think of each layer of the cube as a "revolving door" with 4 corner slots and 4 edge slots. Here are the 3 doors that we use:

"Right Door" **"Left Door"** **"Middle Door"**



Practice turning each door before you continue. Now imagine that you are actually standing in a revolving door and you want to get in a different slot. You would first have to step out, then open the door, then step back in, then close the door. We can move a corner piece IN and OUT of the top layer using this concept. Practice each of the following tricks until you feel comfortable using them:

RIGHT DOOR IN (RDI)

He steps out of the way… | you open the door… | he steps back in the door… | you close the door.

RIGHT DOOR OUT (RDO)

You open the door… | he steps out of the way… | you close the door… | he steps back in the door.

LEFT DOOR IN (LDI)

He steps out of the way… | you open the door… | he steps back in the door… | you close the door.

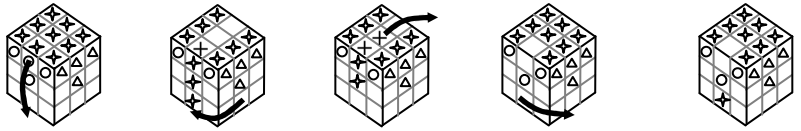
LEFT DOOR OUT (LDO)

You open the door… | he steps out of the way… | you close the door. | he steps back in the door…

MIDDLE DOOR IN (MDI)

He steps out of the way… | you open the door… | he steps back in the door… | you close the door.

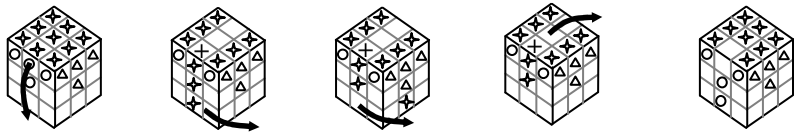
MIDDLE DOOR OUT (MDO)



You open the door… | he steps out of the way… | you close the door… | he steps back in the door.

There's just one other trick that we'll need for the middle door:

MIDDLE DOOR FLIPPER (MDF)



You open the door… | he steps all the way to the back (double turn)… | you close the door…

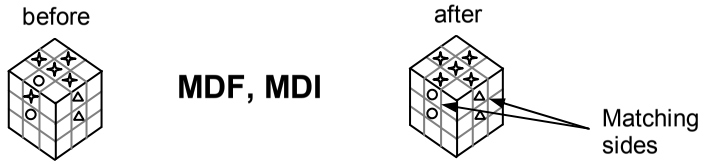
When I say, **"Top"** I mean "turn the top layer 90 degrees clockwise," like this:

If you can understand each of these tricks, then you've already learned all the tools you'll need to solve the cube. Read on to find out how…

As you work on the cube, keep in mind that the center squares of each face are attached to the center of the cube, so that they can never change position relative to each other (e.g. "RED" is always opposite "ORANGE").

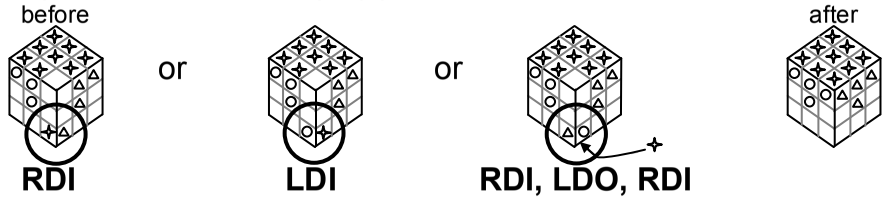
Step 1 - Solve the first side cross.

You must first solve the 4 edges of the top layer, forming a "cross." Each edge piece must match the top center sticker AND its side center sticker, as in the picture. You have to figure this step out on your own, but you can use the MIDDLE DOOR tricks to insert and remove edge pieces from the top without disturbing the other top edges. Here's a trick in case you find an edge piece in the correct place but flipped the wrong way:



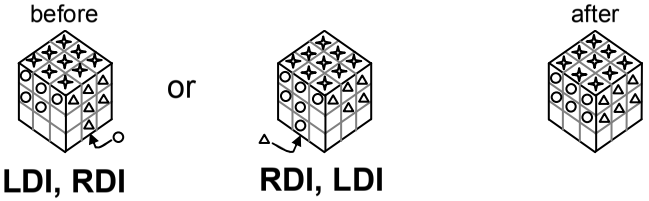
Step 2 - Solve the first side corners.

Find a corner piece in the bottom layer that belongs in the top. Turn the bottom layer until that piece is directly below its home in the top layer, as in the pictures below, and follow the directions. Once that piece is solved, do the other 3 corners in the same way. If a corner is stuck in the wrong place or is twisted the wrong way, just do RDO to remove it, then solve as above.



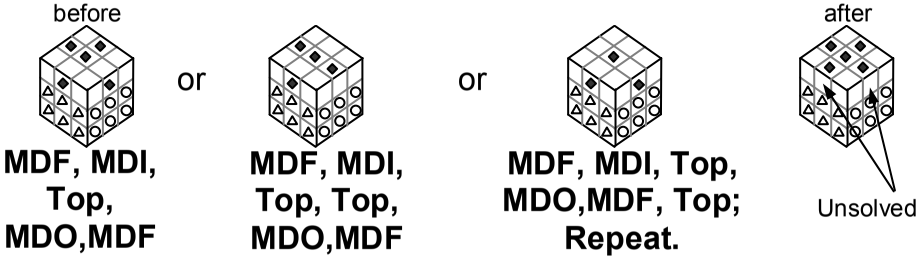
Step 3 - Solve the middle layer edges.

Find an edge piece in the bottom layer that belongs in the middle layer. Turn the bottom layer until the edge is lined up with the matching center sticker as in the pictures below. The edge piece needs to have BOTH of the correct colors to fit in the middle layer. Use the RIGHT and LEFT DOOR tricks to solve it, as shown below. Once that piece is solved, do the other 3 middle-layer edges in the same way. If you find a piece that's "stuck" in the middle layer in the wrong place or flipped the wrong way, just do LDI, RDI to move it to the bottom, then proceed as above.



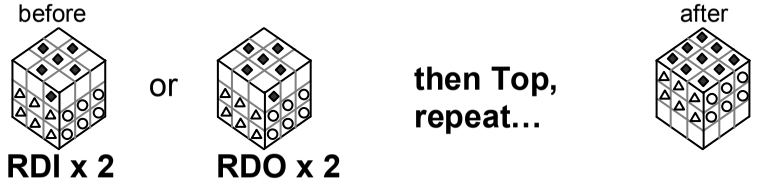
Step 4 – Flip the top cross.

Flip the cube over so that the solved side is underneath. The goal of this step is to get a cross on the top side. Sometimes you will skip this step. Hold the cube so that it matches one of the pictures, and use MIDDLE DOOR tricks to solve. (Note: you just need to get the four edges showing the same color on top – the sides of them don't matter yet.)



Step 5 – Flip the top corners.

The goal of this step is to get the **4** top corner pieces flipped so that the entire top layer is one color. Hold the cube so that the top corner piece facing you needs to be flipped. Do RDI **2** times or RDO **2** times according to the pictures below. Then, **while keeping the same face in front** (that means DON'T turn the whole cube), turn the Top until the new upper-front-right corner piece needs to be flipped. Repeat this step until all **4** top corners are flipped correctly. Don't worry if the bottom of the cube gets messed up – it will get back to solved again by the time you finish this step.



Step 6 - Position the top corners.

Turn the top until **1** corner is solved and the other **3** corners need to be swapped as in the picture. If **2** corners are solved and **2** are unsolved, you need to turn the top until only **1** is solved. If you can't get just **1** solved, just do the trick below starting with any side, and repeat this entire step (including turning the top until just **1** corner is solved).

RDO, Top, RDI, Top,
RDO, Top, Top, RDI

Step 7 – Position the top edges

Hint: If you have **1** edge solved and **3** unsolved, hold the cube as in the picture below and use the MIDDLE DOOR tricks to solve them. If the 3 edges still need to be swapped, do the sequence again. If you have **4** unsolved edges, just do the trick below starting with any side, then repeat this step. Note that this works exactly like the trick in **Step 6**.

MDF, Top, MDF, Top,
MDF, Top, Top, MDF

Congratulations! Now do 25 random turns and go back to Step 1….

Also note: as you become familiar with this solution you may notice situations where you can avoid doing extra turns. In fact, once you are comfortable applying the "revolving door" tricks, you can customize the solution and even invent your own tricks.