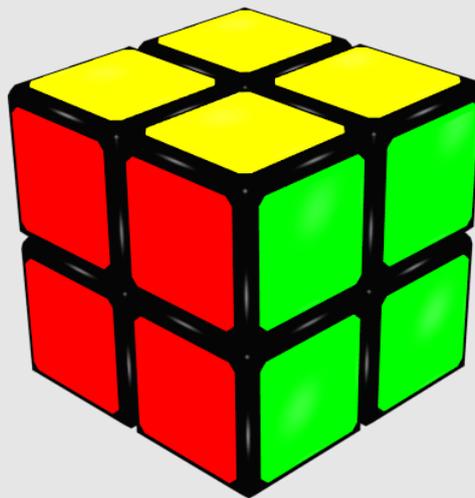


2x2x2 cube LBL method



Version 5. Updated on 28th August 2016.



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Introduction

This is a LBL (Layer By Layer) method, and the aim is to place correctly one layer before solving the next one. This method is divided into three parts:

1. FL: First Layer. Here, the four stickers of the same colour are joined in the same face, while placing correctly the pieces of this layer.
2. OLL: Orientation of the Last Layer. The goal is to make the opposite face contain just one colour. In this method seven different algorithms are used for this step.
3. PLL: Permutation of the Last Layer. Here, we have to move the pieces of the last layer (while keeping a single colour on the face) until the cube is solved. We will use four algorithms.

As an example to explain this, the white face will be completed first, and the yellow face in the second part. However, all these rules can be applied to no matter what couple of opposite colours of the cube.

1 FL (First Layer)

Here, the aim is to put the same colour stickers together in one face, while placing correctly the pieces of this layer (see Figure 1). Although in this guide this part will be explained in a very methodical way, it is actually very intuitive and practice is much more important than memorizing.

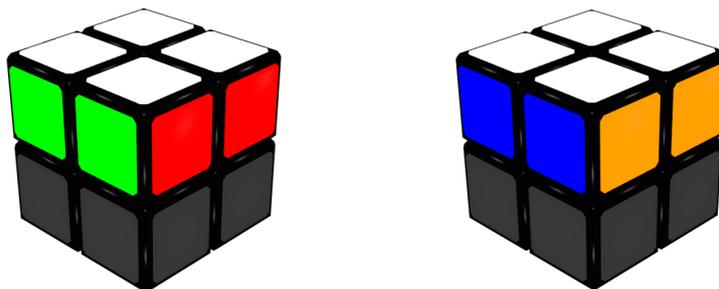


Figure 1: Final situation of the cube after FL step.

Table 1 shows the different options when we find a piece on the right of the cube, and Table 2, the options when we find a piece on the left. All the movements can be learnt, or you could use the first five algorithms or the last five, because we can easily pass from a case of the first Table to a case of the second one, just by turning the whole cube. Table 1 will be easier for right-handed people, and Table 2, for left-handed people.

Table 1: Algorithms of the 1st part (FL), with a piece to place on the right

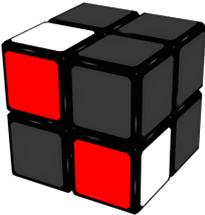
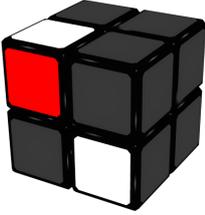
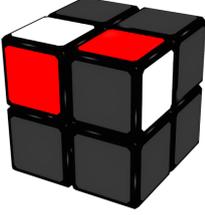
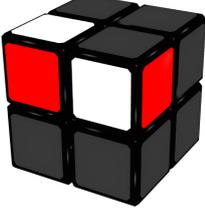
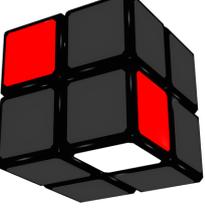
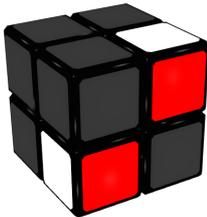
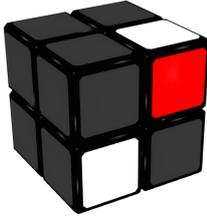
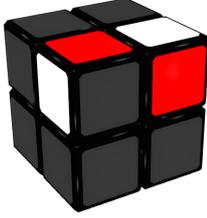
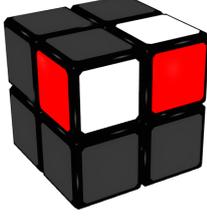
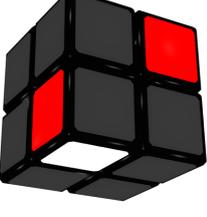
Case	Figure	Algorithms	Comments
1		R'D'R	
2		D'R'DR	
3		R'D'RDR'D'R	
4		R'DR - D'R'DR	After the first three movements, we arrive to case 2.
5		R'DRD2R'D'R	

Table 2: Algorithms of the 1st part (FL), with a piece to place on the left

Case	Figure	Algorithms	Comments
1		LDL'	
2		DLD'L'	
3		LDL'D'LDL'	
4		LD'L' - DLD'L'	After the first three movements, we arrive to case 2.
5		LD'L'D2LDL'	

2 OLL (Orientation of the Last Layer)

This step, unlike the previous one, is designed to be memorized.

The images that describe this case are shot from above and maintaining only the colour yellow. An example of the process followed to get the images is this:

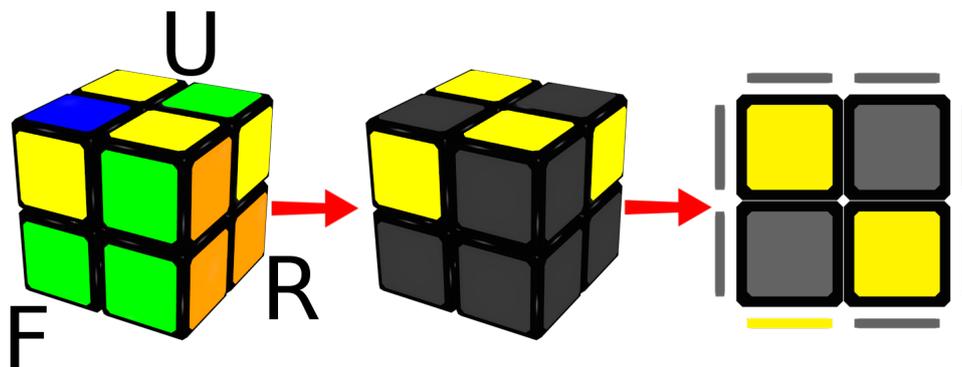
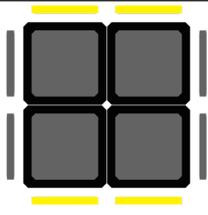
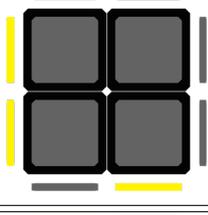
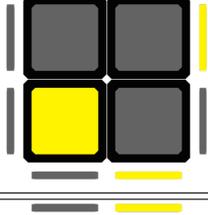
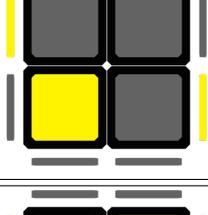
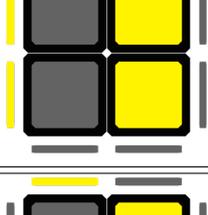
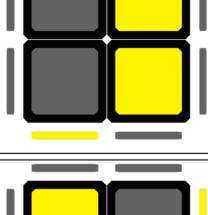
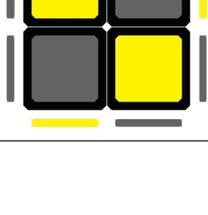


Figure 2: Left: Cube with every colour. Center: Only yellow is left. Right: Top view, with the front face below.

The different cases are shown below (Table 3).

Table 3: Algorithms of the 2nd part (OLL)

Case	Figure	Algorithms	Comments
1		$R^2U^2 - R' - U^2R^2$	
2		$F - RUR'U' - RUR'U' - F'$	
3		$RUR'URU^2R'$	
4		$U^2 - RU^2R'U'RUR'$	Without the first two movements, it is the opposite to case 3.
5		$FRUR'U'F'$	
6		$RUR'U'R'FRF'$	
7		$FR'F'RURU'R'$	Opposite to case 6.

3 PLL (Permutation of the Last Layer)

In this part we have to move the pieces that make up the face opposite to the one solved in the 1st part, until the cube is solved (Figure 3).

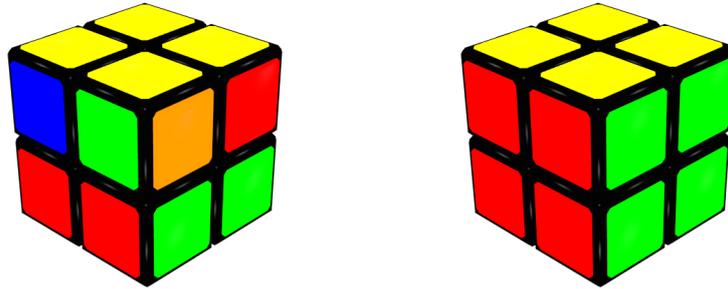


Figure 3: Example of the situation of the cube before PLL (left) and after PLL (right).

The algorithms of this part are below (Table 4). The colours of the stickers shown in these pictures are an example. The pieces not joined by arrows are well placed, and those with arrows must permutate according to them).

Table 4: Algorithms of the 3rd part (PLL)

Case	Figure	Algorithms	Comments
1		$R2B2RF - R'B2 - RF'R$	Also used in the 3x3x3 cube.
2		$R'FR' - B2R - F'R'B2R2$	Opposite to case 1.
3		$R2B2RF - R'B2 - RF'R$	The same as case 1; after doing it, turn the upper part of the cube to solve the cube.
4		$FRU'R'URUR'F' - RUR'UR'FRF'$	The 2 nd part of this algorithm actually is case 6 of the first part of this method.

This guide and much more at:

www.iberorubik.com