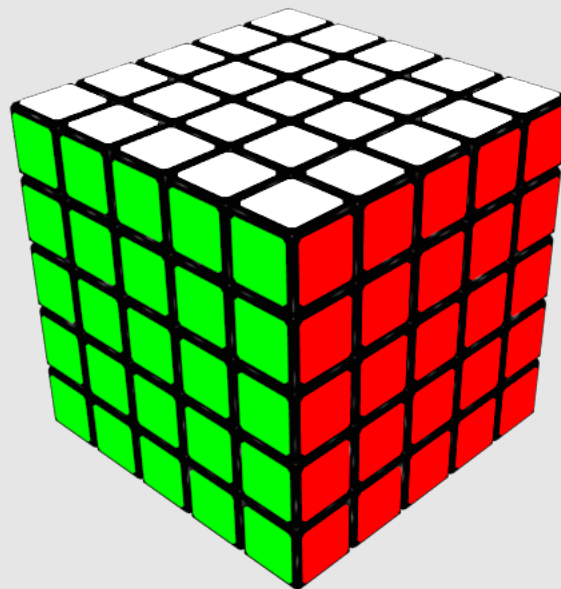


5x5x5 cube: Notation



1 Parts of the cube

1.1 Faces

Faces are the plane surfaces that contain 25 stickers. There are 6 faces.

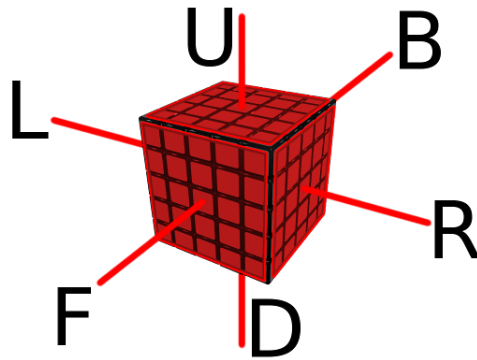
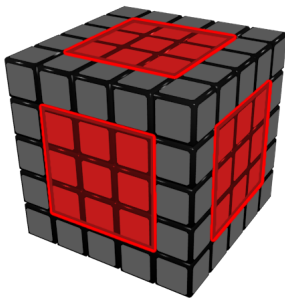


Figure 1: English notation of faces.

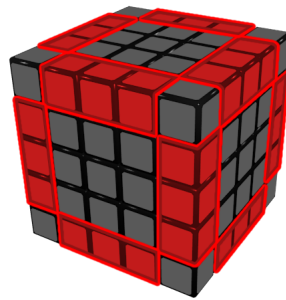
1.2 Centres, edges and corners

Centres



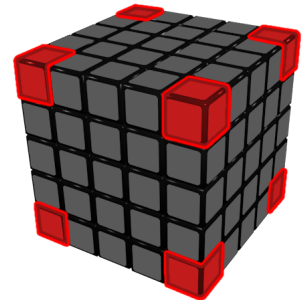
For us, centres are not the central pieces of each face, but the central 3x3-sticker surfaces that define the colour of every face. There are 6 centres, with 9 stickers each.

Edges



Likewise, we call edge to the three-piece group, with two stickers each. There are 12 edges in the cube.

Corners

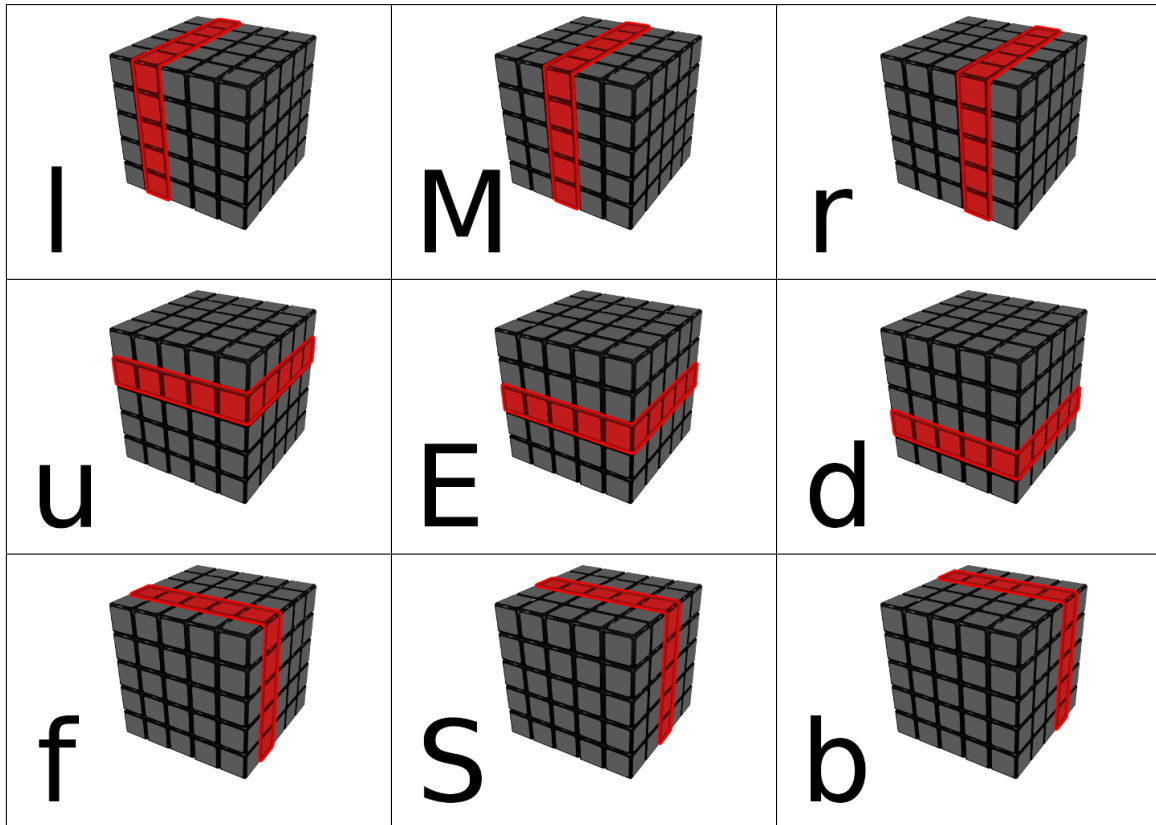


Corners are the pieces containing 3 stickers. There are 8 corners.

1.3 Inner layers

They are named the same way as the faces but with lower case letters (except for M, E y S layers, which are upper case because there can be no confusion with other layers).

Table 1: English notation of inner layers



2 Matrix notation

To simplify the understanding of certain algorithms, we use a matrix notation to point the position of a given piece in a given face. Said position is indicated by its row and its column, like this:

Piece position = (row, column)

Example: The piece located in the top right position is the (1,1); that means it is in row 1, column 1. Likewise, the piece located in row 3, column 2 is the piece called (3,2).

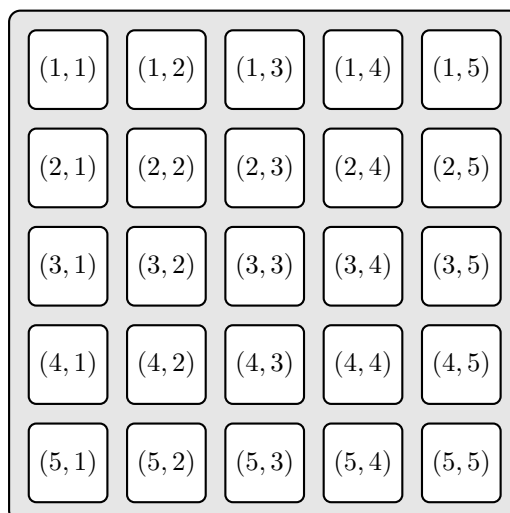
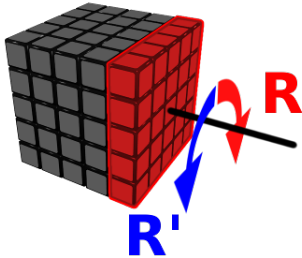


Figure 2: Scheme of matrix notation.

3 Turns and rotations of the whole cube

In the following pictures, red arrows indicate clockwise turns and blue arrows indicate counterclockwise turns.

Turns of outer layers



To indicate a clockwise turn, the letter of the face is written.

Example: R

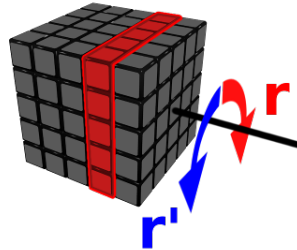
To indicate a counterclockwise turn, the letter of the face and an apostrophe are written.

Example: R'

To indicate a double turn, the letter of the face and a number 2 are written.

Example: R2

Turns of inner layers



The turns of inner layers are indicated just like the outer layers, but using lower case letters.

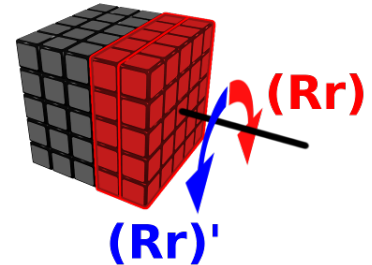
Examples:

Clockwise turn: r

Counterclockwise turn: r'

Double turn (180°): r2

Turns of inner and outer layers at same time



We can also turn both the inner and the outer layer at the same time; this is indicated with the upper case and the lower case letters in brackets. Examples:

Clockwise turn: (Rr)

Counterclockwise turn: (Rr)'

Double turn (180°): (Rr)2

As for the rotations of the whole cube, they are indicated with letters x , y and z as follows:

- Just the letter if it is a clockwise turn.
Example: x
- The letter and an apostrophe if it is a counterclockwise turn.
Example: z'
- The letter and a number 2 if it is a double turn.
Example: $y2$

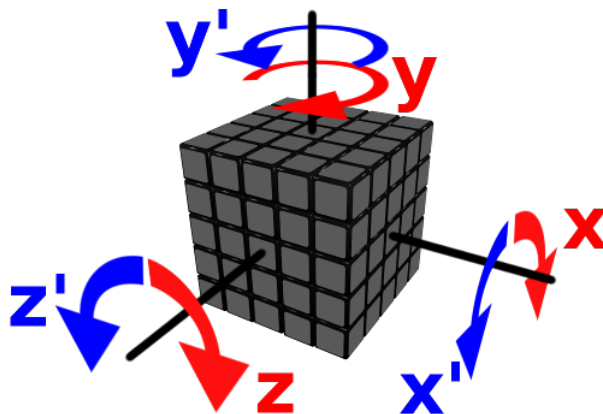


Figure 3: Rotations of the whole cube.

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www.iberorubik.com