## $4 \times 4 \times 4$ cube: notation


(c) (1) (2)

## Parts of the cube



The faces are the surfaces that contain 16 stickers. There are 6 faces.

Centers


The centers are stickers that define the surfaces colour. There are 6 centers, each one contains 4 stickers.

The edges are pieces that contain 2 stickers. There are 24 edges.


Corners


The corners are the pieces that contain 3 stickers. There are 8 corners.

## Inner layers

The inner layers are called the same way as faces but in lowercase.


## Turns and rotations



The blue arrow indicates clockwise direction. When we perform a movement we write the letterof the layer.
Example: U
The yellow arrow indicates counterclockwise direction. When we perform a movement we write the letter of the layer and an apostrophe. Example: L'
Another important case is the double turn; we turn this layer twice. Example: D2

Turns of inner layers


Indicating a turn of the inner layer works the same way as the outer layer; however we write the letter in lowercase.
Examples:
Clockwise direction: d
Counterclockwise direction: d' Double turn ( $180^{\circ}$ ): d2

Turns of both layers


We can turn together the inner and outer layers, with the letter of the outer and inner layers in brackets. Examples:
Clockwise direction: (Dd)
Counterclockwise direction: (Dd)'
Double turn (180 ${ }^{\circ}$ : (Dd)2

## Rotations of the whole cube



The blue arrow indicates clockwise direction in the 3 axes. When the rotation is clockwise we write the letter of the axis. Example: x
The yellow arrow indicates a counterclockwise direction. When the rotation is counterclockwise we write the letter of the axis and an apostrophe.

Example: z
When it is a double turn we write the letter of the axis followed by a number 2 .
Example: y2

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## www.iberorubik.com

