

Italian Calendar Cube Design 2

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WebSites	http://www.mementoslangues.fr/	http://www.randelshofer.ch/

Introduction

The Magic Cube was invented in 1974 by Hungarian-born **Ernő Rubik** and was later called the **Rubik's Cube**. An English calendar cube was subsequently invented and calendar cubes have been designed in many other languages since then. An **Italian Calendar Cube** is a 3x3x3 **Rubik's Cube** used as an **Italian Calendar**. There are **Virtual Cubes** that can be *virtually* rotated and twisted on a computer screen and **Real Cubes** that can only be *physically* rotated and twisted by hand. A **Texture** is laid down on a Virtual Cube whereas real **Stickers** are stuck down on a Real Cube. An Italian Calendar Cube is designed by placing letters, numerals and words on a texture which is then laid down on a Virtual Cube (see <http://www.randelshofer.ch/>).

Italian Language – Useful Links

http://en.wikipedia.org/wiki/Italian_language

<http://italian.about.com/library/fare/blfare109a.htm>

The date of the day can be displayed on a *selected* Cube Face by rotating and twisting some parts of the Cube. When this has been achieved, we say that the Cube has been *solved*. The following example shows the *initial* state of the Cube (Monday, January 01).

Virtual Italian Calendar Cube 2

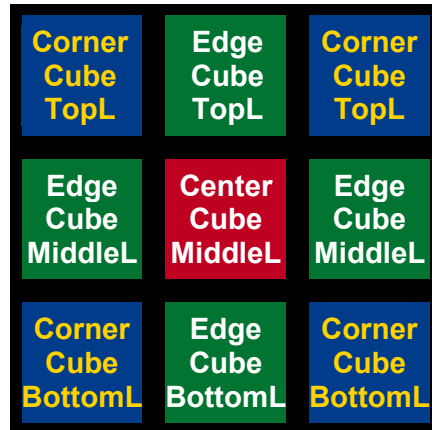
<p>Italian Calendar Cube Original design 2008 by André Boulouard and Walter Randelshofer</p>		<p>Copyright © 2008 André Boulouard Walter Randelshofer Werner Randelshofer All rights reserved.</p>	
<p>Italian Calendar Cube 2 Texture</p>	<p>Virtual Italian Calendar Cube 2</p>		

Design Particularities

The sum of left- and right-hand letters of the 12 Italian abbreviated months equals 18 and the number of center letters equals 8, making this calendar cube nearly as difficult to design as the Spanish calendar cube. The Italian calendar cube design is based on the design of the Spanish calendar cube invented by Alfonso Pérez Arnal and introduced in the Spanish forum ► [El Cubo de Rubik de la A a la Z](#). There is also a previous version of an Italian calendar cube designed by ► [Gaetano Zumbo](#), showing different locations for weekdays, days and months. The texture of these two cubes can be downloaded from <http://www.randelshofer.ch/>.

Terminology

In a 3x3x3 **Rubik's Cube**, there are 8 *Corner Cubes*, 12 *Edge Cubes*, 6 *Center Cubes* and 6 *Cube Faces*. There are also 4 Corner Cube faces, 4 Edge Cube faces and 1 Center Cube face *per Cube Face*, as shown below.



There are 1 face per Center Cube, 2 faces per Edge Cube and 3 faces per Corner Cube.

There are also 3 horizontal *Layers* called *Top*, *Middle* and *Bottom Layers*.

Cube Lexicon		
English	Français	Deutsch
Cube	Cube	Würfel
cube, cube	cube, petit cube	Würfeteil, Teil des Würfels
face	face	Seite, Seitenfläche
front face	face avant	vordere Seite, vorne
back face	face arrière	hintere Seite, hinten
left face	face gauche	linke Seite, links
right face	face droite	rechte Seite, rechts
top face	face supérieure	obere Seite, oben
bottom face	face inférieure	untere Seite, unten
sticker	étiquette (autocollante), plaquette	Kleber, Farbkleber
tile	tuile, plaquette	Plättchen, Farbplättchen
center cube, center	cube central, centre	Mittelwürfel, Mittelstein, Mitte
edge cube, edge	cube-arête, arête	Kantenwürfel, Kantenstein, Kante
corner cube, corner	cube de coin, coin	Eckwürfel, Eckstein, Ecke
layer	couronne	Schicht, Scheibe
top layer	couronne supérieure	obere Schicht, obere Scheibe
middle layer	couronne intermédiaire	mittlere Schicht, mittlere Scheibe, Mittelschicht, Mittelscheibe
bottom layer	couronne inférieure	untere Schicht, untere Scheibe
orientation, direction	orientation	Orientierung
to solve	résoudre	lösen, zusammen drehen
to twist	pivoter	drehen
to rotate	tourner, effectuer une rotation	drehen
clockwise	dans le sens horaire	im Uhrzeigersinn
anticlockwise, counter-clockwise	dans le sens anti-horaire	im Gegenuhrzeigersinn

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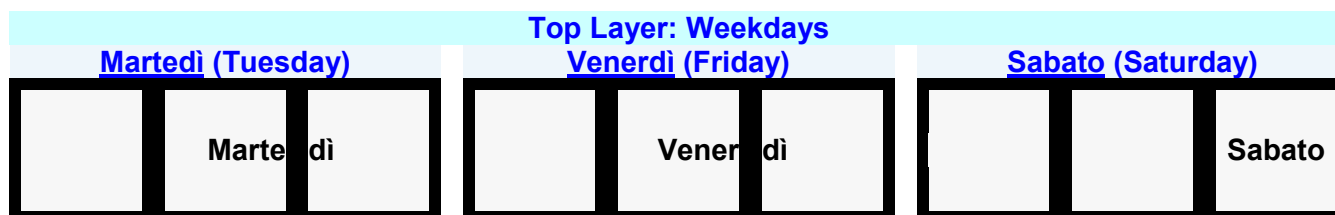
Italian Calendar

Italian Calendar				
Months			Weekdays	
English	Italian		English	Italian
January	<u>GEN</u> naio	Gennaio	Monday	Lunedì
February	<u>FEB</u> braio	Febbraio	Tuesday	Martedì
March	<u>MAR</u> zo	Marzo	Wednesday	Mercoledì
April	<u>APR</u> ile	Aprile	Thursday	Giovedì
May	<u>MAG</u> gio	Maggio	Friday	Venerdì
June	<u>GIU</u> gno	Giugno	Saturday	Sabato
July	<u>LUG</u> lio	Luglio	Sunday	Domenica
August	<u>AGO</u> sto	Agosto		
September	<u>SET</u> tembre	Settembre		
October	<u>OTT</u> obre	Ottobre		
November	<u>NOV</u> embre	Novembre		
December	<u>DIC</u> embre	Dicembre		
9 letters on Bottom Left corner cubes			G F M A L S O N D	
8 letters on Bottom Center cubes			E A P I U G T O	
9 letters on Bottom Right corner cubes			N B R G U O T V C	

Cube Layout

In this design, weekdays are displayed on **Top Layer**, days of the month on **Middle Layer** and months on **Bottom Layer**.

Top Layer Layout



Weekdays on the **Top Layer** are sorted out as follows:

- 1- 3 blanks on 1 corner cube
- 2- 5 **Top Center** weekday parts and 1 blank on 3 edge cubes: Lune, Marte, Mercole, Giove, Vener, blank_**TC**
- 3- 2 **Top Right** weekdays and 1 weekday part on 1 edge cube: Sabato, Domenica, di

Weekdays are now combined on corner cubes:

- 1- 1 **Top Left** blank corner cube
- 2- 3 **Top Center** edge cubes: (Lune,Marte), (Mercole,Giove), (Vener,blank_**TC**)
- 3- 1 **Top Right** corner cube: (Sabato,Domenica,di)

So, now there are 6 corner and 9 edge cubes left that can be used for the 2 remaining layers.

Middle Layer Layout



Numbers on the **Middle Layer** are sorted out as follows:

- 1- 4 **M**iddle **L**eft numbers and 1 blank on edge cubes: 0, 1, 2, 3, blank_ **ML/MR**
- 2- 7 **M**iddle **C**enter numbers on center cubes: 0, 1, 2, 3, 4, 6/9
- 3- 3 **M**iddle **R**ight numbers, 1 blank on edge cubes: 5, 7, 8, blank_ **ML/MR**

Letters are now *logically* combined on edge cubes:

- 1- 3 **M**iddle **L**eft edge cubes: (0,1), (2,blank_ **ML/MR**), (3,blank_ **TC**)
- 2- 2 **M**iddle **R**ight edge cubes: (5,7), (8,blank_ **ML/MR**)

So, now there are 6 corner and 4 edge cubes left that can be used for the Bottom Layer.

Bottom Layer Layout



Letters on the **Bottom Layer** are sorted out as follows:

- 1- 9 **B**ottom **L**eft letters on corner cubes: G, F, M, A, L, S, O, N, D
- 2- 8 **B**ottom **C**enter letters on edge cubes: E, A, P, I, U, G, T, O
- 3- 9 **B**ottom **R**ight letters on corner cubes: N, B, R, G, U, O, T, V, C

Letters are now *logically* combined on corner and edge cubes:

- 1- 3 **B**ottom **L**eft corner cubes: (G,F,M), (A,L,S), (O,N,D)
- 2- 4 **B**ottom **C**enter edge cubes: (E,A), (P,I), (U,G), (T,O)
- 3- 3 **B**ottom **R**ight corner cubes: (N,B,R), (G,O,T), (U,V,C)

Italian Calendar Cube 2 – Layout Table

Reading from Left to Right

Top Left – Corner cubes	Top Center – Edge cube	Top Right – Corner cube
blank	Lune, Marte, Mercole, Giove, Vener, blank	dì, Domenica, Sabato
Middle Left – Edge cubes	Middle Center – Center cubes	Middle Right – Edge cubes
0, 1, 2, 3, blank	0, 1, 2, 3, 4, 6/9	5, 7, 8, blank
Bottom Left – Corner cubes	Bottom Center – Edge cubes	Bottom Right – Corner cubes
G, F, M, A, L, S, O, N, D	E, A, P, I, U, G, T, O	N, B, R, G, U, O, T, V, C

Solving an Italian Calendar Cube 2 Step by Step

In this example, a step by step solving process is applied to the Italian Calendar Cube 2, just described before. Note that we only need to solve a *single* Face out of six. We will solve a Face for Monday, January 01.

Solve the Cross First

Standard Rubik's Cube Solving

Then Solve the Corner Cubes

Standard Rubik's Cube Solving

Step 1

	1	

Center 1 on Front Face

Step 2

	Lune	
	1	

Top Layer: Edge Lune

Step 3

	Lune	
	1	

Middle Layer: Edge Cube Blank

Step 4

	Lune	
	1	
	E	

Bottom Layer: Edge Cube E

Step 5

	Lune	
0	1	
	E	

Middle Layer: Edge Cube 0

Step 6

	Lune	
0	1	
	E	

Top Layer: Corner Cube Blank

Step 7

	Lune	dì
0	1	
	E	

Top Layer: Corner Cube dì

Step 8

	Lune	dì
0	1	
	E	N

Bottom Layer: Corner Cube N

Step 9

	Lune	dì
0	1	
G	E	N

Bottom Layer: Corner Cube G

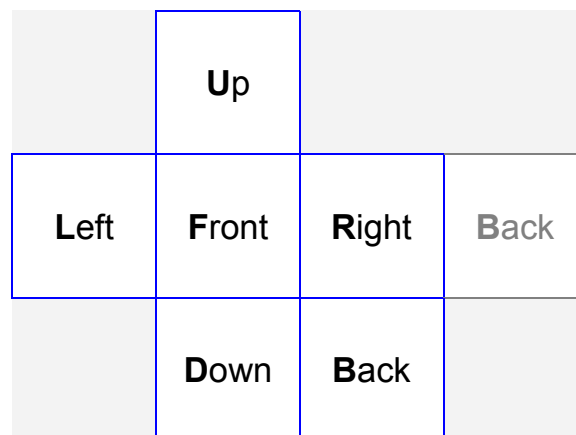
Step 10

	Lune	dì
0	1	
G	E	N

That's it !

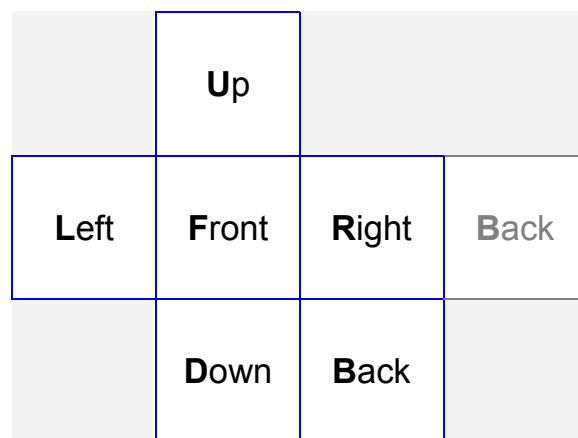
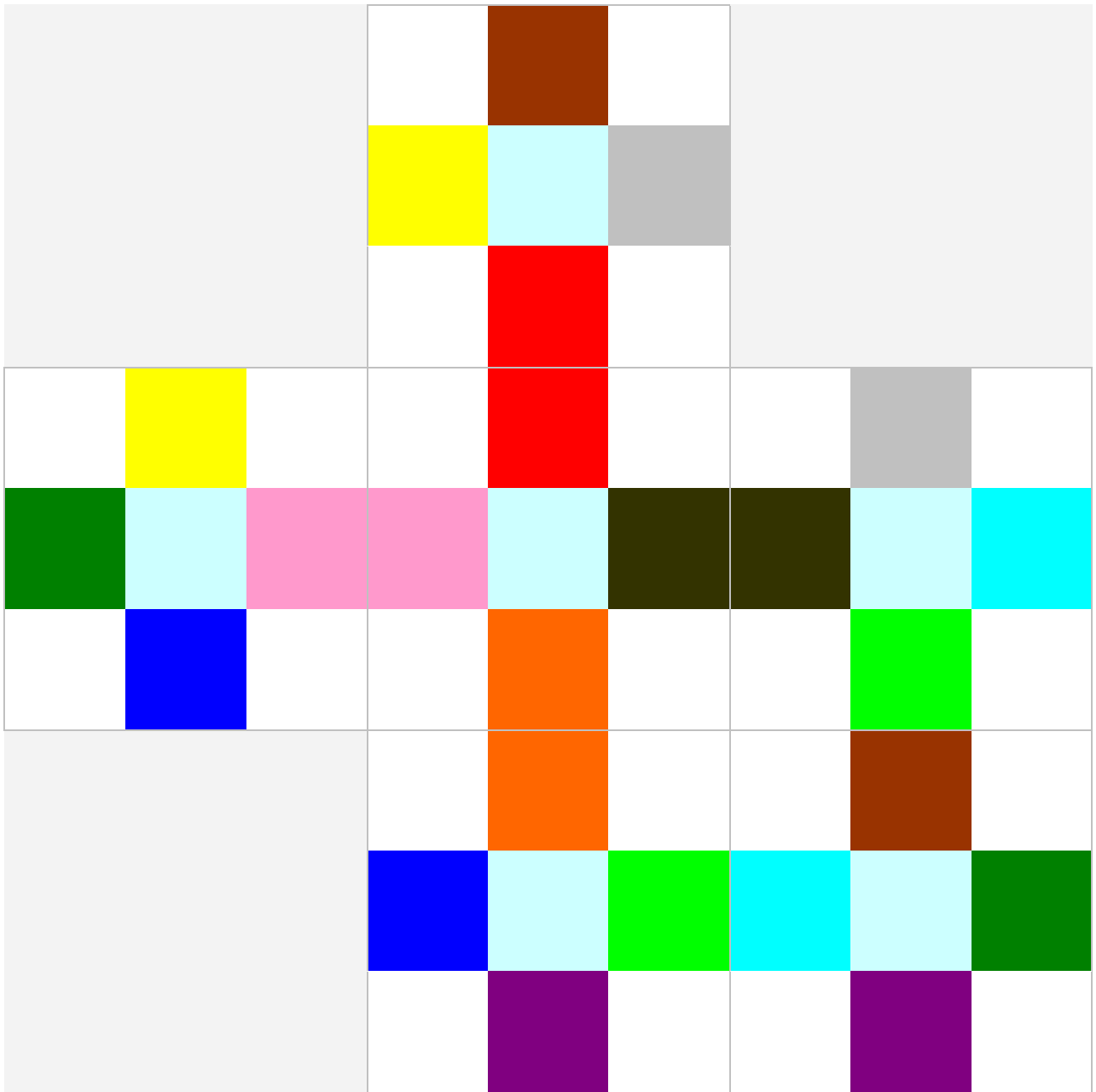
Corner Cubes Final Check

There are 8 Corner Cubes and 3 faces per Corner Cube. In the diagram below, each Corner Cube is displayed in 8 different colors and with the same color applied to each of its 3 faces. This diagram can be used as a convenient *visual aid* to check Design Rules (DRC).



Edge Cubes Final Check

There are 12 Edge Cubes and 2 faces per Edge Cube. In the diagram below, each Edge Cube is displayed in 12 different colors and with the same color applied to each of its 2 faces. This diagram can be used as a convenient *visual aid* to check Design Rules (DRC).



Texture Template

This is a texture template that can be printed out and used for writing down numbers and letters by hand *prior to* texture design. All is needed are pencil, rubber...and time.

