

Ukrainian Calendar Cube Design

All textures shown in the present document are copyright protected under the [Creative Commons License](http://creativecommons.org/licenses/by/3.0/) terms.

Designers	André Boulouard	Walter Randelshofer
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 **Ukrainian Calendar Cube** is a 3x3x3 **Rubik's Cube** used as an **Ukrainian 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 Ukrainian 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/>).

Ukrainian Language – Useful Links

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

<http://moon-aka-sun.livejournal.com/205107.html?thread=573235>

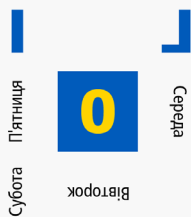
Ukrainian (українська мо́ва, *ukrayins'ka mova*, [ukrɑˈjinisʲkɑ ˈmɔvɑ]) is a language of the East Slavic subgroup of the Slavic languages. It is the official state language of Ukraine. Written Ukrainian uses a Cyrillic alphabet. The language shares some vocabulary with the languages of the neighboring Slavic nations, most notably with Polish, Slovak in the West and Belarusian, Russian in the North and the East.

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).

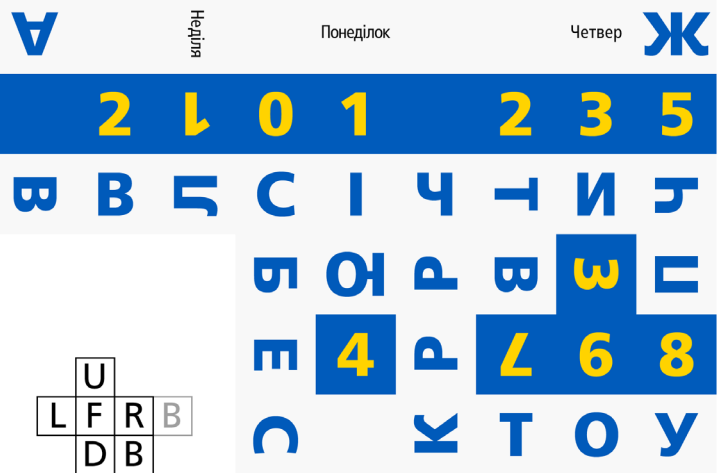
Virtual Ukrainian Calendar Cube

Ukrainian Calendar Cube

Original design 2009
by André Boulouard
and Walter Randelshofer



Copyright © 2009
André Boulouard
Walter Randelshofer
Werner Randelshofer
All rights reserved.



Ukrainian Calendar Cube Texture



Virtual Ukrainian Calendar Cube

Ukrainian Calendar Cube Design

Ukrainian Calendar

Ukrainian Calendar				
Months			Weekdays	
English	Ukrainian		English	Ukrainian
January	<u>С</u> ІЧень	Січень	Monday	Понеділок
February	<u>Л</u> ЮТий	Лютий	Tuesday	Вівторок
March	<u>Б</u> ЕРезень	Березень	Wednesday	Середа
April	<u>К</u> ВІтень	Квітень	Thursday	Четвер
May	<u>Т</u> РАвень	Травень	Friday	П'ятниця
June	<u>Ч</u> ЕРвень	Червень	Saturday	Субота
July	<u>Л</u> ИПень	Липень	Sunday	Неділя
August	<u>С</u> ЕРпень	Серпень		
September	<u>В</u> ЕРесень	Вересень		
October	<u>Ж</u> ОВтень	Жовтень		
November	<u>Л</u> ИСтопад	Листопад		
December	<u>Г</u> РУдень	Грудень		
9 letters on Bottom Left corner cubes			С Л Б К Т Ч В Ж Г	
7 letters on Bottom Center cubes			І Ю Е В Р І О	
9 letters on Bottom Right corner cubes			Ч Т Р І А П В С У	

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- 2 **T**op **L**eft weekdays and 1 blank on 1 corner cube: Субота, Неділя, blank_ **TL/TR**
- 2- 5 **T**op **C**enter weekdays and 1 blank on 3 edge cubes: Понеділок, Вівторок, Середа, Четвер, П'ятниця, blank_ **TC**
- 3- 3 blanks on 1 corner cube

Weekdays are now *logically* combined on corner cubes:

- 1- 1 **T**op **L**eft corner cube: (Субота, Неділя, blank_ **TL/TR**)
- 2- 3 **T**op **C**enter edge cubes: (Понеділок, Вівторок), (Середа, Четвер), (П'ятниця, blank_ **TC**)
- 3- 1 **T**op **R**ight corner cube with blanks

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 **Middle Left** numbers and 1 blank on edge cubes: 0, 1, 2, 3, blank_ **ML/MR**
- 2- 7 **Middle Center** numbers on center cubes: 0, 1, 2, 3, 4, 6/9
- 3- 3 **Middle Right** numbers and 1 blank on edge cubes: 5, 7, 8, blank_ **ML/MR**

Numbers are now *logically* combined on edge cubes:

- 1- 3 **Middle Left** edge cubes: (0,1), (2,blank_ **ML/MR**), (3,blank_ **ML/MR**)
- 2- 2 **Middle Right** 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 **Bottom Left** letters on corner cubes: С, Л, Б, К, Т, Ч, В, Ж, Г
- 2- 7 **Bottom Center** letters on edge cubes: І, Ю, Е, В, Р, И, О
- 3- 9 **Bottom Right** letters on corner cubes: Ч, Т, Р, І, А, П, В, С, У

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

- 1- 3 **Bottom Left** corner cubes: (С,Л,Б), (К,Т,Ч), (В,Ж,Г)
- 2- 4 **Bottom Center** edge cubes: (І,Ю), (Е,В), (Р,И), (О,blank_ **BC**)
- 3- 3 **Bottom Right** corner cubes: (Ч,Т,Р), (І,А,П), (В,С,У)

Ukrainian Calendar Cube – Layout Table

Reading from Left to Right

Top Left – Corner cubes	Top Center – Edge cube	Top Right – Corner cube
Субота, Неділя, blank	Понеділок, Вівторок, Серeda, Четвер, П'ятниця, blank	blank
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
С, Л, Б, К, Т, Ч, В, Ж, Г	І, Ю, Е, В, Р, И, О, blank	Ч, Т, Р, І, А, П, В, С, У

Solving an Ukrainian Calendar Cube Step by Step

In this example, a step by step solving process is applied to the Ukrainian Calendar Cube, 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

	Поне- ділок	
	1	

Top Layer: Edge Понеділок

Step 3

	Поне- ділок	
	1	

Middle Layer: Edge Cube Blank

Step 4

	Поне- ділок	
	1	
	1	

Bottom Layer: Edge Cube 1

Step 5

	Поне-ділок	
0	1	
	І	

Middle Layer: Edge Cube 0

Step 6

	Поне-ділок	
0	1	
	І	

Top Layer: Corner Cube Blank

Step 7

	Поне-ділок	
0	1	
	І	

Top Layer: Corner Cube Blank

Step 8

	Поне-ділок	
0	1	
	І	Ч

Bottom Layer: Corner Cube Ч

Step 9

	Поне-ділок	
0	1	
С	І	Ч

Bottom Layer: Corner Cube С

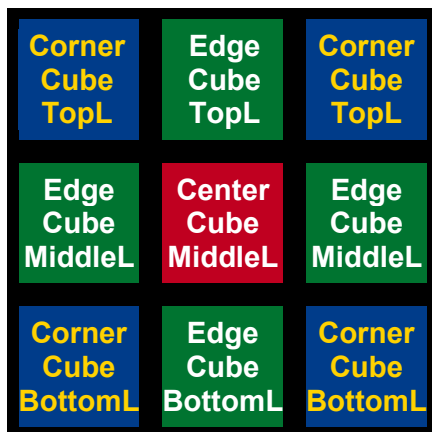
Step 10

	Поне-ділок	
0	1	
С	І	Ч

That's it !

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.



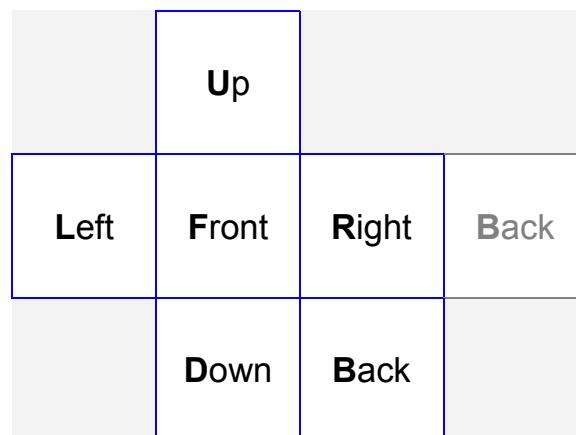
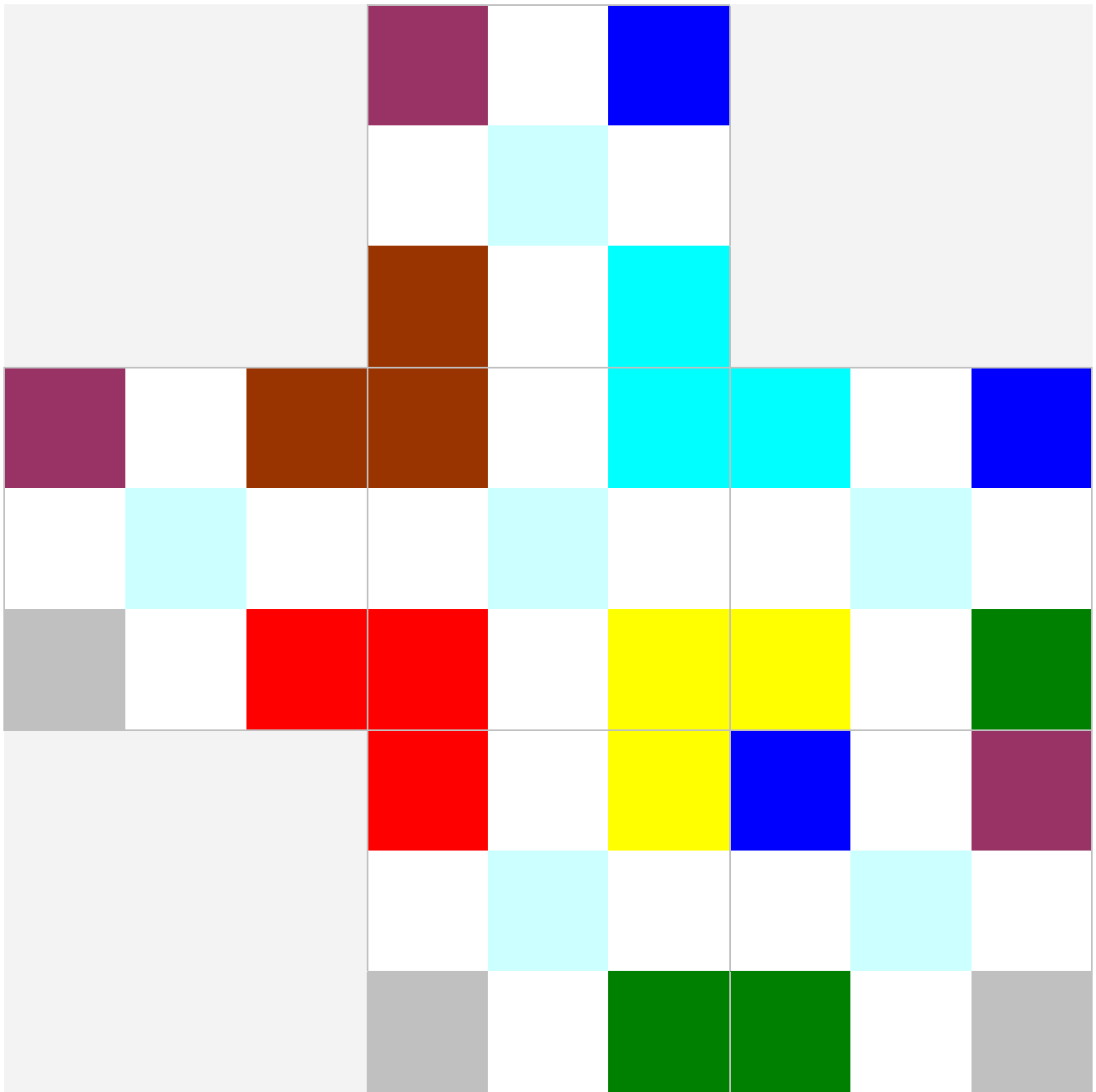
There are 1 face per Center Cube, 2 faces per Edge Cube and 3 faces per Corner Cube.

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

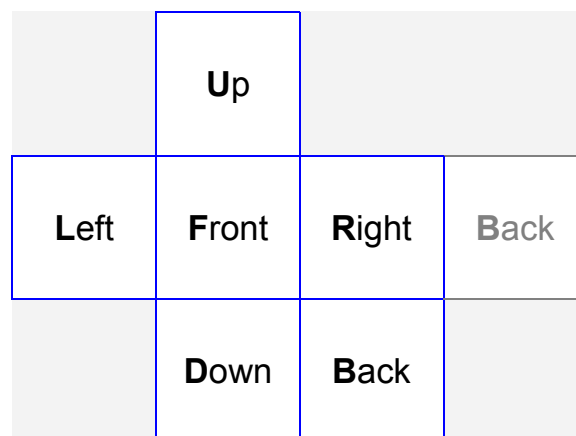
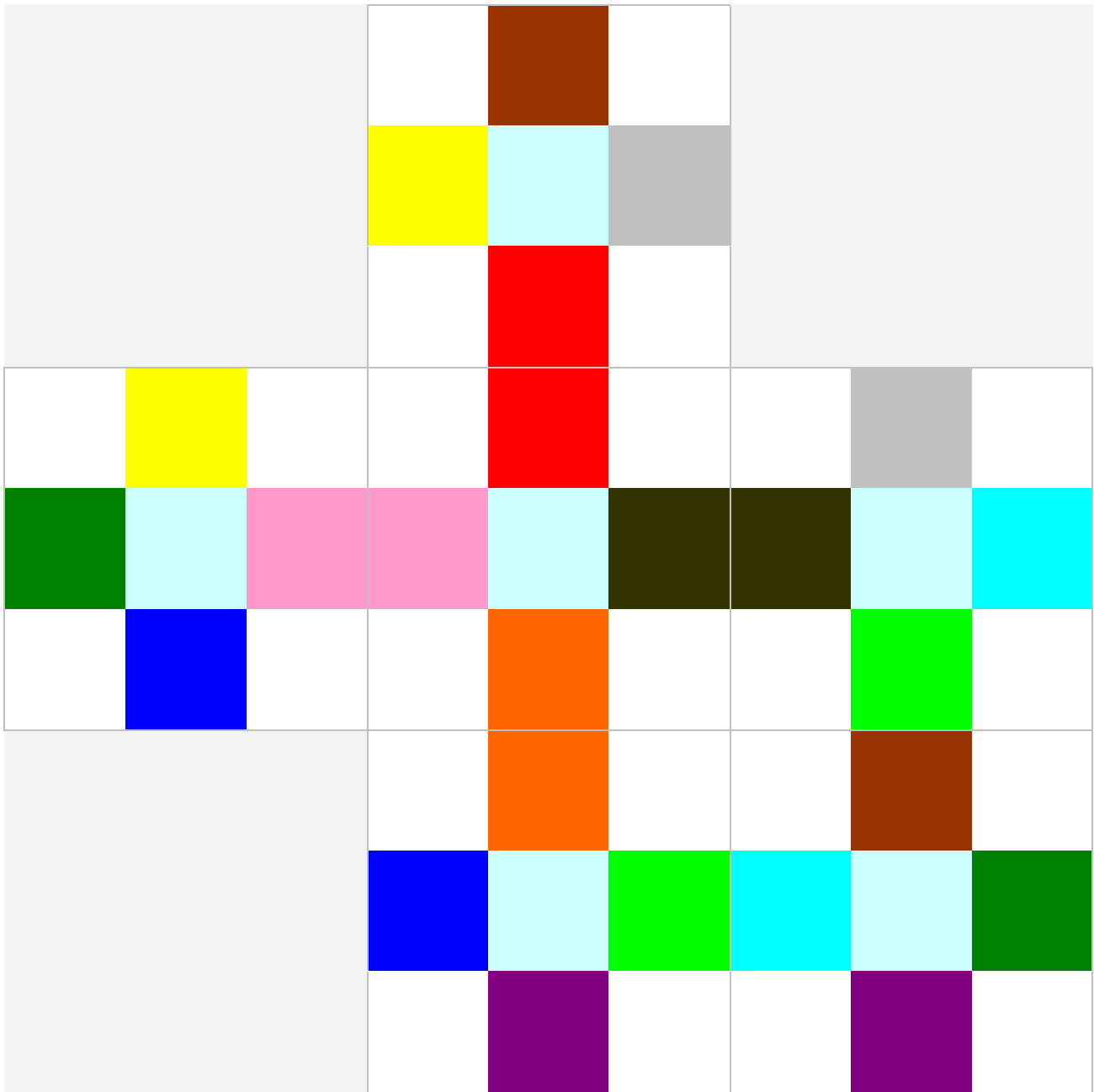
Corner Cubes Final Check

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.

