

# V6 Chinese MemoQube Design

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WebSites	<a href="http://www.mementoslangues.fr/">http://www.mementoslangues.fr/</a>	<a href="http://www.randelshofer.ch/">http://www.randelshofer.ch/</a>

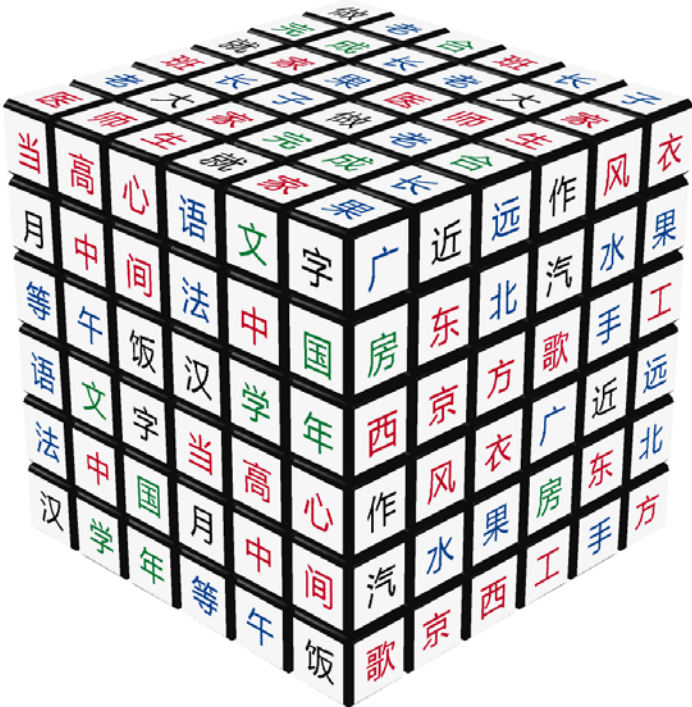
## Introduction

A **Mǐ MemoQube** is a 3x3x3 **Rubik's Cube** used to display Chinese characters that can be combined in twos. Characters are combined on each of the 6 faces of the cube after a structure that looks like the strokes of the Chinese character **Mǐ** 米, which means 'Rice'.

A **Wáng MemoQube** is a 3x3x3 **Rubik's Cube** used to display Chinese characters that can be combined in twos. Characters are combined on each of the 6 faces of the cube after a structure that looks like the strokes of the Chinese character **Wáng** 王, which means 'King'.

These cubes can be used as visual memorizing aids for learning *selected* sets of Chinese characters and words (see [MiMemoQubeDesign](#) and [WangMemoQubeDesign](#) for more details).

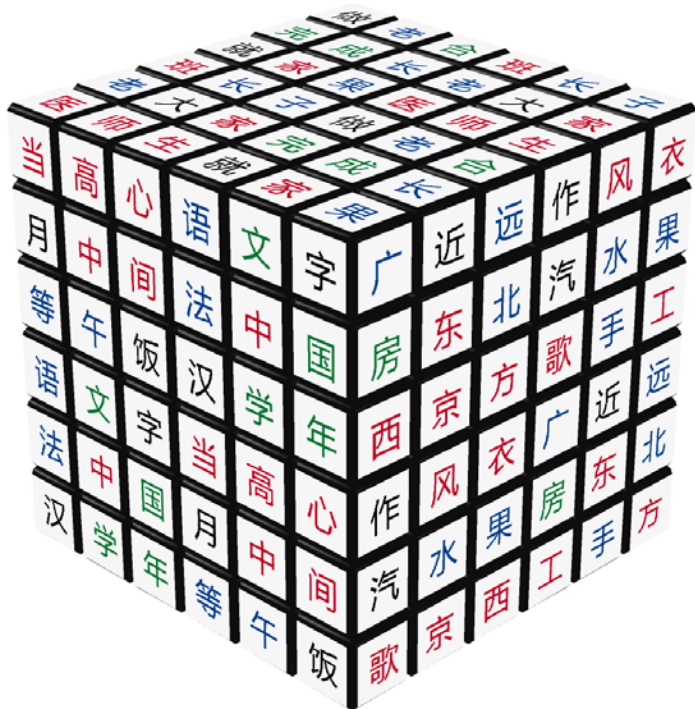
A **V6 Chinese MemoQube** is a **6x6x6 Cube** used to display Chinese characters where the contents of **Mǐ** and **Wáng** MemoQubes has been re-used.

V6 Chinese MemoQube (Initial State) – Simplified Chinese Characters	
<p>做 老 合 班 长 子                      完 成 长 老 大 家                      就 家 果 医 师 生                      班 长 子 做 老 合                      老 大 家 完 成 长                      医 师 生 就 家 果</p> <p>天 田 种 好 看 见 当 高 心 语 文 字 广 近 远 作 风 衣                      边 地 区 教 书 包 月 中 间 法 中 国 房 东 北 汽 水 果                      主 位 图 药 店 主 等 午 饭 汉 学 年 西 京 方 歌 手 工                      好 看 见 天 田 种 语 文 字 当 高 心 作 风 衣 广 近 远                      教 书 包 边 地 区 法 中 国 月 中 间 汽 水 果 房 东 北                      药 店 主 主 位 图 汉 学 年 等 午 饭 歌 手 工 西 京 方</p> <p>用 公 看 日 本 月 出 大 贵 黄 河 山                      办 法 文 名 人 民 本 国 歌 出 口 才                      院 语 学 难 道 路 民 外 画 声 音 乐                      日 本 月 用 公 看 黄 河 山 出 大 贵                      名 人 民 办 法 文 出 口 才 本 国 歌                      难 道 路 院 语 学 声 音 乐 民 外 画</p>	
V6 Chinese MemoQube Texture	V6 Chinese MemoQube
Download <b>CubeTwister</b> from: <a href="http://www.randelshofer.ch/">http://www.randelshofer.ch/</a>	

There are four 3x3 **Mǐ** and **Wáng** MemoQube structures on each V6 face as shown on the layout below. In addition, 'connecting' words between **Mǐ** and **Wáng** structures can also be displayed.

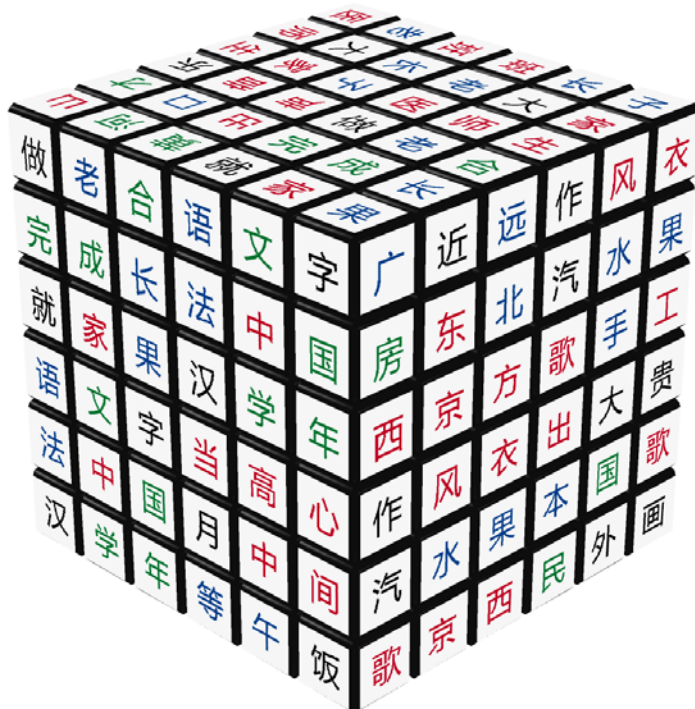
<b>Mǐ</b>	<b>Wáng</b>
(3x3)	(3x3)
<b>Wáng</b>	<b>Mǐ</b>
(3x3)	(3x3)

## V6 Chinese MemoQube – Block Moves



Initial State

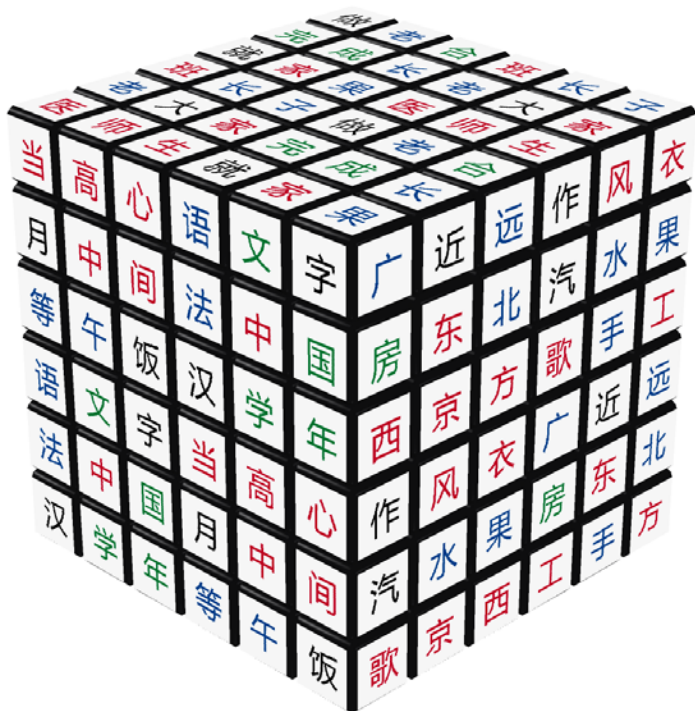
2 Top Left and Bottom Right identical *Mǐ* Blocks  
2 Top Right and Bottom Left identical *Wáng* Blocks



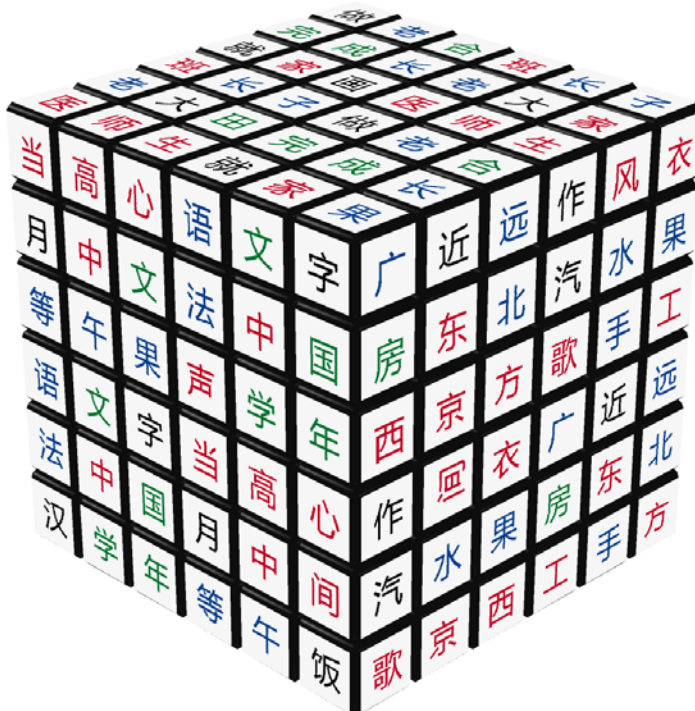
1- *Mǐ* Block move from U [TL, N] to F [TL, N]

Algorithm: T3B' T3L' T3B T3L

## V6 Chinese MemoQube – Character Moves



Initial State



2-Character move to Front Face

Algorithm: NF N3L NF' N3U2 N3L' N3U2

中间 (*zhōngjiān*) is replaced with 中文 (*zhōngwén*) in the Top Left *Mǐ* Block

汉学 (*hànxué*) is replaced with 声学 (*shēngxué*) in the Top Right *Wáng* Block



## Connecting Words

Connecting words can be displayed for some valid character combinations between *Mǐ* and *Wáng* blocks. Characters can be connected horizontally or vertically between blocks.

### V6 Chinese MemoQube – Connecting Words

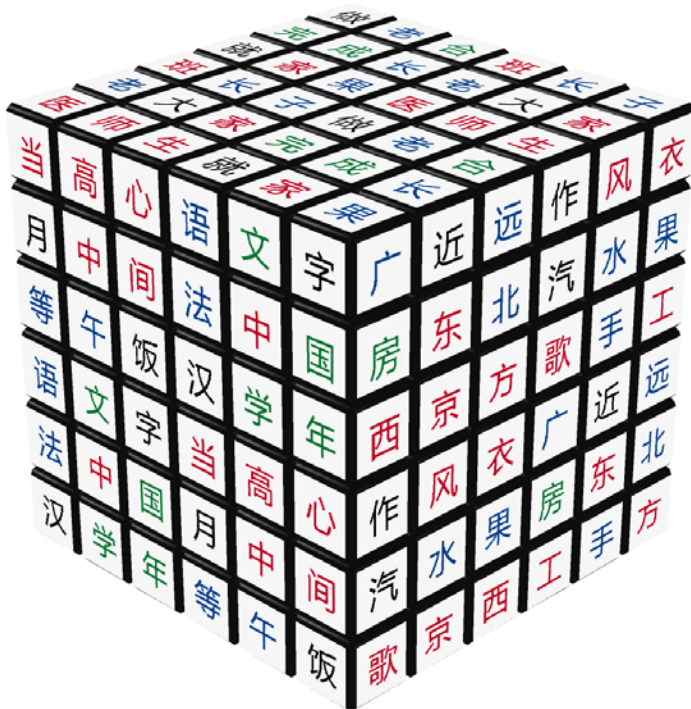
#### Horizontally connecting words between blocks

<i>Mǐ</i> – U [MR, N]	<i>Wáng</i> – U [ML, N]	长老( <i>zhǎnglǎo</i> ) elder
<i>Mǐ</i> – D [MR, N]	<i>Wáng</i> – F [ML, N]	文法( <i>wénfǎ</i> ) grammar
<i>Mǐ</i> – U [TL, N]	<i>Wáng</i> – R [TR, N]	合作( <i>hézuò</i> ) to cooperate, to work together
<i>Wáng</i> – L [MR, N]	<i>Mǐ</i> – D [ML, N]	包办( <i>bāobàn</i> ) to take care of everything concerning a job
<i>Wáng</i> – D [MR, N]	<i>Mǐ</i> – R [ML, N]	民房( <i>mínfáng</i> ) house owned by a citizen, private house
<i>Wáng</i> – D [MR, N]	<i>Mǐ</i> – D [ML, N]	民办( <i>mínbàn</i> ) managed by a collectivity

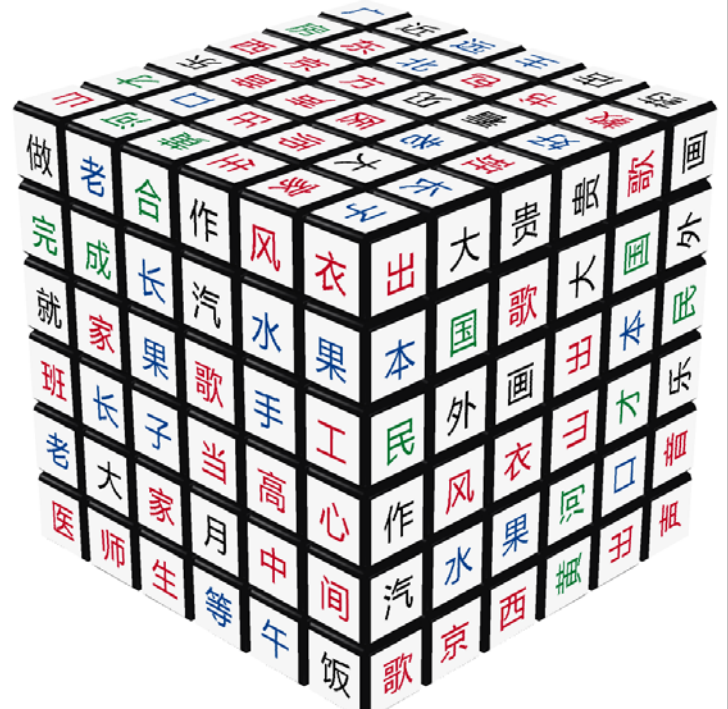
#### Vertically connecting words between blocks

<i>Mǐ</i> – U [BC, N]	<i>Wáng</i> – U [TC, N]	家长( <i>jiāzhǎng</i> ) head of the family, parents
<i>Mǐ</i> – D [BC, N]	<i>Wáng</i> – F [TC, N]	语文( <i>yǔwén</i> ) language, literature
<i>Mǐ</i> – B [BC, N]	<i>Wáng</i> – U [TC, N]	外长( <i>wàizhǎng</i> ) Minister of Foreign Affairs
<i>Mǐ</i> – B [BC, N]	<i>Wáng</i> – F [TC, N]	外文( <i>wàiwén</i> ) foreign language (written)
<i>Wáng</i> – D [BL, N]	<i>Mǐ</i> – U [TL, N]	难做( <i>nánzuò</i> ) difficult to make, to fabricate
<i>Wáng</i> – D [BL, N]	<i>Mǐ</i> – D [TL, N]	难用( <i>nányòng</i> ) difficult to use

### V6 Chinese MemoQube – Block Moves & Connecting Words



Initial State



Two Connecting Words on Front Face

Algorithm: T3B' T3L' T3B T3L2 T3U T3L' T3B' T3D' T3B T3D

Horizontal connection: 合作(*hézuò*) to cooperate

Vertical connection: 家长(*jiāzhǎng*) head of the family

## V6 3x3 Block Move Algorithms

Front face blocks other than the destination block are left unchanged.

Table 1 – V6 3x3 Block Move Algorithms: From F/U/L/D/R/B to F [TL, N]					
To F [TL, N]		From F		Algorithms	Moves
Location	Orientation	Location	Orientation		
TL	N	TL	N	No move	0
TL	N	TR	E	T3U' T3L' T3B T3L	4
TL	N	BR	S	T3D T3U T3B2 T3U' T3D' / T3R' T3L' T3B2 T3L T3R	5
TL	N	BL	W	T3L T3U T3B' T3U'	4
To F [TL, N]		From U		Algorithms	Moves
Location	Orientation	Location	Orientation		
TL	N	TL	N	T3B' T3L' T3B T3L	4
TL	N	TR	E	T3B' T3U T3B2 T3U'	4
TL	N	BR	S	T3U' T3B T3U'	3
TL	N	BL	W	T3U T3B2 T3U' T3L' T3B2 T3L	6
To F [TL, N]		From L		Algorithms	Moves
Location	Orientation	Location	Orientation		
TL	N	TL	N	T3B T3U T3B' T3U'	4
TL	N	TR	E	T3L' T3B2 T3L T3U T3B2 T3U'	6
TL	N	BR	S	T3L T3B' T3L	3
TL	N	BL	W	T3B2 T3L' T3B T3L	4
To F [TL, N]		From D		Algorithms	Moves
Location	Orientation	Location	Orientation		
TL	N	TL	N	T3L'	1
TL	N	TR	E	T3R' T3B T3U2 T3R	4
TL	N	BR	S	T3L' T3B2 T3L	3
TL	N	BL	W	T3U T3B' T3U'	3
To F [TL, N]		From R		Algorithms	Moves
Location	Orientation	Location	Orientation		
TL	N	TL	N	T3U	1
TL	N	TR	E	T3L' T3B T3L	3
TL	N	BR	S	T3U T3B2 T3U'	3
TL	N	BL	W	T3R' T3B2 T3U' T3R	4
To F [TL, N]		From B		Algorithms	Moves
Location	Orientation	Location	Orientation		
TL	N	TL	N	T3B T3U T3B' T3U' T3L' T3B2 T3L	7
TL	N	TR	E	T3U T3B' T3U' T3L' T3B2 T3L	6
TL	N	BR	S	T3B' T3U T3B' T3U' T3L' T3B2 T3L	7
TL	N	BL	W	T3B2 T3U T3B' T3U' T3L' T3B2 T3L	7

**Table 2 – V6 3x3 Block Move Algorithms: From F/U/L/D/R/B to F [TR, N]**

<b>To F [TR, N]</b>		<b>From F</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
TR	N	TL	W	T3U T3R T3B' T3R'	4
TR	N	TR	N	No move	0
TR	N	BR	E	T3D T3B2 T3D' T3R T3B' T3R'	6
TR	N	BL	S	T3D' T3U' T3B2 T3U T3D	5
<b>To F [TR, N]</b>		<b>From U</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
TR	N	TL	W	T3B2 T3U' T3B T3U	4
TR	N	TR	N	T3B T3R T3B' T3R'	4
TR	N	BR	E	T3U' T3B2 T3U T3R T3B2 T3R'	6
TR	N	BL	S	T3U T3B' T3U	3
<b>To F [TR, N]</b>		<b>From L</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
TR	N	TL	W	T3R T3B' T3R'	3
TR	N	TR	N	T3U'	1
TR	N	BR	E	T3L T3B2 T3U T3L'	4
TR	N	BL	S	T3U' T3B2 T3U	3
<b>To F [TR, N]</b>		<b>From D</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
TR	N	TL	W	T3D' T3R T3B2 T3R' T3D	5
TR	N	TR	N	T3R	1
TR	N	BR	E	T3U' T3B T3U	3
TR	N	BL	S	T3R T3B2 T3R'	3
<b>To F [TR, N]</b>		<b>From R</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
TR	N	TL	W	T3R T3B2 T3R' T3U' T3B2 T3U	6
TR	N	TR	N	T3L T3U T3L'	3
TR	N	BR	E	T3B' T3R T3B2 T3R'	4
TR	N	BL	S	T3R2 T3L T3U T3L'	4
<b>To F [TR, N]</b>		<b>From B</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
TR	N	TL	W	T3U' T3B T3U T3R T3B2 T3R'	6
TR	N	TR	N	T3B' T3U' T3B T3U T3R T3B2 T3R'	7
TR	N	BR	E	T3B2 T3U' T3B T3U T3R T3B2 T3R'	7
TR	N	BL	S	T3B T3U' T3B T3U T3R T3B2 T3R'	7

**Table 3 – V6 3x3 Block Move Algorithms: From F/U/L/D/R/B to F [BR, N]**

<b>To F [BR, N]</b>		<b>From F</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BR	N	TL	S	T3U T3D T3B2 T3D' T3U'	5
BR	N	TR	W	T3R T3D T3B' T3D'	4
BR	N	BR	N	No move	0
BR	N	BL	E	T3D' T3R' T3B T3R	4
<b>To F [BR, N]</b>		<b>From U</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BR	N	TL	S	T3R' T3B2 T3R	3
BR	N	TR	W	T3D T3B' T3D'	3
BR	N	BR	N	T3R'	1
BR	N	BL	E	T3U T3R' T3B2 T3R T3U'	5
<b>To F [BR, N]</b>		<b>From L</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BR	N	TL	S	T3D T3B2 T3D'	3
BR	N	TR	W	T3L' T3D T3B2 T3D' T3L	5
BR	N	BR	N	T3D	1
BR	N	BL	E	T3R' T3B T3R	3
<b>To F [BR, N]</b>		<b>From D</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BR	N	TL	S	T3D2 T3B' T3R' T3B T3R	5
BR	N	TR	W	T3D T3B2 T3D' T3R' T3B2 T3R	6
BR	N	BR	N	T3B' T3R' T3B T3R	4
BR	N	BL	E	T3B' T3D T3B2 T3D'	4
<b>To F [BR, N]</b>		<b>From R</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BR	N	TL	S	T3R T3B' T3R	3
BR	N	TR	W	T3B2 T3R' T3B T3R	4
BR	N	BR	N	T3B2 T3D T3B2 T3D'	4
BR	N	BL	E	T3R' T3B2 T3R T3D T3B2 T3D'	6
<b>To F [BR, N]</b>		<b>From B</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BR	N	TL	S	T3B' T3D T3B' T3D' TR' T3B2 TR	7
BR	N	TR	W	T3B2 T3D T3B' T3D' TR' T3B2 TR	7
BR	N	BR	N	T3B T3D T3B' T3D' TR' T3B2 TR	7
BR	N	BL	E	T3D T3B' T3D' TR' T3B2 TR	6

**Table 4 – V6 3x3 Block Move Algorithms: From F/U/L/D/R/B to F [BL, N]**

<b>To F [BL, N]</b>		<b>From F</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BL	N	TL	E	T3L' T3D' T3B T3D	4
BL	N	TR	S	T3U' T3D' T3B2 T3D T3U	5
BL	N	BR	W	T3D T3L T3B' T3L'	4
BL	N	BL	N	No move	0
<b>To F [BL, N]</b>		<b>From U</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BL	N	TL	E	T3D' T3B T3D	3
BL	N	TR	S	T3L T3B2 T3L'	3
BL	N	BR	W	T3L T3U' T3B2 T3L'	4
BL	N	BL	N	T3L	1
<b>To F [BL, N]</b>		<b>From L</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BL	N	TL	E	T3B' T3L T3B2 T3L'	4
BL	N	TR	S	T3L2 T3B' T3D' T3B T3D	5
BL	N	BR	W	T3L T3B2 T3L' T3D' T3B2 T3D	6
BL	N	BL	N	T3B' T3D' T3B T3D	4
<b>To F [BL, N]</b>		<b>From D</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BL	N	TL	E	T3D' T3B2 T3D T3L T3B2 T3L'	6
BL	N	TR	S	T3D2 T3B2 T3L T3B2 T3L'	5
BL	N	BR	W	T3B T3D' T3B2 T3D	4
BL	N	BL	N	T3B T3L T3B' T3L'	4
<b>To F [BL, N]</b>		<b>From R</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BL	N	TL	E	T3R T3B2 TD T3R'	4
BL	N	TR	S	T3D' T3B2 T3D	3
BL	N	BR	W	T3L T3B' T3L'	3
BL	N	BL	N	T3D'	1
<b>To F [BL, N]</b>		<b>From B</b>			
Location	Orientation	Location	Orientation	Algorithms	Moves
BL	N	TL	E	T3B2 T3D' T3B T3D T3L T3B2 T3L'	7
BL	N	TR	S	T3B T3D' T3B T3D T3L T3B2 T3L'	7
BL	N	BR	W	T3D' T3B T3D T3L T3B2 T3L'	6
BL	N	BL	N	T3B' T3D' T3B T3D T3L T3B2 T3L'	7

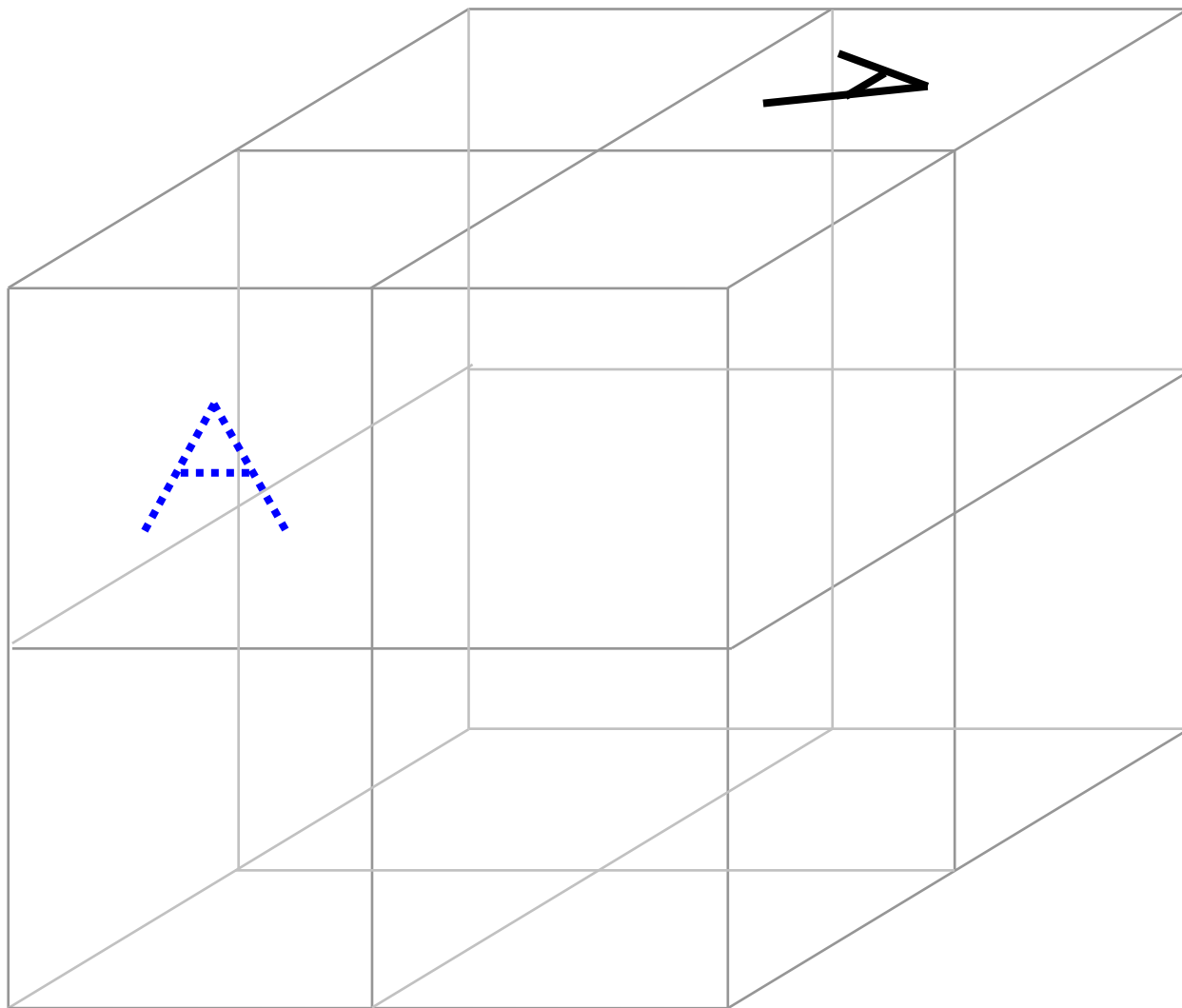
## V6 Wire Grid Models

### 2x2x2 Wire Grid Model

Using a wire grid model, it is easy to see through the cube where letters are. This model can be used with pencil and rubber to find a path on the cube.

This model may be used to find 3x3 block move algorithms.

In the example below, letter 'A', located **Top Left** on face **U** should be moved to face **F** where it will be located **Top Left**.

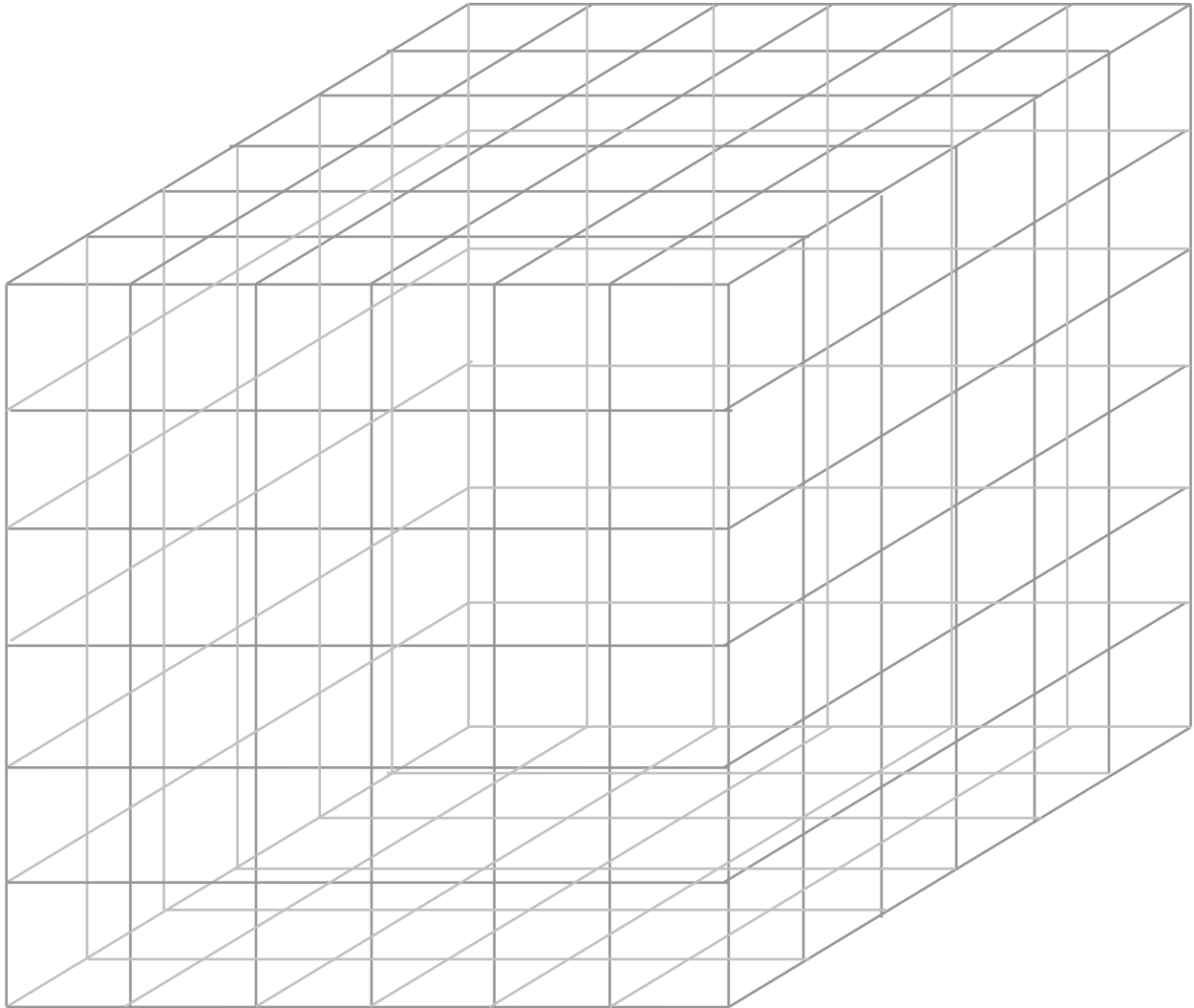




## 6x6x6 Wire Grid Model

Using a wire grid model, it is easy to see through the cube where letters are. This model can be used with pencil and rubber to find a path on the cube.

This model may be used to find algorithms for moving a single character from a location to another.



## V6 Texture Template

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

