

Yuán MemoQube

For those interested in Chinese language, here is a cube that could be used for memorizing chinese words or expressions.

For a non-native speaker, learning Chinese may be considered as a challenging task with four tones to master and a very large number of characters to memorize.

Two-character words make the most frequently used chinese words. A method of remembering a list of words is obtained by associating characters of the list. For example, if C1C2 and C2C3 are two words, then it is sufficient to memorize *domino-word* C1C2C3. This can easily be extended to a chain of n words. If the first and last characters of a chain are identical, then the domino-word is circular, as shown below:

车 身 心 想 出 发 起 火 车 | 车 身 | 身 心 | 心 想 | 想 出 | 出 发 | 发 起 | 起 火 | 火 车 | | *chēshēn|shēnxīn|xīnxiǎng|xiǎngchū|chūfā|fāqǐ|qǐhuǒ|huǒchē*

By laying out characters on a circle drawn on corner and edge stickers of a Rubik's cube, a puzzle is created that can be used to memorize a list of words.

In Chinese, 圆 *yuán* means 'circle', hence the name of the cube.

A [computer program](#) has been written to find sets of 6 chinese domino-words of high connectivity, from a database of more than 1800 two-character words, with the following features:

- all characters of a given set are distinct
- all domino-words are circular and composed of 8 characters
- all 6 domino-words on each face are connected by 12 edge link-words
- characters are selected to give a maximum number of links between domino-words
- characters are selected to show a low number of strokes, to ease recognizing them by beginners

Two-character words can be displayed on the top layer of the cube front face by applying edge-flips or 3-cycles of edges in order to show a *minimum* number of permuted pieces on the three visible cubes faces Front, Right and Up.

More than 160 words or expressions can be composed on the cube.

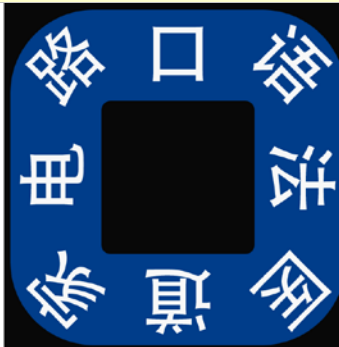
See an animated version of the *Yuán* MemoQube at:

http://www.randelshofer.ch/rubik/virtual_cubes/rubik/3x_scripts/3x_memoqube_yuan/index.html

Yuán MemoQube

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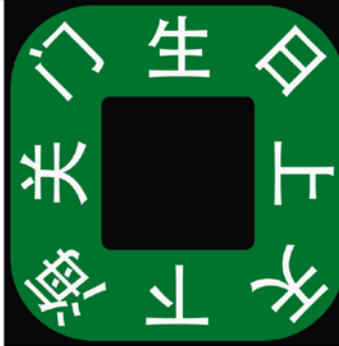
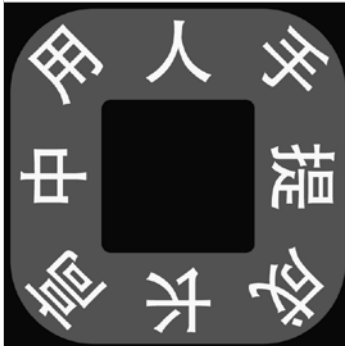


Chinese character combinations:

C1-C2
C2-C3
C3-C6
C6-C9
C9-C8
C8-C7
C7-C4
C4-C1

C1	C2	C3	路口 语法 电路 医德
C4	C5	C6	
C7	C8	C9	

路口 C1-C2 lùkǒu	口语 C2-C3 kǒuyǔ	语法 C3-C6 yǔfǎ
电路 C4-C1 diànlù		法医 C6-C9 fǎyī
家电 C7-C4 jiādiàn	道家 C8-C7 dàojiā	医道 C9-C8 yīdào



The Yuán system allows 8 character combinations per face and at least 48 combinations per cube.

For more informations see:
www.mementoslangues.fr



Edge Link-Words

车道 *chēdào* road

分心 *fēnxīn* to be distracted

出生 *chūshēng* to be born

提起 *tíqǐ* to mention

公法 *gōngfǎ* public law

工本 *gōngběn* cost price

上书 *shàngshū* to give one's opinion

口风 *kǒufēng* intention

电人 *diànrén* robot Denjin Zaborger (Japanese TV series in 1974)

长关 *zhǎngguān* administrative or military chief

中文 *zhōngwén* Chinese language

下行 *xiàxíng* descending

Front Face Domino-Words

车身 *chēshēn* car body

身心 *shēnxīn* body and mind

心想 *xīnxiǎng* to think

想出 *xiǎngchū* to come up with

出发 *chūfā* to leave

发起 *fāqǐ* to launch

起火 *qǐhuǒ* to catch fire

火车 *huǒchē* train

Right Face Domino-Words

公开 *gōngkāi* open to the public

开本 <i>kāiběn</i> format		
本国 <i>běnguó</i> national		
国书 <i>guóshū</i> credentials		
书名 <i>shūmíng</i> title		
名分 <i>míngfèn</i> social status		
分外 <i>fènwài</i> exceptionally		
外公 <i>wàigōng</i> maternal grandfather		
Up Face Domino-Words		
口语 <i>kǒuyǔ</i> spoken language		
语法 <i>yǔfǎ</i> grammar		
法医 <i>fǎyī</i> forensic investigator		
医道 <i>yīdào</i> art of medicine		
道家 <i>dàojiā</i> taoism		
家电 <i>jiādiàn</i> appliances		
电路 <i>diànlù</i> electric circuit		
路口 <i>lùkǒu</i> intersection		
Left Face Domino-Words		
人手 <i>rénshǒu</i> manpower		
手提 <i>shǒutí</i> mobile phone		
提成 <i>tíchéng</i> deduct a percentage		
成长 <i>chéngzhǎng</i> to grow up		
长高 <i>zhǎnggāo</i> to grow taller		
高中 <i>gāozhōng</i> senior middle school		
中用 <i>zhōngyòng</i> usable		

用人 <i>yòng rén</i> servant		
Down Face Domino-Words		
生日 <i>shēng rì</i> birthday		
日上 <i>rì shàng</i> all day long		
上天 <i>shàng tiān</i> Heaven, God		
天下 <i>tiān xià</i> world		
下海 <i>xià hǎi</i> to take to the sea		
海关 <i>hǎi guān</i> customs		
关门 <i>guān mén</i> to close the door		
门生 <i>mén shēng</i> disciple		
Back Face Domino-Words		
风水 <i>fēng shuǐ</i> feng shui		
水文 <i>shuǐ wén</i> hydrology		
文言 <i>wén yán</i> classical Chinese language		
言行 <i>yán xíng</i> words and deeds		
行动 <i>xíng dòng</i> action		
动工 <i>dòng gōng</i> to begin work		
工作 <i>gōng zuò</i> to work		
作风 <i>zuò fēng</i> style		
Front Face Words & Algorithms		
开车 <i>kāi chē</i> to drive	(DJO)	R' U' R MU2 R' U R MU2 CU CF'
手车 <i>shǒu chē</i> handcart	(DOJ)	MU2 R' U' R MU2 R' U R CU' CF'
天车 <i>tiān chē</i> crane	(DTH)	F R' F MR F' R F MR' F2 CR CF2
水车 <i>shuǐ chē</i> waterwheel	(DXA)	B' U2 B MU2 B' U2 B MU2 CU2 CF'

起身 <i>qǐshēn</i> to get up	(CDT)	MU B' MU' F' MU B MU' F
本身 <i>běنشēn</i> oneself	(JDU)	U' R' U MR2 U' R U MR2
身分 <i>shēnfen</i> identity	(AL)(MX)	F R' D F' R MU2 R' F D' R F' MU2 CF'
人身 <i>rénshēn</i> human being	(NDU)	MR2 D L2 D' MR2 D L2 D'
身长 <i>shēncháng</i> height	(PAX)	F D F' MU2 F D' F' MU2 CF'
身上 <i>shēnshang</i> on the body	(SAX)	MU2 L' D2 L MU2 L' D2 L CF'
文身 <i>wénshēn</i> tattoo	(XDU)	F' L2 F MR2 F' L2 F MR2
开心 <i>kāixīn</i> happy	(AJC)	F2 R' MF R F2 R' MF' R CU CF'
手心 <i>shǒuxīn</i> the palm of the hand	(AOJ)	F MR F R2 F' MR' F R2 F2 CU' CF'
成心 <i>chéngxīn</i> deliberately	(API)	D F D' MF2 D F' D' MF2 CU' CF2
用心 <i>yòngxīn</i> intention	(ANK)	U' F' U MF2 U' F U MF2 CU'
动心 <i>dòngxīn</i> tempted	(AVC)	F2 R2 MU' R2 MU2 F2 MU' CU2 CF
心火 <i>xīnhuǒ</i> internal heat	(ACV)	MU F2 MU2 R2 MU R2 F2 CF
心动 <i>xīndòng</i> emotionally affected	(AUD)	B R2 B' MR2 B R2 B' MR2 CU2 CF2
想起 <i>xiǎngqǐ</i> to remember	(CBW)	MR2 B L2 B' MR2 B L2 B' CF2
想法 <i>xiǎngfǎ</i> idea	(HBW)	F' R' F MR2 F' R F MR2 CF2
出路 <i>chūlù</i> outlet	(BFS)	L F L' MF2 L F' L' MF2 CR' CF
日出 <i>rìchū</i> sunrise	(BSF)	MF2 L F L' MF2 L F' L' CR CF'
发电 <i>fādiàn</i> to generate electricity	(FCV)	MU2 R' U2 R MU2 R' U2 R CF
发生 <i>fāshēng</i> to occur	(RCV)	MU2 R D R' MU2 R D' R' CF
风发 <i>fēngfā</i> high spirits	(WBM)	MR2 D' L' D MR2 D' L D CF2
发文 <i>fāwén</i> message sent	(XCV)	B2 L2 MU' L2 MU2 B2 MU' CF
发行 <i>fāxíng</i> to distribute	(UCV)	F' D2 F MU2 F' D2 F MU2 CF

起家 <i>qǐjiā</i> to start out	(CET)	MR2 D L D' MR2 D L' D' CR' CF2
起用 <i>qǐyòng</i> to reinstate (in a position or job)	(CML)	L MF L F2 L' MF' L F2 L2 CU' CF
上火 <i>shànghuǒ</i> to get angry	(SCV)	L D2 L' MU2 L D2 L' MU2 CF
文火 <i>wénhuǒ</i> small flame (when cooking)	(XCV)	B2 L2 MU' L2 MU2 B2 MU' CF
公国 <i>gōngguó</i> duchy, dukedom	(IJO)	MU2 L' U2 L MU2 L' U2 L CU CF'
公家 <i>gōngjiā</i> the state	(CET)	MR2 B R B' MR2 B R' B' CR' CF2
公路 <i>gōnglù</i> road, highway	(IFS)	U MR U R2 U' MR' U R2 U2 CR' CF
公用 <i>gōngyòng</i> public, for public use	(IML)	L U2 L' MU2 L U2 L' MU2 CU' CF
天公 <i>tiāngōng</i> heaven, lord of heaven	(ITE)	B R B' MR2 B R' B' MR2 CR CF2
公海 <i>gōnghǎi</i> high sea, international waters	(ITE)	B R B' MR2 B R' B' MR2 CR CF2
分开 <i>fēnkāi</i> to separate, to part	(LIP)	MF2 L' F2 L MF2 L' F2 L CU
开口 <i>kāikǒu</i> to start to talk	(GJO)	MU2 F U2 F' MU2 F U2 F' CU CF'
开道 <i>kāidào</i> to clear the way	(EJO)	B U2 B' MU2 B U2 B' MU2 CU CF'
开关 <i>kāiguān</i> power switch	(QJO)	B' D' B MU2 B' D B MU2 CU CF'
开工 <i>kāigōng</i> to begin work	(VJ)(CO)	F L' U F' L MU2 L' F U' L F' MU2 CU CF'
本家 <i>běnjiā</i> a member of the same clan	(JET)	F R2 F' MR2 F R2 F' MR2 CR' CF2
成本 <i>chéngběn</i> cost price	(JPI)	L B2 L' MF2 L B2 L' MF2 CU' CF2
日本 <i>rìběn</i> Japan	(JSF)	MF2 U B U' MF2 U B' U' CR CF'
国法 <i>guófǎ</i> national law	(HKN)	U2 R2 U' MR U R2 U' MR' U' CU CF2
国人 <i>guórén</i> fellow countrymen	(NKM)	MF2 R' B2 R MF2 R' B2 R CU CF2
中国 <i>zhōngguó</i> China	(MJO)	MU B2 MU2 L2 MU L2 B2 CU CF'
书家 <i>shūjiā</i> calligrapher	(KET)	F R F' MR2 F R' F' MR2 CR' CF2
手书 <i>shǒushū</i> handwritten	(KOJ)	L D2 L' MU2 L D2 L' MU2 CU' CF'

天书 <i>tiānshū</i> heavenly book, illegible writing	(KTE)	MR2 F R F' MR2 F R' F' CR CF2
名人 <i>míng rén</i> celebrity	(NLM)	R U2 R' MU2 R U2 R' MU2 CU CF
提名 <i>tí míng</i> to nominate	(OKN)	R F2 R' MF2 R F2 R' MF2 CU CF2
名下 <i>míng xià</i> under somebody's name	(TLM)	F D2 F' MU2 F D2 F' MU2 CU CF
成分 <i>chéng fèn</i> element, component	(LPI)	L' F2 L MF2 L' F2 L MF2 CU' CF2
天分 <i>tiān fèn</i> natural gift, talent	(LTE)	B R2 B' MR2 B R2 B' MR2 CR CF2
水分 <i>shuǐ fèn</i> moisture content	(LXD)	R U' R MU R' U R MU' R2 CU2 CF'
外电 <i>wài diàn</i> reports from foreign news agencies	(FIP)	L2 U2 L' MU L U2 L' MU' L' CU
外长 <i>wài zhǎng</i> minister of foreign affairs	(PIM)	MF2 R B2 R' MF2 R B2 R' CU
中外 <i>zhōng wài</i> Sino-foreign	(MLP)	MU2 R' D2 R MU2 R' D2 R CR CU
外文 <i>wài wén</i> foreign language	(XIP)	U' B' U MF2 U' B U MF2 CU
家口 <i>jiā kǒu</i> members of a family	(GFS)	MF2 D B2 D' MF2 D B2 D' CR' CF
海口 <i>hǎi kǒu</i> seaport	(GQH)	D' B2 D MF2 D' B2 D MF2 CR CF
门口 <i>mén kǒu</i> doorway, gate	(GRF)	MR2 D' L2 D MR2 D' L2 D CR
口水 <i>kǒu shuǐ</i> saliva	(GW)(BR)	F D' L F' D MR2 D' F L' D F' MR2 CR2 CF2
法家 <i>fǎ jiā</i> legalist school	(HET)	MR2 D' R2 D MR2 D' R2 D CR' CF2
手法 <i>shǒu fǎ</i> technique, trick, skill	(HOJ)	F U F' MU2 F U' F' MU2 CU' CF'
用法 <i>yòng fǎ</i> usage	(HMK)	U MR U R2 U' MR' U R2 U2 CU'
作法 <i>zuò fǎ</i> practice, method of doing something	(HWB)	MR2 F' R' F MR2 F' R F CU2
中医 <i>zhōng yī</i> traditional Chinese medical science	(MHQ)	U' B' U MF2 U' B U MF2 CR' CF'
医生 <i>yī shēng</i> medical doctor	(RET)	D2 F2 MR F2 MR2 D2 MR CR' CF2
行医 <i>xíng yī</i> to practice medicine	(UHQ)	R B R' MF2 R B' R' MF2 CR' CF'
道路 <i>dào lù</i> road, path, way	(EFS)	MF2 D' F2 D MF2 D' F2 D CR' CF

门道 <i>méndào</i> doorway, gateway	(ERG)	U2 F2 MR' F2 MR2 U2 MR' CR
水道 <i>shuǐdào</i> aqueduct, sewer	(EXA)	L U L' MU2 L U' L' MU2 CU2 CF'
家人 <i>jiārén</i> household, one's family	(NF)(KS)	L U' F L' U MF2 U' L F' U L' MF2 CR' CF
家长 <i>jiāzhǎng</i> family head	(PFS)	D2 L2 D' MR' D L2 D' MR D' CR' CF
电门 <i>diànmén</i> electric switch	(FQH)	MF' L2 MF2 U2 MF' U2 L2 CR CF
电动 <i>diàndòng</i> electric powered	(FUD)	B' L' B MR2 B' L B MR2 CU2 CF2
路人 <i>lùrén</i> passer-by, stranger	(NGR)	MR2 F L F' MR2 F L' F' CR'
路上 <i>lùshàng</i> on the road	(SGR)	U R2 U' MR2 U R2 U' MR2 CR'
成人 <i>chéng rén</i> adult	(NPI)	MF' L2 MF2 U2 MF' U2 L2 CU' CF2
人海 <i>rénhǎi</i> a multitude, a sea of people	(NTE)	B' L' B MR2 B' L B MR2 CR CF2
动人 <i>dòng rén</i> touching, moving	(NVC)	B U B' MU2 B U' B' MU2 CU2 CF
手生 <i>shǒushēng</i> to get rusty	(ROJ)	MU2 B' D2 B MU2 B' D2 B CU' CF'
上手 <i>shàngshǒu</i> seat of honour	(SNJ)	D B' D MF' D' B D MF D2 CU'
手下 <i>shǒuxià</i> under control of somebody	(TOJ)	F' D2 F MU2 F' D2 F MU2 CU' CF'
手工 <i>shǒugōng</i> handwork, manual	(VOI)	B U' B MU B' U B MU' B2 CU' CF'
提高 <i>tígāo</i> to raise, to increase	(OPI)	MF2 R' F2 R MF2 R' F2 R CU' CF2
成风 <i>chéngfēng</i> to become a common practice	(WPI)	D' B2 D MF2 D' B2 D MF2 CU' CF2
日中 <i>rìzhōng</i> noon, midday	(MSF)	D B D' MF2 D B' D' MF2 CR CF'
中天 <i>zhōngtiān</i> culmination (astronomy)	(MSF)	D B D' MF2 D B' D' MF2 CR CF'
天生 <i>tiānshēng</i> innate, natural	(RTE)	MR' D2 MR2 F2 MR' F2 D2 CR CF2
日文 <i>rìwén</i> Japanese language	(XSF)	R' B2 R MF2 R' B2 R MF2 CR CF'
日工 <i>rìgōng</i> day worker	(VSF)	MF2 L' B2 L MF2 L' B2 L CR CF'
上海 <i>shànghǎi</i> Shanghai	(STE)	MR2 U' R2 U MR2 U' R2 U CR CF2

上门 <i>shàngmén</i> to drop in, to visit	(SQH)	MF D2 MF2 R2 MF R2 D2 CR CF
上水 <i>shàngshuǐ</i> to sail upstream	(SWB)	B' R' B MR2 B' R B MR2 CU2
天文 <i>tiānwén</i> astronomy	(XTE)	MR2 U L U' MR2 U L' U' CR CF2
天工 <i>tiāngōng</i> work of Nature	(VTE)	MR2 U' R' U MR2 U' R U CR CF2
下水 <i>xiàshuǐ</i> to go into the water, to launch a ship	(TWB)	B MU' B D2 B' MU B D2 B2 CU2
海风 <i>hǎifēng</i> sea wind, sea breeze	(WQH)	L B L' MF2 L B' L' MF2 CR CF
风动 <i>fēngdòng</i> pneumatic	(WUD)	MR B2 MR2 U2 MR U2 B2 CU2 CF2
作文 <i>zuòwén</i> to write an essay, a composition	(XWB)	MR2 F L2 F' MR2 F L2 F' CU2

中国 *Zhōngguó* China



MU B2 MU2 L2 MU L2 B2 CU CF'

家人 *jiārén* family members



L U' F L' U MF2 U' L F' U L' MF2 CR' CF