

# How to Memorize Cards, GUIDs, Hashes, Public Keys, and More — Revision 18

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# 1 Change log

This is very much a work-in-progress and nowhere near clean enough for publication and distribution. However, it is useful, and it's FREE. Use at your own risk. Better yet, submit pull requests that fix problems or TODO items.

- Revision 17
  - Introduce PAO in an appendix; Minor maintenance
- Revision 16
  - Work a little on pegs for the 400's
- Revision 15
  - Add caching to the org-babel code.
  - new pegs to 1000
- Revision 12
  - Rework the 3-digit pegs; adding new technique.
- Revision 11
  - Add section on people's names, a new application of the technique, never before published to our knowledge.
- Revision 10
  - All Pegs now use babomorph for typesetting.
- Revision 7
  - non-Alphabetic ASCII
- Revision 6
  - Automate production of tables with Clojure program.
- Revision 5
  - Include Tarot images.
- Revision 4
  - Include remarks about passwords and mental hash functions from JDC.
- Revision 3
  - Include some sound-alikes and peg candidates from JDC, plus a hint that science fiction is a fount of sound-alikes.
  - Begin promoting the first row in each table to "preferred sound alike."

## 2 Prologue

Brian is the curator and primary author of this document. He wrote the first version before enlisting John and Ondrej to contribute. Any use of the first person “I,” “we,” and so on, in the document is historical and refers to Brian. Brian is responsible for all mistakes.

### 2.1 How to Modify this Document

The PDF file is generated from `.org` source via Emacs. The `org` source contains blocks of Clojure code, specifically calls of the `babomorph` function, which extracts strings from the following Clojure file:

```
src/how-to-memorize/core.clj.
```

If you want to change the peg words, the ordering of the words, the capitalization of the words, the formatting of the tables in the PDF document, or anything else about this code, modify that `core.clj` file, `cider jack-in`, and evaluate the code via `Ctrl-C Ctrl-C` while visiting `core.clj`. If you want to change prose or other aspects of the document, modify the `.org` file and you won’t have to bother with `core.clj`.

The results of running all the Clojure code is cached in the `.org` file. If you change the Clojure code, evaluate `core.clj` via `Ctrl-C Ctrl-C`, then manually run affected blocks in the `.org` file by removing the `:results:` blocks and keyboarding `Ctrl-C Ctrl-C` (same command, just while visiting the `.org` file) with your cursor somewhere inside the `begin_src` or `babomorph` block.

For example, if you change the table for 00 through 09 in the `core.clj` file, `Ctrl-C Ctrl-C` in `core.clj`, then remove the results drawer and its hash on that table here in the `.org` file—it looks like this:

```
#+RESULTS[7ecf5cbc3481e60410646e89bc93d7140a6cad17]:
:results:
|----+-----+-----+-----+-----+-----...
| 00 | SAUCE    | OASIS   | icehouse | sissy    | sass     ...
|    | assess   | assize  | houses   | sassy    | say-so   ...
|    | seize    | size    |          |          |          ...
...
:end:
```

Delete all the results through the `:end:`.

Then keyboard `Ctrl-C Ctrl-C` on the `babomorph` block, which looks like this:

```
#+begin_src clojure :cache yes :exports results :results ...
  (babomorph 0 10)
#+end_src
```

and you’ll see the table regenerated.

Note that the `babomorph` commands are off-by-one-hundred, so `(babomorph`

510 520) builds the table for pegs 410 through 419. This is so we can accommodate pegs that begin with zero.

To produce the PDF, you need a full  $\text{\LaTeX}$  installation, Emacs 29.1 or later, Clojure 1.10.3 or better (see `project.clj`), and CIDER installed. There may be other ways to build the PDF, but that's what I use. Manually `cider-jack in` to a CIDER session to warm up the Clojure environment. Run

```
org-latex-export-to-pdf
```

while visiting the `.org` file in an Emacs buffer to produce a `.tex` file and possibly a `.pdf` file.

Something went wrong in my recent `tex` integration, so I run

```
pdflatex -shell-escape how-to-memorize-hex-r36-r64.tex
```

twice, manually in a side terminal after running

```
org-latex-export-to-pdf
```

but that's not a big roadblock. Your installation's of  $\text{\LaTeX}$  and Emacs may go more smoothly.

The `.org` file contains lots of stuff that isn't output to the PDF file. That stuff represents either work-in-progress or variations on the main theme, variations that aren't good enough to commit to print.

### 3 Introduction

Here is a word that might be unfamiliar:

**Definition 1.** A *phantasmagoria* is

1. a vivid mental image like Superman or Bilbo Baggins
2. a mental movie clip like Rhett Butler carrying Scarlett O'Hara up the staircase, two steps at a time; or Legolas the elf in "Lord of the Rings" firing off arrows
3. a sensation like the taste of cherry pie with vanilla ice cream or the smell of burnt motor oil in an old engine block
4. a musical riff like Clapton's "Down to the Crossroads" or Bach's "Toccatina and Fugue in D Minor"
5. anything else that's vivid and easy to recall without effort

The premise of everything in this document is

**Premise 1.** *Almost everyone can recall phantasmagorias without effort. Let's trick our minds into memorizing numerical data via permanent associations between numbers and phantasmagorias.* ■

We'll find that we can memorize long sequences of numbers in any radix (base) by making up phantasmagorias, or *phants* for short. It's fun, easy, and empowering. It requires some effort up front, but the effort is incremental. It takes less than 30 minutes for anyone to learn how to memorize shopping lists of up to 10 items effortlessly and without writing anything down. In a couple of weeks, anyone can learn to memorize lists of up to 100 items effortlessly. That's good enough for a lifetime of practical application. The seriously committed can spend a few months learning to memorize up to 1110 items effortlessly.

## 4 The Peg System, Contrasted

This document is primarily about the Mnemonic-Major or Peg system,<sup>1,2</sup> which makes *direct* and permanent associations between numbers and permanent phantasmagorias — the *pegs*, then temporary phantasmagorias for the memory task at hand. For example, in my realization of the Major system, 1 is always and forever the peg TEA, 2 is NOAH, 3 is ME, and so on. To remember the temporary shopping list “broccoli, grapes, lettuce,” I picture a big, Disneyland teacup overflowing with broccoli, Noah squishing grapes into his beard, and me in the mirror with a head of lettuce instead of my actual head, and so on. When I’m done with the shopping list, I mentally discard it, but not the pegs. I reuse the pegs later for the next task. The pegs are forever.

The famous Roman-Room system<sup>3</sup>, also called *Memory Palace* or *Method of Loci*, assigns temporary phantasmagorias, for the memory task at hand, to permanent mental images of favorite places that you mentally visit in sequence, such as bedroom, bathroom, kitchen. When you want to remember the shopping list “broccoli, grapes, lettuce,” picture the broccoli in the bedroom, grapes in the bathroom, lettuce in the kitchen, and so on. If you have a big sequence of favorite places or *loci*, as they’re called, you can memorize big lists this way.

I prefer the peg system because I don’t actually have a sequence of favorite places that I can recall quickly and without effort. But I can recall the pegs quickly and without effort, so they do the job for me. Lots of people love the Roman-Room system though, and I encourage you to develop it if it works for you. In either case, the objective is to have a fixed sequence of mental images on which you can hang temporary mental images, either to just have a list or to make mental movies, etc.

The equally famous Person-Action-Object (PAO) system<sup>4</sup> amplifies my realization of the Major system, as explained in Appendix 15.10.

My primary sources for the peg system are Krill<sup>5</sup> and Furst.<sup>6</sup> Krill calls his system *Pseudonumerologic-VIP*, which is a clever way of remembering the fundamental pegs 0123456789 by sound: SDNMRLJKVP.

These methods are based on tables of

**pegs** permanent, immutable mental images in one-to-one correspondence with numbers. For instance, I pegged the number 68 to *chef*. Whenever I see a chef or think of one, I smell the kitchen and hear the sounds of boiling and sizzling phantasmagorically, and instantly think of the number 68. That’s 1-to-1 correspondence.

**sound-alikes** fluid, mutable lists of mental-images that are similar in their conso-

<sup>1</sup><https://forum.artofmemory.com/t/the-mnemonic-major-system-and-gregg-shorthand-have-the-same-under126339>

<sup>2</sup>[https://en.wikipedia.org/wiki/Mnemonic\\_major\\_system](https://en.wikipedia.org/wiki/Mnemonic_major_system)

<sup>3</sup><https://artofmemory.com/blog/roman-rooms/>

<sup>4</sup><https://artofmemory.com/blog/pao-system/>

<sup>5</sup><https://folk.ntnu.no/krill/pseudonumerology.htm>

<sup>6</sup><https://a.co/d/fvluRmv/>

nant sounds to the pegs and in many-to-one correspondence to the numbers. 68's CHEF sounds like CHIEF, SHEAF, JAVA, CHAFF, amongst others. While 68 always means CHEF, recalled instantly, a chef might not fit well into an ongoing phantasmagoria. For instance, if we're memorizing 276872, the pegs are NECK, CHEF, and CAN. That sequence does not invoke an obvious story or mental movie, so we start looking for sound-alikes. How about INCA CHIEF COIN? Just picture a coin with an Inca chief embossed on it, and we're done. It took a few seconds to derive INCA CHIEF COIN from NECK CHEF CAN, but the other direction is almost instantaneous. Sound-alikes are many-to-one because there are many words that map to each number.

The big point is this: you can instantly go from a number to a peg, and you can, almost instantly, go from a sound-alike to a number. It might take a little while to go from a peg to a sound-alike, but if doing so helps memorize a big list, then it's worth the effort.



## 5 Basic Pegs

The pegs for the decimal digits are the fundamental foundation for the entire system. All longer pegs, like CHEF for 68, are built up from these. Here are my basic pegs, with some mnemonic hints:

digit	peg	mnemonic	sound-alike rules
0	saw	circular saw, sawed log; round like 0	s, z
1	tea	giant Disneyland teacup; T looks like 1	d, th, dh (them)
2	Noah	... and the Ark; N has 2 legs (2 = ng for Krill only, nk is always 27)	ng (Krill only — "Krill" has 2 "l"s)
3	me	... in the mirror tying a bow tie; M has 3 legs	
4	ray	laser pointer, flashlight, light saber no simple mnemonic to 4	
5	law	5 fingers as the cop holds up his hand the hand is L-shaped as you look at it	
6	jaw	6 looks like Lurch's lantern jaw	sh, ch, zh (pleasure)
7	key	7 looks like an Allen key (7 = ng for Furst and me, nk is always 27)	g, ng (Furst only)
8	fee	8 looks like a dollar sign	f, v
9	pea	The Princess and the Pea: 9 mattresses	p, b

Memorize this table, or one personalized to you, by whatever means, by brute force if necessary. The rest of the system relies on it. If you don't like these specific pegs, pick some others out of the rows for 0 through 9 in Section 16. Pick your own peg for each digit, make your own table, memorize it, and stick with it forever. NEVER, EVER CHANGE ANYTHING IN IT. Brian did that once more than 50 years ago, and continues to regret it. This table must become an internal, effortless vocabulary like your native language.

Make up pegs and sound-alikes for longer numbers by combining consonant sounds. For example, here is the peg and sound-alikes for 32:

32	MAN	MOON	mane	hymen	mine	minnow
	amen	ammonia	human	main	mana	mania
	manna	many	mean	mien	moan	money
	omen	woman	yeoman			

*Notes on such tables:*

- the peg is in all-caps and in first position; other terms in all-caps are recommended alternative pegs; use them if they work better for you
- the first line contains preferred sound-alikes in preference order
- the remaining sound-alikes appear in alphabetical order

MAN is the peg: it is *equal* to 32 in your mind. I visualize Superman flying out of the phone booth, impossible to forget for me.

## 5.1 Old 3-Digit System

We go up to three digits in this document. That means that every number from 00 through 099 and 0 through 1000 has a peg and a list of sound-alikes.

In this old system, the peg and sound-alikes for the 3-digit number  $xyz$  are formed from 3 hard consonant sound alikes,  $a$  for  $x$ ,  $b$  for  $y$ , and  $c$  for  $z$ . For instance, here is the list for  $xyz = 352$ :

352	MELON	Himalayans	hemline	semolina	milliner	homeland
	malign	melancholy	millennial	millennium	million	

When making up pegs and sound-alikes, weak consonant sounds such as H, WH, Y, and W are free. For example, ignore the H in *hemline*. Use soft consonants at will. Vowel sounds are also free — use as many or as few as you like.

From this point on, when we write “sound” or “sounds,” we mean “hard consonant sound” or “hard consonant sounds.”

Ignore trailing sounds beyond the first three: *hemline* and *hemlining* both encode 352, as do *millennial* and *millenium*.

Ignore leading S and Z sounds if the total number of sounds is four or more. So *semolina* encodes 352.

However, *semolina* also encodes 035 by the rule about trailing sounds beyond three. This is a flaw in Furst’s original design. Here is more about this problem.

### 5.1.1 Leading S and Z sounds

Furst’s tables are ambiguous for 3-digit pegs with leading 0, as we show in this section. It’s a major TODO to fix this problem.

The first general rule is:

*Ignore leading S and Z sounds when the total number of sounds is four or more.*

By this rule, *semolina*, which has four sounds, encodes 352, as seen above. However, *semolina* also appears in Furst’s table for 035:

035	SAWMILL	SMILE	semolina	smell	small	simile
Z	sea-mile	sea-mule	seamless	seemly	similar	

*Semolina* belongs in the table for 035 by the “trailing-sounds rule:”

*Ignore trailing sounds beyond the first three.*

Our “Ignore leading S and Z when there are four or more sounds” rule is in conflict with our “Ignore trailing sounds beyond the first three” rule. You can also see *seamless* and *similar* in the table above for 035, but *similar* also shows up in Furst’s table for 354:

354	molar	miler	malaria	millier	milliard	mealworm
	mailer	milord	millwright	ameliorate	similar	

### 5.1.2 TODO Fix These Exceptions

One way to fix this problem is to remove *seamless* and *similar* from 035 and leave them in 350 and 354, following the “ignore leading S and Z when there are four or more sounds” rule. Generalizing, insist that all 3-digit numbers of the form 0xy, with an actual leading 0 and two hard consonant sounds, a and b, have pegs and sound alike with exactly three sounds including the leading S or Z. Any four-or-more-sound words with leading S or Z sound must encode numbers that *don't* begin with zero.

It's a major job to fix the tables following this scheme of rules, and it will affect the methods for radices 16, 36, and 64.

## 5.2 TODO Composite Pegs: New 3-Digit System

(John's idea)

It can be challenging to come up with more than 1,000 3-digit pegs out of the blue. Perhaps we could get to 1,000 more easily by combining 110 prefix pegs with 10 fixed, suffixes. For example:

740	Creamy Strawberry Pie
741	Creamy Treacle
742	Creamy Nougat
743	Creamy Marshmallow
744	Creamy Raspberry Pie
745	Creamy Lemon Meringue Pie
746	Creamy Cherry Pie
747	Creamy Coconut Pie
748	Creamy Vanilla Pie
749	Creamy Blackberry Pie

and

840	Fresh-baked Strawberry Pie
841	Fresh-baked Treacle
842	Fresh-baked Nougat
843	Fresh-baked Marshmallow
844	Fresh-baked Raspberry Pie
845	Fresh-baked Lemon Meringue Pie
846	Fresh-baked Cherry Pie
847	Fresh-baked Coconut Pie
848	Fresh-baked Vanilla Pie
849	Fresh-baked Blackberry Pie

We only need the first 64 for radices.

010	A	Sodden Strawberry Pie
011	B	Sodden Treacle
012	C	Sodden Nougat
013	D	Sodden Marshmallow
014	E	Sodden Raspberry Pie
015	F	Sodden Lemon Meringue Pie
016	G	Sodden Cherry Pie
017	H	Sodden Coconut Pie
018	I	Sodden Vanilla Pie
019	J	Sodden Blackberry Pie
020	K	Sun-baked Strawberry Pie
021	L	Sun-baked Treacle
022	M	Sun-baked Nougat
023	N	Sun-baked Marshmallow
024	O	Sun-baked Raspberry Pie
025	P	Sun-baked Lemon Meringue Pie
026	Q	Sun-baked Cherry Pie
027	R	Sun-baked Coconut Pie
028	S	Sun-baked Vanilla Pie
029	Th	Sun-baked Blackberry Pie
030	U	Semi-soft Strawberry Pie
031	V	Semi-soft Treacle
032	W	Semi-soft Nougat
033	X	Semi-soft Marshmallow
034	Y	Semi-soft Raspberry Pie
035	Z	Semi-soft Lemon Meringue Pie
036	a	Semi-soft Cherry Pie
037	b	Semi-soft Coconut Pie
038	c	Semi-soft Vanilla Pie
039	dh	Semi-soft Blackberry Pie
040	e	Sorbet and Strawberry Pie
041	f	Sorbet and Treacle
042	g	Sorbet and Nougat
043	h	Sorbet and Marshmallow
044	i	Sorbet and Raspberry Pie
045	j	Sorbet and Lemon Meringue Pie
046	k	Sorbet and Cherry Pie
047	l	Sorbet and Coconut Pie
048	m	Sorbet and Vanilla Pie
049	nh	Sorbet and Blackberry Pie

050	o	Salad and Strawberry Pie
051	p	Salad and Treacle
052	q	Salad and Nougat
053	r	Salad and Marshmallow
054	s	Salad and Raspberry Pie
055	t	Salad and Lemon Meringue Pie
056	u	Salad and Cherry Pie
057	v	Salad and Coconut Pie
058	w	Salad and Vanilla Pie
059	xh	Salad and Blackberry Pie
060	y	Sushi and Strawberry Pie
061	z	Sushi and Treacle
062	+	Sushi and Nougat
063	,/	Sushi and Marshmallow

Here are some candidates for a hundred prefixes.

000	Saucy Strawberry Pie
010	Sodden Strawberry Pie
020	Sun-baked Strawberry Pie
030	Semi-soft Strawberry Pie
040	Sorbet and Strawberry Pie
050	Salad and Strawberry Pie
060	Sushi and Strawberry Pie
070	Saccharine and Strawberry Pie
080	Savory Strawberry Pie
090	Soup and Strawberry Pie
100	Tossed Strawberry Pie
110	Toothy Strawberry Pie
120	Thin-crust Strawberry Pie
130	Thumbnail Strawberry Pie
140	Dairy-based Strawberry Pie
150	Tallow-free Strawberry Pie
160	Dutch-chocolate Strawberry Pie
170	Thick-crust Strawberry Pie
180	Taffy-iced Strawberry Pie
190	Deep-dish Strawberry Pie
200	Anise-laced Strawberry Pie
210	Nut-covered Strawberry Pie
220	Non-fattening Strawberry Pie
230	Anemic Strawberry Pie
240	Near-perfect Strawberry Pie
250	Newly-eaten Strawberry Pie
260	Unshared Strawberry Pie
270	Uncanned Strawberry Pie
280	Unflavored Strawberry Pie
290	Unboxed Strawberry Pie

TODO: finish

### 5.3 Brian's 2-Digit-Plus List

Brian's basic 2-digit peg list appears below, extended from 99 to 127 for ASCII and with nine extra pegs for court cards (Section 15.8). Brian knows this table by heart.

00	sauce	10	toes	20	nose	30	mass
01	sod	11	tot	21	net	31	mat
02	sun	12	tan	22	nun	32	man
03	seam	13	tam	23	name	33	mama
04	soar	14	tar	24	Nero	34	mare
05	sail	15	tail	25	nail	35	mail
06	sash	16	tissue	26	niche	36	match
07	sack	17	tack	27	neck	37	mike
08	safe	18	taffy	28	navy	38	muff
09	sap	19	tap	29	nap	39	map
40	race	50	lace	60	chess	70	case
41	rat	51	lot	61	jet	71	cat
42	rain	52	lane	62	chain	72	can
43	ram	53	lime	63	chime	73	cam
44	rear	54	lair	64	chair	74	car
45	rail	55	lily	65	jail	75	coal
46	rash	56	lash	66	judge	76	cage
47	rack	57	lake	67	chalk	77	cake
48	reef	58	leaf	68	chef	78	cuff
49	rope	59	lap	69	chip	79	cap
80	face	90	base	100	thesis	110	tights
81	fat	91	bat	101	toast	111	teetotaler
82	fan	92	bean	102	dozen	112	titan
83	fame	93	beam	103	twosome	113	totem
84	fare	94	bar	104	dowser	114	Tatar
85	fall	95	ball	105	diesel	115	title
86	fish	96	badge	106	wood-sage	116	deathwatch
87	fig	97	back	107	tusk	117	hot dog
88	fife	98	beef	108	adhesive	118	auto-da-fe
89	fob	99	pipe	109	teaspoon	119	teddy bear
120	dance	911	potato	411	rat-a-tat	711	cadet
121	donut	912	baton	412	rattan	712	katana
122	Athenian	913	podium	413	radium	713	catamaran
123	tenement						
124	tenor		spades		hearts		clubs
125	toenail		court		court		court
126	tension		cards		cards		cards
127	tank						

### 5.3.1 Re-Deriving a Forgotten Peg

In case you find yourself forgetting a peg, there is an easy way to re-derive it: go down the vowel sounds, short and long, in order — a, e, i, o, u — and try sandwiching each vowel between the bracketing consonants — *nan*, *nane*, *nen*, *nene*, *nin*, *nine*, *non*, *known*, *nun*. Eventually, you'll hit the right one. For the ambiguous consonant clusters like 6 = J, SH, CH, you may have to try a few combinations of consonants as well.

## 6 Credit-Card Numbers

Consider the following, fake VISA number from

<https://www.getcreditcardnumbers.com>

4716 5752 8659 3845

From the peg list, we get

4716	RACK TISSUE
5752	LAKE LANE
8659	FISH LAP
3845	MUFF RAIL

There isn't an obvious narrative, here, but we get better by starting with "fish" (picturesque and smelly) and working sound-alikes backwards:

4716	RACK dash	Take a fishing rod off the RACK and DASH
5752	LAKE LANE	down to the LAKE via our favorite LANE.
8659	FISH leap	The FISH are LEAPing today, so we
3845	move reel	MOVE the REEL slowly (on the fishing rod).

I can recall this credit-card number weeks after devising the story, without much refreshing in between. Devising it took less than a minute. I memorized it while devising it without extra effort because I know the 2-digit peg table by heart.



## 7 Hexadecimal: GUID & SHA-1

There are several ways we might approach memorizing numbers that include alphabetical glyphs or letters, such as numbers in base 16, 36, and 64. One way would be to mentally picture things that go along with the letters, such as an A-frame house like a ski chalet for A, and a honey bee for B, and so on. Feel free to proceed this way should you like it. I recommend, however, that we use the existing 2-digit codes for the ASCII values of the letters. For example, capital A has ASCII code 65, with peg JAIL, and little a has ASCII code 97, with peg as BACK. We get two phantasmagorias: a jail cell and a back, say the back of a prison guard. We'll need the capital-uncial distinction for radix-64 but not for hex or radix-36.

There is a price to pay for this choice: we can no longer encode 65 as JAIL or 97 as BACK, depending on the radix we're working in. We'll have to do something else for them. The examples will illustrate the technique.

For mapping *hexits* (hexadecimal digits), extend the table with the ASCII codes for A-F.

hex	NATO	ASCII		PHANTASMAGORIA
A	ALPHA	JAIL	65	the alpha-male lion is in jail
B	BAKER	JUDGE	66	passing judgment on the lion
C	CHARLIE	CHALK	67	hopscotch on the sidewalk
D	DELTA	CHEF	68	day job of a PhD-thesis student
E	ECHO	CHIP	69	a poker chip in a policeman's (LAW:5) hand
F	FOXTROT	CASE	70	filled with a dozen pink roses

and their sound-alikes:

65	JAIL	CHILI	jelly	jewel	shell	shawl
A	Chile	July	agile	chill	jolly	jowl
	shall	shallow	shill	shoal	shyly	usual
66	JUDGE	HASHISH	juju	Jewish	cha-cha	choochoo
B	chichi	chowchow	jaygee	josh	shoji	shush
	wishy-washy					
67	CHALK	JUG	jack	sheikh	chick	cheek
C	Django	aging	check	chic	choke	chuck
	chug	etching	itching	jingo	jock	jockey
	joke	shack	shag	shake	shako	shock
	shuck	washing	watching	wishing		
68	CHEF	CHEVY	chief	sheaf	chaff	chive
D	Java	Jehovah	achieve	chafe	jayvee	jiffy
	jive	shave	shove	wash-off		
69	CHIP	JEEP	jib	sheep	ship	Job
E	GP	chap	chapeau	cheap	chop	chubby
	gyp	jab	jibe	job	shabby	shape
	ship	shop				
70	CASE	GOOSE	gas	kiss	ox	eggs
F	accuse	acquiesce	ax	cause	causeway	chaos
	cozy	cuss	gauze	gaze	guess	guise
	guys	hex	hoax	quasi	wax	

Remember that 7 can be *ng* in Furst's system, the one we're following, explaining why we get so many *...ing* words for 67.

As noted, we lose the six pegs for 65 through 70. You can't memorize a 65 in the text by picturing JAIL because JAIL means A in hex. We need some other encoding or grouping of the digits. For example, seeing a 265A, we might think NICHE(26), LAW(5), JAIL(A), or ANGEL(265), JAIL(A).

## 7.1 Example GUID:

Hex is only a little harder than decimal. Consider this random GUID generated by Java:

5D00E7AA-C15C-44A5-93FA-A4DE6750B28A

Often, in real-world application, you don't need to memorize the whole thing, but we'll do that for practice. Start with the pegs:

5D00	E7AA	LAW CHEF SAUCE CHIP KEY JAIL JAIL
C15C		CHALK TAIL CHALK
44A5		REAR JAIL LAW
93FA		BEAM CASE JAIL
A4DE	675	JAIL RAY CHEF CHIP CHUCKLE
0B28	A	SAW JUDGE NAVY JAIL

### Note:

- Encode 6750 as CHUCKLE SAW, not 67 50 CHALK LACE. CHALK decodes as C, not 67.

In the credit-card example, we worked backwards from the picturesque peg FISH 86. Here we work backwards from the seductive sound-alike NAIVE 28. The seductive emotion will make it easier to memorize. Hallucinate a HELL-CHEF SAUCE, a recipe for a naive victim.

5D00	E7AA	HELL-chef SAUCE: CHOP, HACK, and CHILL the JELLY.
C15C		SHAKE with TALLOW, CHECK
44A5		the RARE CHILI OIL.
93FA		"BE-MY HAGGIS, JILL!"
A4DE	675	CHILL for an HOUR, SHAVE, CHOP, CHUCKLE.
0B28	A	"ASSAY, JUDGE!" NAIVE JILL.

## 7.2 Example SHA-1 Hash

From <https://onlinehashtools.com>, consider the following, 160-bit hash:  
For git, it usually suffices to remember the first 8 hexits. Let's do them all as a workout:

A638	1B63	JAIL SHAM-FRUIT TEA JUDGE CHIME
D532	69BA	CHEF LEMON JAW PEA JUDGE JAIL
418E	5FB1	ARTFUL CHIP LAW CASE JUDGE TEA
BD50	3950	JUDGE CHEF WHOLESOME PILLOWS
860D	D679	FISHES CHEF CHEF CHECKUP

### Notes

- CHIME for 63 is ok in hex and R36, but not ok in R64, where it decodes as “/”.
- Don't encode 69 as CHIP, rather as JAW PEA, because CHIP decodes as E.
- An alternative to WHOLESOME PILLOWS for 50 3950 is LACE MAP LACE, but it's clumsy.

Let's bribe a judge and put him to sleep with hashish (puns help the memory), then summon middle-Eastern heavenly dreams.

A638	1B63	with SHAWL and SHAM-FRUIT, TEA for the JUDGE, JIM.
D532	69BA	SHAVE a LEMON WEDGE, PAY the JUDGE to CHILL.
418E	5FB1	an ARTFUL SHAPE of this LAW CASE, SHUSH THEE!
BD50	3950	HASHISH ACHIEVES ELYSIUM BLESSINGS
860D	D679	FETCHES the CHIEF, JEHOVAH for JACOB!

## 8 Radix 36

Radix-36 is more difficult to find “in the wild” than is either hex or Radix-64. I most often see it in randomly generated file and directory names because some file systems are not case-sensitive and neither is R36. R36 is also sometimes found in URLs for encoding queries or other data. Despite the fact that URLs, except for the domain name, are case-sensitive, some sites, especially older ones, and even some browsers and query-generators, don’t adhere to the standard properly. Radix-64 is overkill in such circumstances and uses up alternatives, but radix-36 is immune to the commonplace nonconformance of the internet.

For encoding *rixits* in R36 (or biscuits in base-36?), I use ASCII pegs for the capital letters beyond hex. Find their sound-alikes in Section 16. Because R36 is case-insensitive, we need only one set of pegs. For Radix-64, we need both upper and lower case, so two pegs per letter.

The stars in the table below mark pegs for the lower case. They help for remembering the ASCII pair — upper and lower case — but they’re only pertinent for R64 (Section 9). The numbers in parentheses refer to the ordinal number of the letter in the alphabet: K is the eleventh letter in the alphabet, and 11 has peg *tot*, whom I visualize as Alice of Wonderland. Further associations with Hebrew keywords like *mayim* (water) and *nakhash* (snake) or with playing cards like the club jack are given, as explained in section 11.

	NATO		ASCII	PHANTASMAGORIA; ASCII-pair refs marked with *
G	GOLF	71	cat	on the golf cart with my twosome*
H	HOTEL	72	can	ashtray outside in the smoking area (smell)
I	INDIA	73	cam	diesel* Rolls-Royce in a junkyard in India
J	JULIET	74	car	Juliet walks a wood-sage* to his NASCAR* ride
K	KILO	75	coal	Alice(11) gives coal to a tusked* troll
L	LIMA	76	cage	containing tanned(12) beach-goers
M	MIKE	77	cake	an orca (Mayim:13) flips a cake on its nose
N	NOVEMBER	78	cuff	a snake (Nakhash:14) no arms, cuffs on shirt
O	OSCAR	79	cap	a teetotaler wearing a Carrie-Nation cap
P	PAPA	80	face	Dad cries (tissue:16) at Liz Taylor’s face
Q	QUEBEC	81	fat	did Pierre Trudeau get fat?
R	ROMEO	82	fan	Romeo hands a fan to a Tatar* beauty
S	SIERRA	83	fame	on stage at my book-signing, title* “Sierra”
T	TANGO	84	fare	a death-watch* soldier gets on the bus
U	UNIFORM	85	fall	a cadet(club jack) falls into a net(21)
V	VICTOR	86	fish	the Christian symbol, nun(22), auto-da-fe*
W	WHISKEY	87	fig	a Few Figs from Thistles; reading it with a dram
X	X-RAY	88	fife	Nero(24) plays the fife, dances* while Rome burns
Y	YANKEE	89	fob	a watch-fob hanging from a nail(25) on a US map
Z	ZULU	90	base	an Athenian* ball player at bat on home base

## 8.1 Example: Unix Time

I found an example here:

<https://medium.com/analytics-vidhya/base-36-why-how-its-important-a7b084b02548kg4cebk9>

Pegs, first, converting to upper-case:

KG4	COAL CAT RAY
CEB	CHALK CHIP JUDGE
K9	COAL PEA

Do some forensics on a dead pet.

KG4	KILL the CAT with a RAY.
CEB	CHECK for a CHIP, lest we be JUDGED.
K9	COOL! it's UP.

## 8.2 Example from Spack

Spack (<https://spack.io/>) is a dependency solver for software build systems. It produces directory names in R36 that won't (statistically) collide with SHA-1 hashes and work fine on case-insensitive file systems. Here's an example

```
[+] /home/blahblah/yackyaack/spack_packages/scripts/tmp-spack2/spack/opt/spack/linux-ubuntu18.04-haswell/gcc-7.5.0/gdbm-1.19-rdt674nck5k5hbawjaywb4mv4r72osnq
```

Pegs first, except cheat on pronounceable subsequences or others that appeal to your personal memory!

RDT6	74NC	REDDIT JAW KEY RAY CUFF CHALK
K5K5	HBAW	COAL LAW COAL LAW, CAN JUDGE JAIL FIG
JAYW	B4MV	JAY FIG, BEFORE MOVIE (JUDGE RAY CAKE FISH)
4R72	OSNQ	RAY FAN KEY NOAH, FACE FAME CUFF FAT.

How about a tale of canceling on social media?

RDT6	74NC	REDDIT is AHUSH, a COY WAR, GOOFY and SHOCKING.
K5K5	HBAW	KILL ILL, UGLY WILL; AGONY SHUSH the SHILL, the FAKE
JAYW	B4MV	JAY-bird FAKE, BEFORE MOVIE
4R72	OSNQ	OUR FAN GUY NOAH, with VOICE FAIR, GIVE FIGHT!

### Notes

- CAR for 74 is not ok because it decodes as J. Peg it as KEY RAY, then try sound-alikes.
- FISH is V in R36, not 86. If we had 86, peg it as FEE JAW, then try sound-alikes.
- 72 can't be CAN, because that's H in R36. Peg it as KEY NOAH then try sound-alikes.

## 9 Radix 64

For encoding rixits in R64, add the lower-case letters plus special cases for “+”, 62, and “/”, 63. Stars in the table below mark pegs for the upper-case ASCII codes. They help for remembering the ASCII pair together.

	NATO		ASCII	PHANTASMAGORIA; ASCII-pair refs marked with *
a	alpha	97	back	the jailer* has her back turned to the lion
b	baker	98	beef	the judge* eats a beef dinner in court
c	charlie	99	pipe	smoking while chalking* the hopscotch grid
d	delta	100	thesis	the chef* hasn't finished the thesis yet
e	echo	101	toast	the cop(5) has toast between his fingers
f	foxtrot	102	dozen	a dozen pink (Vered:6) roses in a case*
g	golf	103	twosome	on the golf cart with the cat*
h	hotel	104	dowser	done smoking outside (ash-can*), dowsing inside
i	india	105	diesel	holding a camshaft* from diesel Rolls-Royce
j	juliet	106	wood-sage	Juliet escorts a druid to its NASCAR ride
k	kilo	107	tusk	Alice(11) gives coal* to a tusked troll
l	lima	108	adhesive	dangle a fly-paper into the cage*
m	mike	109	teaspoon	drip icing onto the cake* in the water (Mayim:13)
n	november	110	tights	the snake (Nakhash:14) has no legs, wears tights
o	oscar	111	teetotaler	wearing the Carrie Nation cap*
p	papa	112	Titan	protecting Liz Taylor
q	quebec	113	totem	a fat* Pierre Trudeau kneels before the totem
r	romeo	114	Tatar	Romeo hands a fan* to a Tatar beauty
s	sierra	115	title	on stage receiving fame* for my book titled Sierra
t	tango	116	death-watch	a soldier gets on the bus paying fare* and dancing
u	uniform	117	hotdog	a cadet falls* into a net(21) holding a hotdog
v	victor	118	auto-da-fe	a Christian* nun(22) overlooks the ritual
w	whiskey	119	teddy bear	while reading a Few Figs* from Thistles
x	x-ray	120	dance	Nero(24) plays fife*, looks through dancers' clothes
7	yankee	121	donut	hangs on the nail(25) next to the fob*
z	zulu	122	Athenian	on home base* at bat
+		62	chain	
/		63	chime	

## 9.1 Example Public Key

Don't bother encoding AAAA, which precede and follow a canonical prefix of 16 rixits for (supposedly) a machine-specific part of the key. With the remaining 44 rixits and 8 for the two AAAAs, we get the required 68 rixits. We have 60 rixits to encode.

```
ssh-ed25519
AAAA C3Nz aC1l ZDI1 NTE5 AAAA
IFi4 CpLS hSK/ uUux BxM3 6WwK
C6RD 1/Qn tXQg BV3m pUZq
```

Pegs first, then try sound-alikes:

C3Nz	aC1l	CHALK ME CUFF ATHENIAN, BACK CHALK TEA ADHESIVE
ZDI1	NTE5	BASE CHEF CAM TEA, CUFF FARE CHIP LAW
IFi4	CpLS	CAM CASE DIESEL RAY, CHALK TITAN CAGE FAME
hSK/	uUux	DOWSER FAME COAL CHIME, HOTDOG FALL HOTDOG DANCE
BxM3	6WwK	JUDGE DANCE CAKE ME, JAW FIG TEDDY-BEAR COAL
C6RD	1/Qn	CHALK JAW FAN CHEF, TEA CHIME FAT TIGHTS
tXQg	BV3m	DEATHWATCH FIFE FAT TWOSOME, JUDGE FISH ME TEASPOON
pUZq		TITAN FALL BASE TOTEM

A tale of overeating:

C3Nz	aC1l	CHALK picture, ME adjusting CUFFS, looking down my ATHENIAN nose. Turn my BACK, another CHALK picture; my TIE is flypaper ADHESIVE.
ZDI1	NTE5	On BASE, now. A CHEF flips burgers with a CAMSHAFT and brews TEA. COFFEE, FAIR-traded! SHOPPED WELL.
IFi4	CpLS	The CAMSHAFT stirs EGGS, a DAZZLING omelet, ROE and JACK cheese. I'll be a TWO-TON and KEDGE to bed: HEAVE-HIM!
hSK/	uUux	DESSERTS? WHIFF-EM! CALL a dentist, JIM! my TOOTHACHE JIM! My TOOTHACHE FEELS like a TOOTHACHE, DUNCE!
BxM3	6WwK	CHOW-CHOW! DUNCE CAKE for ME. JAW a FIG and a TOOTHPICK, COOL!
C6RD	1/Qn	CHECK my JAW OFTEN, FAWN CHEF. TO SHAME FOOD TADS.
tXQg	BV3m	DEATH-WISH? VIVA my FAT TWOSOME. SHUSH, VETCH, MY TEASPIT.
pUZq		I'm a TWO-TON, I'll FALL BESIDE the DAYTIME.



## 10 Passwords

Don't make passwords easy for bots to guess. Random, long passwords are best, but hard to remember, even with our systems. They're even more difficult to associate uniquely with a web site.

Modern web sites don't store your passwords in the clear. Virtually all, nowadays, hash your password with a one-way hash (and usually some salt and a nonce challenge). That means you expose nothing by re-using part of a password, so long as it's different from site-to-site.

Pick a difficult prefix, but memorable to you. Mix in a special character and a numeral because many sites insist on such. Start with something picturesque:

*An Octopus has eight legs with suckers.*

Now, partially encode and obfuscate it; this is your personal salt prefix:

```
2Octopu$Ha$8Leg$With0740
```

Finally, append the site name, perhaps obfuscated:

```
2Octopu$Ha$8Leg$With0740EBAY
```

```
2Octopu$Ha$8Leg$With0740APPLE
```

```
2Octopu$Ha$8Leg$With0740OVERLEAF
```

Anyone who knows your personal salt prefix and your algorithm will break you. But bots will just see a random hash, completely different for each site you visit. Remember that hashes are uniformly distributed. The hash of any input is equally likely to be anywhere in the space of hashes. There is no way to tell how similar two input texts  $A$  and  $A'$  are from their hashes, even if  $A$  and  $A'$  differ by no more than one bit. Bots will have no way to know that you are even using an algorithm to construct your passwords.

## 11 Daily Practice: ASCII, Cards, NATO, Hebrew, Dates

Table 1 exploits the coincidence that there are 52 glyphs in the ASCII Latin alphabet, 52 cards in a standard pack, and 52 weeks of the year. There are only 22 Hebrew letters, so the last four rows of each 26 are empty in the Hebrew column.

Table 1 is in groups of 13 corresponding to the suits of playing cards. Each group also contains dates in a quarterly month-week pattern of 5-4-4: 5 weeks in Jan, 4 in Feb, 4 in Mar, etc. The first days of the months are in the easy pattern 155, 274, 263, 153. You may memorize this as a honeymoon tale of TAILLIGHTS, NI-AGRA, UNASHAMED, HOTELMAN. Table 2 focuses on some phantasmagorias specifically for dates.

These are for non-leap years only, so not great for computing day-of-the-week. I have another method for that (the method of Furst, debugged) in Section 15.9.

My daily practice includes another  $156 = 3 \times 52 = 2 \times 78$  three columns of phantasmagorias for the 156 faces of a standard Tarot pack, obverse and reverse. See Section 13. These are a source of vivid mental imagery.

I go down table 1 in my mind when I need to fall asleep. I usually get four or five rows before drifting off, so next time through, I start up where I left off. Sometimes, I recite it backwards just to make sure the end of the table doesn't get soft from lack of repetition. Here are the "mental movies," expanded from the hints in Sections 7, 8, and 9. I include sense of smell because it works for me. It might not work for you.

1. ALPHA — The ALPHA LION (ARYEH) is in the giant, Disneyland TEACUP. He and the teacup are in JAIL and the jailer has her BACK turned to us. A female jailer, being unusual, is easier to remember. Smell the dank musty odor of the jail.
2. BAKER — is serving a BEEF meal to a JUDGE, who is in full magistrate's dress including a powdered wig. The meal is taking place in the little BOOTH (BAYIT) on top of NOAH's Ark. Smell the food.
3. CHARLIE — is riding a CAMEL (GAMAL), looking at himself in the ME (3, mirror) having a hell of a time tying his bow tie while bouncing around on the back of the camel and smoking a PIPE. The camel is dragging ropes with colored sidewalk CHALK behind him making marks on the ground. Smell the pipe tobacco smoke mixed with stinky camel fur and road dust.
4. DELTA — I am pointing a flashlight (RAY) at a giant, brass-and-wooden DOOR (DALET), looking for a keyhole in the rain and the dark (smell mold and mildew and moss and grass and old machine-oil grease on the door's hardware). I open it up and there is a PhD student who never finished his THESIS so must work as a CHEF. I see, hear, and smell the food he is cooking. Alternatively, a laser pointer is etching the blue lines around the margins of the THESIS paper (such thesis paper with blue lines was common in my day).
5. ECHO — Moses is delivering the LAW on mount Sinai. A cop at the bottom of the hill (HAR) is holding up his hand: "stop!" In between his fingers

there are poker CHIPS and pieces of Cinnamon TOAST (smell it). ECHO begins with E, which is Greek Eta and looks like the letter H of *hill* and *HAR*. (*Hill* and *har* are obvious English-Hebrew cognates by a shift of the liquid consonants *l* and *r*.) Smell the desert sands.

6. FOXTROT — Lurch is clenching a pink (VERED) rose in his teeth and lantern JAW. He has an open CASE on his lap filled with a DOZEN more pink roses. Smell the roses.
7. GOLF — I have a golden (ZAHAV) KEY to my golf cart, where my black CAT is waiting with my golf TWOSOME. Smell the fuel of the golf cart mixed with the grass smell of the golf course.
8. HOTEL — I am in the lobby of the beautiful Bellagio hotel with my smelly donkey (CHAMOR) and a #10 coffee CAN full of stinky cigar butts. I have a forked DOWSER rod in my hands. I am waiting in line to pay the exorbitant FEE. The dowsers is vibrating as it detects the nearness of water, or gold, because I am going to pay my fee in gold.
9. INDIA — I am in a junkyard full of old Rolls-Royce DIESEL (smell it) automobiles with their camshafts poking out of their hoods (remember via the trivium that there are more Rolls-Royces in India than in Britain). In the cockpit of one Rolls-Royce is a pilot (TAYYAS) up to his neck in PEA soup.
10. JULIET — with her painted TOES (10) and fingernails, is leading a WOOD-SAGE (dwarf druid) by the hand (YAD) to his brightly colored racing CAR parked in a clearing in the woods. Smell the forest.
11. KILO — Alice of Wonderland (a TOT) comes off her throne (KISEH) to deliver a kilo of COAL to a troll with huge TUSKS. Smell the coal and the body odor of the filthy troll king.
12. LIMA — A girl is sunning herself and holding a silver platter under her chin to ensure it gets TANNED. On the tray is a loaf of bread (LECHEM) with flies buzzing around it (smell it because it's extra hot, baking in the sunshine). She takes a strip of ADHESIVE flypaper and dangles it into a CAGE to trap the flies.
13. MIKE — A pod of orca whales are flipping a Tam-j'Shanter (beanie hat with a red pom-pom) in the water (MAYIM). I take a TEASPOON of water and drizzle it on a gigantic chocolate CAKE, the size of a five-gallon cylindrical paint barrel. Smell the seawater.
14. NOVEMBER — A snake (NACHASH) is sizzling on a patch of hot TAR asphalt (smell it). It has neither arms nor legs, so, of course, it is wearing a shirt with CUFFS, plus TIGHTS instead of trousers (absolute absurdity helps the memory).
15. OSCAR — A TEETOTALER wearing a Carrie-Nation CAP is holding an Oscar cinema award. A tiger with a striped TAIL is clenching a book (SEFER) in its jaws and bringing it to the teetotaler. Smell the tiger: a "zoo" smell.
16. PAPA — is wiping tears from his eyes (AYIN) with a TISSUE. He is overcomes with emotion looking at the beautiful face of Liz Taylor as Cleopatra,

whose picture is held by a giant TITAN robot. Smell Liz's perfume.

17. QUEBEC — A very FAT premier of Quebec is lying face-down on a bed of TACKS and turning his face (PANIM) to a TOTEM to pray. Smell the wood and paint of the totem.
18. ROMEO — has a sparrow (TZIPPOR) with her feet stuck in a patch of sticky TAFFY (smell it) on his shoulder. He brings her to a TATAR princess, who is being FANNED by several slave girls (or boys!).
19. SIERRA — I finally get some FAME from publishing my first book, TITLED "Sierra." I celebrate with a beer pulled from a TAP by a monkey (QUF). Smell the beer.
20. TANGO — A DEATHWATCH soldier with four arms and three swords is carrying Goliath's head (ROSH), which has a giant NOSE. Smell the blood. He tangoes awkwardly toward a bus, where he mounts the steps in a palsy and pays his FARE inside.
21. UNIFORM — A skeleton (SHELED) holding a butterfly net FALLS into a bigger NET along with a man-sized HOT-DOG. Smell it.
22. VICTOR — A NUN with a Christian FISH pendant presides over a victory, a burning at the stake (AUTO-DA-FE). She is holding a pet crocodile (TANIN) by a leash. Smell everything.
23. WHISKEY — A TEDDY-BEAR rests on a bed with a book of Edna St. Vincent Millay's poems: "A few FIGS from Thistles." A small NAMEPLATE rests against a tumbler of WHISKEY on the nightstand (smell the whiskey).
24. X-RAY — NERO is playing his FIFE (not a fiddle) while watching Rome burn. He uses his X-RAY vision to look through the clothes of a bunch of DANCING people in the yard.
25. YANKEE — An American flag is NAILED to the wall. Two nails stick out. A DOUGHNUT with icing and sprinkles (smell it) dangles from one nail and a watch-FOB is looped over the other nail.
26. ZULU — An ATHENIAN comes up to BASE (baseball). Next to him is a NICHE with a bust of Athena dressed in Zulu regalia in it.

It is a small matter to add the date phantasmagorias to the mental movies we already have for the 52 glyphs. It takes only a little more effort to add the "Day-of-Year Phantasmagorias."

Table 1: ASCII, Playing cards, NATO, Hebrew, Dates

	NATO	ASCII	HEBREW	TRANSLATION	SUIT + PIP	DATE	DOY
A	ALPHA	jail	ARYEH	lion	SA	JAN 01	1
B	BAKER	judge	BAYIT	booth	S2	JAN 08	8
C	CHARLIE	chalk	GAMAL	camel	S3	JAN 15	15
D	DELTA	chef	DALET	door	S4	JAN 22	22
E	ECHO	chip	HAR	hill	S5	JAN 29	29
F	FOXTROT	case	VERED	pink	S6	FEB 05	36
G	GOLF	cat	ZAHAV	gold	S7	FEB 12	43
H	HOTEL	can	CHAMOR	mule	S8	FEB 19	50
I	INDIA	cam	TAYAS	pilot	S9	FEB 26	57
J	JULIET	car	YAD	hand	ST	MAR 05	64
K	KILO	coal	KISEH	throne	SJ	MAR 12	71
L	LIMA	cage	LECHEM	bread	SQ	MAR 19	78
M	MIKE	cake	MAYIM	water	SK	MAR 26	85
N	NOVEMBER	cuff	NACHASH	snake	HA	APR 02	92
O	OSCAR	cap	SEFER	book	H2	APR 09	99
P	PAPA	face	AYIN	eye	H3	APR 16	106
Q	QUEBEC	fat	PANIM	face	H4	APR 23	113
R	ROMEO	fan	TZIPPOR	sparrow	H5	APR 30	120
S	SIERRA	fame	QUF	monkey	H6	MAY 07	127
T	TANGO	fare	ROSH	head	H7	MAY 14	134
U	UNIFORM	fall	SHELED	skeleton	H8	MAY 21	141
V	VICTOR	fish	TANIN	crocodile	H9	MAY 28	148
W	WHISKEY	fig			HT	JUN 04	155
X	X-RAY	fife			HJ	JUN 11	162
Y	YANKEE	fob			HQ	JUN 18	169
Z	ZULU	base			HK	JUN 25	176

Table 2: ASCII, Playing cards, NATO, Hebrew, Dates (cont.)

	NATO	ASCII	HEBREW	TRANSLATION	SUIT + PIP	DATE	DOY
a	alpha	back	aryeh	lion	CA	JUL 02	183
b	baker	beef	bayit	booth	C2	JUL 09	190
c	charlie	pipe	gamal	camel	C3	JUL 16	197
d	delta	thesis	dalet	door	C4	JUL 23	204
e	echo	toast	har	hill	C5	JUL 30	211
f	foxtrot	dozen	vered	pink	C6	AUG 06	218
g	golf	twosome	zahav	gold	C7	AUG 13	225
h	hotel	dowser	chamor	mule	C8	AUG 20	232
i	india	diesel	tayas	pilot	C9	AUG 27	239
j	juliet	wood-sage	yad	hand	CT	SEP 03	246
k	kilo	tusk	kiseh	throne	CJ	SEP 10	253
l	lima	adhesive	lechem	bread	CQ	SEP 17	260
m	mike	teaspoon	mayim	water	CK	SEP 24	267
n	november	tights	nachash	snake	DA	OCT 01	274
o	oscar	teetotaler	sefer	book	D2	OCT 08	281
p	papa	titan	ayin	eye	D3	OCT 15	288
q	quebec	totem	panim	face	D4	OCT 22	295
r	romeo	tatar	tzippor	sparrow	D5	OCT 29	302
s	sierra	title	quf	monkey	D6	NOV 05	309
t	tango	death-watch	rosh	head	D7	NOV 12	316
u	uniform	hot-dog	sheled	skeleton	D8	NOV 19	323
v	victor	auto-da-fe	tanin	crocodile	D9	NOV 26	330
w	whiskey	teddy-bear			DT	DEC 03	337
x	x-ray	dance			DJ	DEC 10	344
y	yankee	doughnut			DQ	DEC 17	351
z	zulu	Athenian			DK	DEC 24	348

Table 3: Date Phantasmagorias

	NATO	ASCII PHANT	SUIT + PIP	DATE	DATE PHANT	DOY	DOY PHANT
A	ALPHA	jail	SA	JAN 01	New tie	1	tie
B	BAKER	judge	S2	JAN 08	New view	8	view
C	CHARLIE	chalk	S3	JAN 15	New deal	15	deal
D	DELTA	chef	S4	JAN 22	New onion	22	onion
E	ECHO	chip	S5	JAN 29	New nib	29	nib
F	FOXTROT	case	S6	FEB 05	Love lie	36	image
G	GOLF	cat	S7	FEB 12	Love tune	43	room
H	HOTEL	can	S8	FEB 19	Love tap	50	loose
I	INDIA	cam	S9	FEB 26	Love nudge	57	leak
J	JULIET	car	ST	MAR 05	Irish lie	64	cheer
K	KILO	coal	SJ	MAR 12	Irish tune	71	cad
L	LIMA	cage	SQ	MAR 19	Irish tap	78	cuff
M	MIKE	cake	SK	MAR 26	Irish nudge	85	evil
N	NOVEMBER	cuff	HA	APR 02	Easter wine	92	bun
O	OSCAR	cap	H2	APR 09	Easter pie	99	pub
P	PAPA	face	H3	APR 16	Easter dosh	106	dosage
Q	QUEBEC	fat	H4	APR 23	Easter gnome	113	tedium
R	ROMEO	fan	H5	APR 30	Easter Mass	120	dunce
S	SIERRA	fame	H6	MAY 07	National ache	127	tank
T	TANGO	fare	H7	MAY 14	National tear	134	timer
U	UNIFORM	fall	H8	MAY 21	National note	141	tread
V	VICTOR	fish	H9	MAY 28	National navy	148	adrift
W	WHISKEY	fig	HT	JUN 04	Altar rue	155	taillight
X	X-RAY	fife	HJ	JUN 11	Altar teat	162	tuition
Y	YANKEE	fob	HQ	JUN 18	Altar dive	169	dodgeball
Z	ZULU	base	HK	JUN 25	Altar kneel	176	education

Table 4: Date Phantasmagorias (cont.)

	NATO	ASCII PHANT	SUIT + PIP	DATE	DATE PHANT	DOY	DOY PHANT
a	alpha	back	CA	JUL 02	Summer wine	183	deaf-mute
b	baker	beef	C2	JUL 09	Summer pie	190	tapas
c	charlie	pipe	C3	JUL 16	Summer dosh	197	top-K
d	delta	thesis	C4	JUL 23	Summer gnome	204	answer
e	echo	toast	C5	JUL 30	Summer Mass	211	noted
f	foxtrot	dozen	C6	AUG 06	Moon witch	218	not-if
g	golf	twosome	C7	AUG 13	Moon time	225	union hall
h	hotel	dowser	C8	AUG 20	Moon noose	232	honeymoon
i	india	diesel	C9	AUG 27	Moon Nike	239	number
j	juliet	wood-sage	CT	SEP 03	Job wham	246	enrage
k	kilo	tusk	CJ	SEP 10	Job dice	253	annulment
l	lima	adhesive	CQ	SEP 17	Job tyke	260	nachos
m	mike	teaspoon	CK	SEP 24	Job near	267	unshucked
n	november	tights	DA	OCT 01	Travel tie	274	nacre
o	oscar	teetotaler	D2	OCT 08	Travel view	281	unfit
p	papa	titan	D3	OCT 15	Travel deal	288	navy wife
q	quebec	totem	D4	OCT 22	Travel onion	295	napalm
r	romeo	tatar	D5	OCT 29	travel nib	302	muezzin
s	sierra	title	D6	NOV 05	Restaurant lie	309	mess-up
t	tango	death-watch	D7	NOV 12	Restaurant tune	316	midshipman
u	uniform	hot-dog	D8	NOV 19	Restaurant tap	323	minimum
v	victor	auto-da-fe	D9	NOV 26	Restaurant nudge	330	memos
w	whiskey	teddy-bear	DT	DEC 03	Church wham	337	mimic
x	x-ray	dance	DJ	DEC 10	Church dice	344	mirror
y	yankee	doughnut	DQ	DEC 17	Church tyke	351	malt
z	zulu	Athenian	DK	DEC 24	Church near	348	Morpheus



## 12 Non-Alphabetic Printable ASCII Codes

Use the ordinary pegs for these, because we want to recall them in any order.

Space		MAN	32	spaceman
Bang	!	MAMA	33	with a handgun
Dirk	"	MARE	34	looks like horse's ears
Hash	#	MAIL	35	postmarks on your postage stamps
Cash	\$	MATCH	36	set your cash on fire
Grapes	%	MIKE	37	on stage with Bacchus / Dionysis
Snowman	&	MUFF	38	sleeps until winter time
Tick	'	MAP	39	ticks (bugs) crawling on a map
Frown	(	RACE	40	NASCAR event begins with frown
Smile	)	RAT	41	Rat Fink (hotrodder) lurid grin
Star	*	RAIN	42	star rubies litter rain-soaked beach
Plus	+	RAM	43	cloak caparison on a ram has plus signs
Tadpole	,	REAR	44	backside of my Corvette has tadpoles
Flag	-	RAIL	45	looks like a footrail in a bar
Stop	.	RASH	46	my rash looks like measles' dots
Press	/	RACK	47	my rack of antlers is twisted rightwards
EFES	0	REEF	48	Easy if you know the Hebrew
...	..	...	..	numbers
TEYSHA	9	LAKE	57	
Snake-Eyes	:	LEAF	58	four-leaf clover, snake-eyes on dice
Hybrid	;	LAP	59	cat on my lap with one eye open
Bra	<	CHESS	60	the Queen on giant chessboard wears a bra
Gym	=	JET	61	parallel bars inside a jet airliner
Ket	>	CHAIN	62	the WC chain pulls the ket from the bra
Hook	?	CHIME	63	when the chime sounds, it's question time
Snail	@	CHAIR	64	snails covering your favorite easy-chair
Box	[	BAT	91	catch the bat with bait in a wooden box
Slope	\	BEAN	92	beans as bait behind the sloped trap door
Top	]	BEAM	93	the lid has a wooden beam for strength
Hat	^	BAR	94	go to your bar (pub) in fishing hat
Score	_	BALL	95	piano player in bar drinks a highball
Blip	`	BADGE	96	radar blips detect metallic badges
Embrace	{	DYNAMITE	123	you're embracing dynamite under your coat
Pipe	\vert	TENOR	124	singer has great pipes
Bracelet	}	TUNNEL	125	you lost your bracelet in a taxi in a tunnel
Worm	~	DUNGEON	126	you slink into dungeon like a worm

## 13 Tarot

Tarot cards have vivid imagery and powerful, emotional, words, great for memory.

There are 78 Tarot cards in a standard Rider-Waite pack. That's not divisible by 52, but if we consider the reverse images (upside-down cards) as distinct to the obverse, and most cartomancers do, then we have 156 image-word combinations, and that is divisible by 52. Thus, we get an additional three columns of picture words for daily practice (11), where we associate them with standard playing cards, the NATO alphabet, the ASCII codes, weeks of the year, day of the year, and Hebrew words.

The Tarot suits are wands, clubs, swords, and pentacles, obviously related to the suits of a standard pack, but different enough that we'll just keep those two sets of suits distinct in our minds. There are 14 cards in each suit, but only 22 trumps, aka majors. Let's take the Knights out of each suit and append them to the majors so that the minor suits have 13 cards each, including three court cards — page (like "jack"), queen, and king.

NATO	TAROT MAJOR OBV	INCLUDING KNIGHTS OBVERSE	TAROT MINOR REV	ALL REVERSE	TAROT MINOR OBV	ALL OBVERSE
ALPHA	MAG	willpower	wA	boredom	WA	inspiration
BRAVO	PST	intuition	w2	hesitation	W2	independence
CHARLIE	EMS	motherhood	w3	obstacles	W3	expansion
DELTA	EMP	fatherhood	w4	transience	W4	home
ECHO	HEI	tradition	w5	dodge	W5	competition
FOXTROT	LOV	union	w6	ignored	W6	recognition
GOLF	CHA	drive	w7	give up	W7	protect
HOTEL	STR	strength	w8	panic	W8	rapid
INDIA	HRM	contemplation	w9	exhaustion	W9	grit
JULIET	WHL	luck	wT	micromanage	WT	responsibility
KILO	JST	causation	wJ	procrastination	WJ	excitement
LIMA	HNG	perspective	wQ	selfishness	WQ	courage
MIKE	DTH	cycle	wK	overbearing	WK	overcome
NOVEMBER	TMP	patience	cA	blocked	CA	spirituality
OSCAR	DVL	addiction	c2	tension	C2	partnership
PAPA	TWR	destruction	c3	gossip	C3	friendship
QUEBEC	STA	faith	c4	acceptance	C4	apathy
ROMEO	LUN	misdirection	c5	peace	C5	disappointment
SIERRA	SUN	joy	c6	leaving home	C6	return home
TANGO	JDG	reckoning	c7	diversion	C7	daydreaming
UNIFORM	WLD	completion	c8	avoidance	C8	disillusioned
VICTOR	FOO	innocence	c9	smugness	C9	luxury
WHISKEY	KNW	fearless	cT	broken family	CT	fulfillment
X-RAY	KNC	idealist	cJ	immaturity	CJ	dreamer
YANKEE	KNS	defender	cQ	self-sacrifice	CQ	compassion
ZULU	KNP	efficient	cK	cold	CK	emot control

NATO	TAROT MAJOR REV	INCLUDING KNIGHTS REVERSE	TAROT MINOR REV	ALL REVERSE	TAROT MINOR	ALL OBVERSE
alpha	mag	illusions	sA	chaos	SA	breakthrough
bravo	pst	repression	s2	hobson's	S2	indecision
charlie	ems	barrenness	s3	forgiveness	S3	heartbreak
delta	emp	tyranny	s4	restless	S4	rest
echo	hei	rebellion	s5	resentment	S5	conan
foxtrot	lov	one-sided	s6	resistence	S6	transition
golf	cha	directionless	s7	conscience	S7	cunning
hotel	str	self-doubt	s8	freedom	S8	trapped
india	hrm	isolation	s9	anxiety	S9	hope
juliet	whl	loss	sT	nadir	ST	betrayal
kilo	jst	dishonesty	sJ	deception	SJ	curiosity
lima	hng	stalling	sQ	critical	SQ	clarity
mike	dth	stagnation	sK	cruel	SK	discipline
november	tmp	excess	pA	bad investment	PA	venture
oscar	dvl	recovery	p2	overwhelmed	P2	priorities
papa	twr	aversion	p3	group conflict	P3	teamwork
quebec	sta	insecurity	p4	stingy	P4	frugality
romeo	lun	confusion	p5	receive charity	P5	poverty
sierra	sun	sadness	p6	strings attached	P6	charity
tango	jdg	doubt	p7	wasted work	P7	perseverance
uniform	wld	emptiness	p8	no motivation	P8	high standards
victor	foo	naivety	p9	spendthrift	P9	fruits of labor
whiskey	knw	reckless	pT	fleeting success	PT	legacy
x-ray	knc	moody	pJ	uncommitted	PJ	diligence
yankee	kns	feckless	pQ	jealous	PQ	abundance
zulu	knp	workaholic	pK	indulgence	PK	prosperity

## 14 People's names

Take the name, convert to a number using the usual rules. Memorize the number as usual using the memorization technique. When recalling, you can use pinfruit.com or other means, enter the number and it will print all possibilities. There will be more than one, but usually you will remember at this point which one is the correct one. And if not, all the other ones are soundalike, so you will not make a big mistake, which is much better than not knowing the name at all.

Examples.

Jordan -> 6412 -> Jordan, Sheridan (memorize, e.g., as *sure tone*)

Brian -> 942 -> Brian, Brain, Bryan, Brown (memorize, e.g., as *hebrew now*)

Ondrej -> 214 -> Andrew, Andrea, Andrei (memorize, e.g., as *winter*)

Pick words and create a movie related to something that you know about the person (for example they like WINTER sports like hockey, or they are learning HEBREW NOW, or they use SURE TONE when coaching).

## 15 APPENDICES

### 15.1 Pegs and Phantasmagorias

I blogged out the basics of my peg method here:

<https://rebcabin.wordpress.com/2010/11/21/memory-pegs/>

### 15.2 Sound-Alikes

Finding a sound-alike is “computing” or “calculating” a picture word. For example, the peg for 37 is MIKE. Picture a microphone in your hand and feel the electrical tingling. Adding synaesthesia or emotion to pegs helps my memory. It may not help other people. Do what is best for you!

To calculate some nearby picture words, I get

**mica** Glittering stone; feel grit on your fingers.

**mug** A big cold beer.

**muck** Smell the barnyard.

**Mecca** Picture the kaaba and the pilgrims circulating.

**hammock** Take a snooze.

### 15.3 Building and Revising Chains

Take time building phantasmagorias so that ideas flow. It’s bad to have a break part-way-through, causing a pause or failure in recall. You must be *fast* and *accurate*. A break or even a soft link in a chain is cause for starting over and building a new chain.

### 15.4 One Peg Set, Forever

Choose pegs that work for you, then **NEVER CHANGE THEM**. Recall must be instantaneous. Whenever you see or think of a number, you must recall the peg without effort.

I regret changing a few pegs once. I did it for teaching purposes because my originals got dated. For example, 3 for *May* became *me* because no one today knows what a May-pole is. Every time I see 3, however, I picture a May-pole instead of myself in a mirror. I learned May-pole first (from Furst and from my Dad). The switch slows me down even though I made the switch long, long ago.

**DON’T CHANGE PEGS AFTER LOCKING THEM IN**

### 15.5 Alternatives for Hex

#### 15.5.1 Hex Method 1

One way to encode hex is to map A-F to 010-015. Permanent pegs are in all caps.

010 A	HOSTESS assiduous	SOUTH-SEA sideways	sweets	cities	assets	stays
011 B	ESTATE astute steed	STOUT hesitate stud	studio sedate	statue sit-down	iced-tea state	wasted steady
012 C	STEIN Satan stun	SEDAN Sweden sudden	satin sadden sweeten	stain sit-in	stone sodden	Estonia stand
013 D	SODIUM wisdom	STEAM	stem	esteem	stoma	stamina
014 E	OYSTER Austria hysteria stare swatter	CIDER Easter ouster stir	cedar astir satire store	stair astray satyr story	sweater austere setter straw	steer history star suitor
015 F	SADDLE hostile	STOOL sadly	still settle	stall stale	steel steal	style

Here is the GUID, again.

5D00E7AA-C15C-44A5-93FA-A4DE6750B28A

How about a pseudo-poem about wildlife:

5D00E	OWL of WISDOM and SASSY STARING eyes.
7AA	HAWK, look SIDEWAYS left and SIDEWAYS right.
C15C44	STAND TALL, SUDDEN HARRIER
A5	and ASSIDUOUS OWL!
93FA	PUMA, STEALthy CITIZEN,
DE6750	STAMP! STRIKE! SHAKE, LASSIE!
B28A	Don't HESITATE. ENOUGH, CITIZEN!

### 15.5.2 Hex Method 2

Another technique for hex is to exclusively use the single-word pegs TOES-TISSUE [10..15] for the hexits [A..F]. For decimal digits that spell in 10-15, use two 1-digit pegs. For example, don't spell 15 as TAIL; that's for F exclusively. Spell it as TOE EEL or some such.

Here we go, pegs, first:

5D00E7AA	LAW TAM SAUCE TAR KEY TOES TOES
C15C	TAN TEA TAIL TAN
44A5	REAR TOES LAW
93FA	BEAM TAIL TOES
A4DE6750B28A	TOES RAY TAM TAR CHALK LACE TOT REEF TOES

Ignore 'ing' in the following, wherein we are assaulted by a Scottish traffic cop:

5D00E7AA	A Scottish policeman (LAW) wearing a TAM o'Shanter gives me SASS. Pulls me over on the TARMac and demands my KEY. I TOSS it on his TOES.
C15C	"DONE IT WELL, laddie!"
44A5 93FA A4	THEN ROARING, "'TIS LOW, you BUM! 'TILL he EATS TAZER!'"
DE6750B28A	"DAMN TAR! SHAKE LESS! TIGHT ENOUGH on my TOES!"

Method 1 produces more compact phantasmagorias and extends to higher radices.

### 15.5.3 SHA-1 by Hex Method 1

a638 1b63 d532 69ba 418e  
5fb1 bd50 3950 860d d679

Using Method 1, ignore common grammatical suffixes like “-ing” and “-ful;” prepositions like “to” and “of;” pronouns and relative adjective, words like “this,” and “that;” forms of the verb “to be,” and other obvious connector words like “the” and “a.”

Let’s take a look at a statue in the artist’s studio:

A638	SIDEWAYS CHAMFER?
1B6E	the TOE of this STATUE is a SHAM
D532	SODIUM is not ALUMINUM!
69BA	its SHAPE in the STUDIO is SIDEWAYS
418E	ARTFUL HISTORY
5FB1	LAY a STOOL by the STATUE’S TOE
BD50	STATUE is STAMPED “ALICE”
3950	MAYBE ALICE VOUCHES for the STAMP
D678	STAMP of a JACOBIAN?



## 15.6 Alternatives for Radix-64

### 15.6.1 Methods 1 and 2, Again

A method-1 (15.5.1) encoding of rixits, reserving 010 through 064, follows:

0	8	010	016	024	032	040	048	056	063
v	v	v	v	v	v	v	v	v	v
0	1	2	3	4	5	6	7	8	9
A	B	C	D	E	F	G	H	I	J
K	L	M	N	O	P	Q	R	S	T
U	V	W	X	Y	Z	a	b	c	d
e	f	g	h	i	j	k	l	m	n
o	p	q	r	s	t	u	v	w	x
y	z	+	/						

#### 1. Advantages of this encoding:

- There are so many picturesque words in English that begin with S that we have a deep well to draw from.
- The code for a letter is its numerical value in R64: A = 10, O = 24, etc.
  - Disadvantage of this advantage: we're working on memory, not on evaluation, so maybe this feature isn't so interesting.

#### 2. Problems with this encoding:

##### (a) Off-By-One Mental Arithmetic

Notice that 024 is O, but you may remember that O is also the 15-th capital glyph of the alphabet. Adding 10 for the first ten digits of the encoding,  $15 + A = 15 + 10 = 25$ , not 24. This is an opportunity for error at speed. But we can deal with it.

To encode O, remembered as the 15-th letter of the alphabet, first subtract 1 to correct the off-by-one error, getting 14. Then add 10 to account for the leading ten digits 0..9 of the encoding, getting 24. Prepend the leading  $s = 0$  for the radix to get 024, say *sunrise*.

Encode: subtract 1, add 10, i.e., add 9.

Here's a slogan:

**Encode: enhance nine.**

$O \rightarrow 15 \rightarrow 24 \rightarrow 024 \rightarrow \text{sunrise}$ .

To decode sunrise = 024, remove the leading  $s = 0$  to get 24. Subtract 10 to get 14. Add 1 to get 15, the 15-th capital letter.

Decode: add 1, subtract 10, i.e., subtract 9.

**Decode: deduct nine.**

$\text{sunrise} \rightarrow 024 \rightarrow 24 \rightarrow 15 \rightarrow O$ .

For small letters, add and subtract 26.

$o \rightarrow 15 \rightarrow 41 \rightarrow 50 \rightarrow 050 \rightarrow \text{solstice}$ .

$\text{solstice} \rightarrow 050 \rightarrow 50 \rightarrow 24 \rightarrow 15 \text{ in lower case}$ .

It's a lot of mental arithmetic, but that's fun, too. Balance the fun factor against the need for recall speed and accuracy.

(b) ASCII Popups

If you've memorized ASCII, you already have pegs for A-Z and a-z. They will pop up at speed. You can either force them away; use them as with Method 2 above, accepting the trade-off risk of collisions and ambiguity, or go with ASCII in my first method.

### 15.6.2 Structure in Public Keys

Generating another public key on my machine, notice that the first 6 quads, 24 Rixits, 64 bits each, 1536 bits, are the same in the two keys:

```
ssh-ed25519
AAAA C3Nz aC1l ZDI1 NTE5 AAAA <~~~ for the machine?
IKWf n2B6 AjfK MNwX +Ekt d7mx
nhwi GALP JfEO oEwk 2X/u
```

By induction, assume without confirmation or authority that the first 24 Rixits are for the machine and  $11 \times 4 = 44$  Rixits for the rest. That's 2816 bits.

The total is 4352 bits, or 68 Rixits, consistent with this article:

<https://medium.com/risan/upgrade-your-ssh-key-to-ed25519-c6e8d60d3c54>

That's it for cross-checking; on to memorization.

Let's tell a tale of poisoning an indiscreet lover.

### 15.6.3 The Supposed Machine Prefix.

Don't bother with the leading and trailing AAAA, assuming they're always present (TODO: check that!), leaving C3Nz aC1l ZDI1 NTE5:

C3Nz	SATIN HEM in a CINEMAtic SASH-WEIGHT
aC1l	SMOOCH - STAINED, a HOT OATH
ZDI1	a SMALL STEAMing from the STOVE, with TEA brewing
NTE5	CYANAMIDE for a SNOBBish SUITOR's ALE

### 15.6.4 The Unique Parts

Now in groups of 3 or 4 quads:

IFi4 STUFF the STILL for his ZERO-HOUR HURRAH  
CpLS SWEETEN the SALT with a SCENT of SNUFF  
hSK/ a SERUM SINFUL and SINISTER for his SASHIMI  
uUux a SOLUTION SEMISWEET, no SLUDGE in this SLOP  
  
BxMe SATED, he SLIPS into ASSONANT WHIMsies  
6WwK HUSHed SOMNOLENCE, SOULFUL SNOOZing  
C6RD SATIN HUSH, SNUG STOMACH  
lQn/ DIE, SWITCHMAN! SNATCH CERBERUS  
  
tXQg SLOWLY SEMIMOBILE, SNITCH ! SURRENDER!  
BV3m SEDATED, to the CEMETERY HOME, SERF!  
pUZq SLIDE into OSMOSIS, ASSIMILATE SLAIN!

### 15.6.5 Old Old Method

I blogged out a more trivial method, similar to method 2 for GUIDs some time ago:

<https://rebcabin.wordpress.com/2011/03/06/memorizing-in-base-64/>

This method maps the rixits directly to the pegs. The mental arithmetic is the same as above: computing a peg number from characters A..Z and a..z by adding 9 and-or-26. We just lose the leading S, so we lose some richness to the vocabulary.

### 15.6.6 Radix-64 Method 3

Another method, which I have not tried, is to map the alphabetic letters to their S-enhanced letter numbers, as in

A	01
B	02
...	...
Z	026
a	027
b	028
...	...
z	052

The decimal digits go to their regular pegs, 0..9. This is a variation of the old-old-method (15.6.5).

## 15.7 Memorizing Dates

For most kids, history class is torture because of the need to memorize dates. But that's a snap with the peg system. I still remember from 11-th grade that

RAY TAN CHAT

was the beginning day of the Civil War, because you tanned me with a RAY gun and that ended the peace talks. April 12, 1861.

## 15.8 Memorizing a Shuffled Card Pack

I blogged this out in December, 2010, starting here:

<https://rebcabin.wordpress.com/2010/12/08/take-the-diamonds/>

Here is a scrape of the relevant blog posts. Note that the encoding of the cards is totally unrelated to that in the [daily-practice] section (Section [BROKEN LINK: daily-practice]). Don't get them confused, and pick only one if you find it difficult to store two encodings.

### 15.8.1 Take the Diamonds

Do you smell machine oil the instant you see the Diamond Queen from a pack of cards? How about cigarette smoke when you see the Diamond Six, or baby powder when you see the Diamond Ace? Read on . . .

Take the entire suit of Diamonds out of a pack of cards and lay them out in order, from Ace to King, in front of you on a table. Notice that the word "diamond" begins with a D, and recall that the consonant sound D stands for the number 1 – or for the digit "1" in combination with other digits, as we have been using it so far. Think of the suit, diamonds, as the tens digit in combination with the plain digit of each card. Then the diamond Ace will be 11 – 1 for the tens digit from "diamonds" and 1 for the Ace itself, since it's the first card in the suit. The Ace through the Nine come out with no problem at all and they hook up immediately with our memorized, permanent pegs. As you go through the list below, really take some time to stare at the card and visualize the mental picture right on the face of the card. If the deck is one you can write on or draw on, draw a little cartoon or write the picture word on the face of the card. You'll be using these cards to help you lock in the pegs:

<i>Card</i>	<i>Num</i>	<i>Peg</i>	<i>Mental Picture</i>
D A	11	tot	Alice from Alice in Wonderland. Smell baby-powder in the air.
D 2	12	tan	Someone tanning herself holding a reflective tray under her chin. Smell tanning oil.
D 3	13	tam	A tam-o-shanter tartan cap with red pom-pom on the head of a Scottish warrior in full kilts. Smell heather.
D 4	14	tar	A sizzling hot stretch of deserted highway, so hot the tar is sticky. Smell the tar, too.
D 5	15	tail	The orange-and-black striped tail of an enormous tiger. Imagine a zoo smell.
D 6	16	tissue	Someone wiping tears from her eyes after remembering an emotional event. Smell cigarette smoke and think of the song "Smoke Gets in Your Eyes."
D 7	17	tack	A huge thumbtack or map-pin holding something on a big cork board. Smell fresh ink and paper.
D 8	18	taffy	A big blob of hot, sweet-smelling pink and green taffy candy, stuck to your fingers getting all over the card.
D 9	19	tap	A beer tap spilling beer all over the card, splashing on your clothes and making a smelly mess.

Notice I've added smell to the associations, and even a song. We can really take this idea far and involve taste and touch over all the pegs, and we may do that in the future — it will be an interesting exercise. This is one of the things that Eran Katz suggests to do in his books (highly recommended), and since smell works very well for my personal memory, I'm adding it to my permanent inventory and inviting you along for this addition.

We have only four cards to go. The diamond 10 is pretty easy – I'm just going to pick the peg "toes" and picture the woman painting her toenails all different colors. And the smell? Toenail Polish! Easy.

And for the last three, let's promote the 1 to the hundreds digit and sneak in some three-digit pegs (from the third layer – a preview). Notice we may have some extra consonant sounds on the ends of the three-digit pegs. They're throw-aways, because the system doesn't go to four or more digits at a time. 1,110 permanent pegs is quite enough!

<i>Card</i>	<i>Num</i>	<i>Peg</i>	<i>Mental Picture</i>
D J	111	teetotaler	Picture a prissy little man with ill-fitting clothes, a crooked bow tie, thick eyeglasses and a pocket protector pontificating on the virtues of total abstinence from alcohol. Smell Lysol (too much cleaning)
D Q	112	titan	Picture an enormous robot with rivets all over its shell. Smell machine oil and steel.
D K	113	totem	Picture a Native-American totem pole with effigies of bears, salmon, and a huge, winged eagle on top. Smell a campfire and the wood of the totem pole.

That's it. Take your suit of diamonds along with you, pull it out and practice the visualization and imaginary smelling exercise whenever you find yourself having to kill time. Just a few times over this and you won't need the cards any more. You will INSTANTLY smell and see taffy when you think of the Diamond-8. The Diamond Queen will INSTANTLY bring to mind the smell of machine oil and steel. And vice versa, and through the entire suit.

### 15.8.2 Shuffle the Diamonds

... and go through the 13 cards, in order, forming a linked sequence of vivid mental pictures. Here's what I came up with yesterday

Alice in Wonderland (tot = 11 = DAce) is wiping a tear from her eyes with a tissue (16 = D6). She is standing by a sizzling hot highway and her feet are sinking into the

tar (14 = D4). Across the highway, a six-foot tall beer

tap (19 = D9) is gushing beer onto the tarmac. The beer boils on contact, releasing a strong beer smell, and runs gently downhill into a grid of huge, multicolored

tacks (17 = D7) pushed into the tarmac. These tacks are also piercing and holding down a tiger's

tail (15 = D5), and the tiger is roaring in pain and licking a huge lump of pink-and-green alcoholic

taffy (18 = D8) by the other side of the road from Alice to soothe his pain. In front of the tiger, a

teetotaler (111 = DJ), specially summoned from AA for the situation, is wagging his finger at the tiger and delivering a stern warning about the evils of alcoholic taffy. The other hand of the teetotaler is exposed to the hot sun and is getting quite a

tan (12 = D2). With that overtanning hand, he is holding the right hand of a steel robot

titan (112 = Q2) who is wagging his head, clicking and beeping, emitting the odor of machine oil, and, with his other hand, painting his

toenails (toes = 10 = D10) and also the toenails of the

totem (113 = DK) standing right next to him (smell the toenail polish). The top of the totem is obscured by a huge

tam-o-shanter (13 = D3), which is baking in the hot sun and emitting a strong smell of roasting wool

Now, I came up with this phantasmagoria yesterday morning in less than one minute, I did not think about it all day, the day was very, very busy with other activities, I went out for a couple of drinks after work, slept through the night, and didn't think of this for a whole 24 hours until just now. I remembered it almost perfectly (I forgot the tacks, and all that means is that I didn't form the mental picture vividly enough – I had the tiger's tail threaded around the tacks, but I

recommended to you to imagine the pins pushed THROUGH the tail, adding the roaring and pain to the phantasmagoria). If I had been more careful, I would have remembered it perfectly.

Think about this: by exploiting the visual imagination and dragging in all the other senses – feeling the heat, smelling the smells, hearing the sounds, I was able to remember 24 hours later, after a minute of looking, a shuffled suit of cards (and, if I had been more careful, I would have remembered it perfectly!). When I am in practice, I can memorize an entire shuffled deck in 2 minutes, while you deal them out (I'll teach you the other suits later, while we go through the second layer of the memory system). When I am out of practice, 4 minutes is plenty. Even better, I can memorize 39 of the cards and then tell you the remaining 13 cards just by running down the suits in my mind and naming the cards that aren't in my phantasmagoria. I can even do it tomorrow from yesterday's shuffle.

This is a great party trick. The pros can do this really fast. The athletes in the world memory championships ([http://en.wikipedia.org/wiki/World\\_Memory\\_Championships](http://en.wikipedia.org/wiki/World_Memory_Championships)) can do it in less than 30 seconds, and they can memorize the order of 8 shuffled decks in 15 minutes.

Try this. You will amaze yourself. Then, think of practical applications.

### **15.8.3 The 40s and Hearts**

Back with the 10's we learned pegs to memorize a shuffling of the diamond suit, in any order. This time, we'll learn pegs for the 40's and for the hearts suit. The reason to associate hearts with the 40's is that the first important consonant in 'hearts' is 'r,' a digit 4, which we promote to the number 40 for the application of memorizing cards. Here are my permanent pegs for the 40's. As always, feel free to tailor this set to your own memory style

Num	Sound	Peg	Description	Others
40	RS	race	A NASCAR race; colorful cars going around; oil, gasoline, smoke, loud engines	rose rice horse
41	RT	rat	huge, greasy rat scurrying through garbage in an alley; garbage smell, long teeth	road word radio
42	RN	rain	driving rainstorm; soaked clothes; dark street trying to hail a taxi; no visibility	huron horn roan
43	RM	ram	giant ram with huge, curled horns; it's saddled and you're riding it; leather & wool	arm worm room
44	RR	rear	distinctive rear end of Corvette automobile; driving it with the top down	rare roar horror
45	RL	rail	brass rail at a wood-paneled bar; can't reach it with your feet; beer and darts	whorl whirl reel
46	RJ	rash	painful, red rash on your forearm	ridge Raj rush
47	RK	rack	rack of antlers on caribou head mounted over the fireplace	wreck rag rug
48	RF	reef	coral reef; brightly colored tropical fish; SCUBA diving gear; rubber, seawater	roof rave wharf
49	RP	rope	heavy burlap or hemp rope in a coil or attached to the thing-to-remember	rib robe harp

Those pegs cover the playing cards Heart Ace (41) through Heart Ten (40). We need three more for the face cards

Heart Jack: 411, rat-a-tat-tat; picture a machine gun; you're carrying it and shooting it at things

Heart Queen: 412, rattan; picture white wicker furniture

Heart King: 413, radium; picture the item-to-remember pulsing with the (imaginary) green glow of radioactive radium.

Pick the diamonds and the hearts out of a pack of cards, shuffle them, and prepare to memorize the order. Take your time: don't rush it. Go for accuracy. The speed will come naturally with practice. Here's an example of a run I did just now, building this story in my mind in real time. If you follow along and build the miniature movie in your mind, you will no trouble recalling the order of the cards. Take special effort to chain the pegs one to another (yes, this is a combined application of chain-memory and peg-memory):



- (D2) I'm outside in the hot sun getting a *tan*, but I'm really burning and it hurts
- (H5) There's a tropical drink station on the beach and there is a very prominent brass *rail* where I want to rest my feet while I order a cool drink, but I can't quite reach it with my feet
- (HQ) I sit in a stool made of white *rattan*; hear the distinctive creaking sound as you sit and try to reach the rail with your feet
- (H3) Sitting next to me is a guy holding on to the reins of his riding *ram* and the ram is chewing the rattan (this is an important connection as it's easy to forget the rattan without making the ram do something with it)
- (H10) he pulls out of his pocket a scale model of a NASCAR *race* track and places it on the counter, and the cars start going around
- (DA) Alice from Wonderland (a *tot*) walks up to take a look at the model race track
- (DK) she puts a pint-sized *totem* pole right in the middle of the oval racetrack
- (HJ) one of the effigies in the totem has a machine gun in its hand and starts shooting at the cars (rat-a-tat-tat)
- (H4) many of the cars are Corvettes with their distinctive *rear* ends (four circular red lights, 2-by-2). The bullets are shooting out the red lights
- (DJ) a teetotaler comes up to us at the tropical bar and lectures on the violent side-effects of drinking alcohol, using the machine-gunning totem as evidence
- (H7) he points to a *rack* of antlers mounted on the wall of the tropical bar as further evidence: the hunter must have been drinking to go after such a huge caribou
- (D9) we all laugh and him and order the bartender to pull us more beers from the *tap*
- (H8) some divers out in the *reef* hear the sound of the enormous beer tap pouring beer and pop their heads out of the waves and shout at us to pour some for them, too
- (D3) we notice that some of the divers are wearing *tam-o-shanters* over their dive helmets
- (D5) tigers (with orange-and-black striped *tails*) run along the beach into the waves and snatch the tam-o-shanters in their jaws.
- (D6) they run a big circle over toward us, stop and wipe tears from their eyes (with *tissues*) out of regret for stealing the tam-o-shanters
- (H2) all of a sudden, it clouds over and a driving, tropical rain soaks the weeping tigers with tams in their teeth and pounds on the roof of the tropical drink station
- (HK) the weather radio in the back of the bar starts to blare news at a high volume about the storm and pulse very brightly with green *radium* glow
- (HA) huge black *rats* scurry out from behind the bar, scared out by the sudden noise of the radio – see the radium glistening on their greasy, rain-soaked fur

(D4) the rats run all the way out to the \*/tar/\*mac in the parking lots near the beach, and the hot tar is steaming from the sudden rain; the rats are jumping on the hot tar

(D8) they run over to piles of hot green and white *taffy* piled up in one corner of the tarmac and start eating it voraciously

(D10) on top of the piles of taffy are young women painting their \*/toe/\*nails – yes, in the driving rain – and dripping the toenail polish on the taffy

(D7) the toenail polish is running down the taffy and flowing around the shafts of enormous thumb\*/tack/\*s embedded in the base of the piles of taffy

(H6) under each thumbtack is a doctor's prescription for *rash* medication; it's going to help with all the sunburns we got

(H9) tied to each prescription is a burlap *rope* (don't know where this is going, yet, but just tie them up

(DQ) at the other end of each rope is a *titan*, a robot, pulling on the rope

That's it – now close your eyes and run through the movie in your mind, and the cards will play out in order. Try not to go back and peek. If you have to do that, it means that you didn't form a sufficiently strong association linking one mental picture with the next. Practice will make perfect!

tan, rail, rattan, ram, race, tot (Alice), totem, ratatattat, rear (shooting out the Corvette brake lights) teetotaler, rack, tap, reef, tam, tail, tissue, rain, radium, rat, tar, taffy, toes, tack, rash, rope, titan

D2, H5, HQ, H3, H10, DA, DK, HJ, H4, DJ, H7, D9, H8, D3, D5, D6, H2, HK, HA, D4, D8, D10, D7, H6, H9, DQ

I had to really work hard to recall rattan and rear, which means I didn't form the connected images strongLY enough first time around. practice practice practice.

#### 15.8.4 The 70s and Clubs

By now, you know the drill. The 70's are another decade in the regular peg list of the second layer of the system. Just as the 10's stand for the diamonds (because the 'D' of 'diamond' is a sound for 1, and 1 is the first digit of each visual memory word for the diamond suit), and the 40's stand for hearts (because the 'R' of 'heaRts' is a 4-sound), the 70's stand for the club suit. You will get three bonus visual-words from the third layer for the Jack, Queen, and King of clubs. Practice with the club suit alone, locking in the visual words, then mix in the hearts and diamonds. You will be able to memorize a shuffled pack of these 39 cards and impress yourself. Without further ado, here is my list:

Num	Sounds	Card	Peg	Description	More
70	KS	C10	case	leather attache case with handcuffs	gas goose wax coat kite goat cane canoe gun cameo comb wigwam
71	KT	CA	cat	black cat, green eyes	choir crew curry claw collie eagle
72	KN	C2	can	empty coffee can, label torn off	cash gaucho gauge gong kayak keg
73	KM	C3	cam	camshaft from a big detroit V8 engine	calf coffee guava cape cowboy
74	KR	C4	car	colorful NASCAR race car	guppy cathode cathedral quietude cotton catnip kidney
75	KL	C5	coal	black messy coal or hot one	academy godmother Gotham
76	KJ	C6	cage	cage for an animal (rabid dog?)	
77	KK	C7	cake	over-tall, toppling wedding cake	
78	KF	C8	cuff	dress-shirt cuff hanging out of ill-fitting suit	
79	KP	C9	cap	baseball cap	
711	KTt	CJ	cadet	Navy cadet in dress uniform	
712	KTN	CQ	katana	samurai chopping with katana sword	
713	KTM	CM	catamaran	absurd inflated raft catamaran	

### 15.8.5 The 90s and Spades

This is the last set of ten, permanent peg words in the second layer of the system, with three bonus words from the third layer so we can memorize the last suit of a card deck, the spades. Every number in the 90's begins with the digit 9, and the consonant cluster for 9 is B and P. The word "Spade" encodes to 091; ignore the leading zero and pick the 9=P to stand for the spades, so the spades will come from the 90's. In later blogs, we'll summarize the entire second layer, add a couple of odds and ends, and work on applications like card tricks.

Num	Sounds	Card	Peg	Description	Others
90	PS	S10	Base	Home base in a ball field	abess boss pizza pot bath pod bun piano ebony bum opium puma
91	PT	SA	Bat	baseball bat in the hands of a slugger	pier bear opera pool belly bowl bush pasha peach beak book bug beehive buffet puff babe bobby pope habitat beatitude pas de deux beatnik bedouin petunia badminton speedometer epidemic
92	PN	S2	bean	Steak-size kidney bean steaming on a bed of lettuce	
93	PM	S3	beam	Huge timber in the low ceiling of a pub; hit your head on it	
94	PR	S4	bar	The pub itself: crowded, loud, stuffy	
95	PL	S5	ball	Baseball: stitches, tacky leather, autographs	
96	PJ	S6	badge	Heavy, bronze sheriff's badge pulling your clothes	
97	PK	S7	back	exposed back of ballerina	
98	PF	S8	beef	Steak dinner (don't confuse with bean)	
99	PP	S9	pipe	Rene Magritte's famous painting; or Einstein	
911	PTT	SJ	potato	baked potato with all the fixin's; see 92, 98	
912	PTN	SQ	baton	relay race; pass the baton	
913	PTM	SK	podium	lecturer or preacher at the podium	

## 15.9 Calculating Day of the Week

I blogged this out here:

<https://rebcabin.wordpress.com/2015/07/03/590/>

Here is an edited scrape:

Remember Dustin Hoffman's character in the movie "Rainman," who can instantly say the day of the week for a given date? Of course, he was an autistic savant and probably didn't know and certainly couldn't teach how he does it, but here is a method I learned from my Dad [Furst has the same method].

Preliminaries:

Do all math mod 7, that is, you only need to keep the remainder of the results of any calculation after dividing by 7. Thus, 15 is 1, 33 is 5, 49 is 0, etc.

Every day of the week has a number, starting with 1 for Sunday and ending with 0 for Saturday. Your goal is to convert any Gregorian calendar date into such a number.

Jan and Feb belong to the year BEFORE. The reason is that leap years add a day at the end of Feb and it makes all the math easier to think that Jan and Feb 1963 are really part of 1962, for example. Also remember that the Romans started their year with the month of March. Maybe it was for a similar reason.

Example:

29 Nov 1872.

First convert the century. 1900 happens to be a 0, so that's really really easy and convenient. The numbers for all other centuries go in a cycle 6 4 2 0, which is also really easy to remember: "AGES RUN IN SEQUENCE." Because 1900 is 0, 2000 is 6, 2100 will be 4, 2200 will be 2, etc. 1800 is 2.

Keep 2 in your head and move forward.

Now convert the year, and there are two steps. First, the year mod 7 because each year is one day longer than a multiple of 7, namely 364.  $72 \bmod 7$  is 2. Add 2 to the 2 we're carrying to get 4 so far.

Now get the number of leap years in the century. That's  $72 / 4$ , or 18 discarding the remainder; that's 4. Add it to the 4 we're keeping, which is 8, which is 1.

Now get the month. Here are mnemonics for months:

Mar	Irish	4	St. Patrick's Day
Apr	Easter	0	
May	National	2	Memorial Day
Jun	Altar	5	Lots of weddings in June
Jul	Sun or Summer	0	First full sunny month of summer
Aug	Moon	3	Start seeing harvest moons in Aug
Sep	Job	6	Labor Day
Oct	Travel	1	Columbus Day
Nov	Restaurant	4	Eat turkey in a restaurant
Dec	Church	6	Christmas in a church
Jan	New	2	New-Year's Day
Feb	Love	5	St. Valentine's Day

If you forget one, you can recalculate a month number by just adding up the  $30 = 2$  and  $31 = 3$  days from the beginning of the year in March (mod 7, of course). The day counts for the months go like this: 32323/32323/30, nice easy pattern, or you

can sing the “30 days hath September, April, June, and November” ditty if you prefer. Whatever works.

We’re carrying a 1 in head. Add a 4 for Nov, giving 5. Almost done.

$29 \bmod 7$  is 1; add our 5, we get 6. 29 Nov 1872 was a Friday.

Do this a few times and check yourself against Google or [timeanddate.com](https://timeanddate.com). You’ll make a few mistakes when getting started, but after a little while you’ll be able to do it quickly and reliably.

Let’s try today, 21 May 2022:

$$2000 = 6$$

$$22 = + 1 = 0$$

$$\text{ly} = + 22/4 = 5 \text{ discarding the remainder}$$

$$\text{May} = + 2 = 7 = 0$$

$$21 = + 0 \text{ (Saturday)}$$

Today is Saturday.

### 15.10 Person-Action-Object (PAO)

I recently learned the PAO system and it's quickly becoming my favorite. Almost magically, it helps you string long phantasmagorias together, 6 digits—three pegs at a time. It's not very different from the peg system, and not much more difficult to devise, but it is a 3X amplifier.

The PAO system associates 3 phantasmagorias to each number. You build up your PAO system by enhancing the pegs you already know.

For example, consider these enhanced pegs:

	peg	Person	Action	Object
19	tap	CHIMP	TAPS	BEER
...				
29	nap	PUSSYCAT	NAPS	on the COUCH
30	mass	CONGREGATION	LEAVES	CHURCH
...				
58	leaf	BREEZE	RUSTLES	CANADIAN-MAPLE

If you had to memorize 30291958, you can do it the old way with four pegs as described earlier in this document, or you can just pick the Person field for 30, the Action field for 29, the Object field for 19, the Person field for 58, and so on if there were more pairs. I quickly get

The CONGREGATION NAPS after drinking BEER and a BREEZE rustles leaves.

I might end up with the same phantasmagoria the old way, but this way is faster and more robust.

Here are the first few rows of my PAO table. Many of these are very personal and will surely not work for you. Make sure the persons are unique amongst themselves, ditto the actions and the objects.

My table is just an example. Fill out your own table to suit yourself. You'll find it very quick to do and you will love memorizing it because the peg are a huge help.

	peg	Person	Action	Object
00	sauce	AMELIA	LADLES	SPAGHETTI SAUCE
01	sot	AQUALUNG	PICKS	a DOG END
02	sun	SUN CHILD (tarot)	REVELS	in SUNSHINE
03	seam	CRIMINAL	RUBS	FINGERPRINTS
04	soar	ALBATROSS	TORMENTS	the ANCIENT MARINER
05	sail	LEO	TRIMS	SAILS
06	sash	SHAH OF IRAN	ASCENDS	the DAIS
07	sock	GRINCH	DONS	HEAD SOCK
08	safe	SAFE	CRUSHES	WILE-E COYOTE
09	soup	CODGER	SPILLS	SOUP



	peg	Person	Action	Object
0	saw	LUMBERJACK	SAWS	LOG
1	tea	MISS MARPLE	POURS	TEA
2	Noah	NOAH	COUNTS	the ANIMALS
3	me	I	TIE	a BOW TIE in the mirror
4	ray	LUKE SKYWALKER	BRANDISHES	his LIGHT SABER
5	law	COP	STOPS	a LAND CRUISER
6	jaw	LURCH	CHEWS	ROSE STEMS
7	key	ALLADIN	TWISTS	KEY in rusty lock
8	fee	LAWYER	HORDES	GOLD
9	pea	PEA	BRUISES	the PRINCESS

  

	peg	Person	Action	Object
10	toes	DANICA	PAINTS	her TOENAILS
11	tot	ALICE	DESCENDS	her THRONE
12	tan	LIZ	TANS	her CHIN
13	tam	ORCAS	FLIP	a TAM o'shanter
14	tar	TARMAC	SIZZLES	a SNAKE
15	tail	GAS-CAP	SNAGS	tiger's TAIL
16	tissue	AL GORE	DABS	his TEARS
17	tack	JUSTIN TRUDEAU	TACKS up	flag of QUEBEC
18	taffy	ROADRUNNER	HIGH-STEPS	in hot TAFFY
19	tap	CHIMP	TAPS	BEER

  

	peg	Person	Action	Object
20	nose	KING DAVID	BEHEADS	GOLIATH
21	net	FISHING NET	TRIPS	CADET
22	nun	NUN	WALKS	her pet CROCODILE
23	name	TEDDY BEARS	LEANS	a NAME CARD
24	Nero	NERO	PLAYS	his FIDDLE
25	nail	MAILMAN	FLINGS	MAIL
26	niche	ATHENIAN BUST	FILLS	a NICHE
27	neck	NEFERTIRI	POSES	for SCULPTURE
28	navy	NAVY	STEAMS	in the OCEAN
29	nap	PUSSYCAT	NAPS	on the COUCH

## 16 All Pegs and Sound-Alikes

Letters for hex, ASCII, and R36, R64 alternative methods are included in the headers.

### 16.1 Caps and Rows

Items in ALL CAPS are recommended pegs: visually strong, easy to reconstruct by enumerating vowels, low collision potential. The first row in each block contains recommended alternative pegs in preference order. The rest of the rows are in alphabetical order.

Blocks without items in ALL CAPS do not have recommended pegs as of this ver-

sion. Rows in blocks without items in ALL CAPS may not be ordered.

We work on this list in our hobby time. It will be several versions before it's finished.

It takes time to come up with good pegs. It's a quadratic process because one must pick pegs that don't collide visually with the ones already memorized. Picking a new peg means thinking about all the others picked so far. I already have CHAIR for 64 (used all the time), so SEAT for 01 and THRONE for 142 are not good ideas for me because they might incorrectly recall 64 at speed.

Most of this list (except for the double leading zeros) is automatically constructed from a file named `core.clj` deeper in the directory tree of the source repository.

Pick your own pegs from this list, or mark your pegs in ALL CAPS in the `core.clj` file, pick four likely ones for the first line, sort the rest, and regenerate the PDF

```
visiting file core.clj
```

```
cider-quit  
cider-jack-in  
org-babel-execute-buffer
```

```
visiting the .org file
```

```
remove :results: drawers from any tables you changed  
and Ctrl-C Ctrl-C in each babomorph block
```

```
org-latex-export-to-pdf
```

you must either manually evaluate `core.clj` via Ctrl-C Ctrl-C or start with a fresh cider-repl every time, as Clojure caches the results). You may have to generate the PDF file manually:

```
pdflatex -shell-escape how-to-memorize*.tex
```

at least twice to regenerate cross-references correctly.

000	SOY SAUCE	SASSY SAYING	assize
001	CYST	SIESTA	
002	CESSNA	ASSASSIN	seasoning    season
003	SESAME seed bun	ASS'S MANE	
004	SCISSOR	CAESAR	ass's reins
005	C S LEWIS	SIZZLING steak	
006	SAUSAGE	SIOUX SAGE	
007	SUZUKI scooter	SIZING	siezing
008	SOUSAPHONE	ASS'S FOAL	
009	SWISS BANK	ASS'S BEARD	

00	SAUCE assess seize	OASIS assize size	icehouse houses	sissy sassy	sass say-so	seesaw seas
01	SOT cedilla seat sit stew sweet	SOD city seed site suede waste	Swede east seedy soot suet west	acid haste settee sooth suit	aside host side south suite	asset sad sight stay swat
02	SUN assign sin	SWAN hosanna son	swine sane soon	ozone scene zone	sinew seen	snow sign
03	SEAM assume	SWAMI same	semi seem	psalm some	asthma somehow	sum swim
04	SOAR czar sorry	SEWER eyesore wiser	seer hawser zero	soiree hussar	sir sore	sour sorrow
05	SAIL assail sale sly	SEAL cell sell soil	swallow easel sill sole	slaw easily silly solo	sleigh hassle slay soul	weasel hazel slow whistle
06	SASH assuage usage	SWATCH ice-age	switch sashay	sage sedge	ice-show sewage	siege such
07	SOCK ask sago squaw	SACK assegai sea-cow suck	ski hoosegow seek whiskey	sky housing sick wise-guy	scow husky soak	sake icing soggy
08	SAFE ossified	SUFI save	sofa savvy	sieve suave	housewife	savoy
09	SOAP sap swab zip	SPY espy swap	wasp sob sweep	wisp sop swipe	asp spa swoop	soup subway zebu

010 A	HOSTESS assiduous	SOUTH-SEA sideways	sweets	cities	assets	stays
011 B	ESTATE astute steed	STOUT hesitate stud	studio sedate	statue sit-down	iced-tea state	wasted steady
012 C	STEIN Satan stun	SEDAN Sweden sudden	satin sadden sweeten	stain sit-in	stone sodden	Estonia stand
013 D	SODIUM wisdom	STEAM	stem	esteem	stoma	stamina
014 E	OYSTER Austria hysteria stare swatter	CIDER Easter ouster stir	cedar astir satire store	stair astray satyr story	sweater austere setter straw	steer history star suitor
015 F	SADDLE hostile	STOOL sadly	still settle	stall stale	steel steal	style
016 G	STAGE hesitation	STOOGES	stitch	hostage	wastage	stodgy
017 H	STUCCO ascetic steak	STING sciatica sticky	stake setting stoic	stick stack stuck	stock stag	stoke stalk
018 I	STIFF	STOVE	staff	stave	stuff	set-off
019 J	STOP stab	STEP steep	stoop	stub	steppe	estop

020 K	SUNSET census snooze	SEANCE easiness	sense essence	sneeze iciness	SUNS science	sinus since
021 L	SAINT Sunday snit sundae	SAND ascent snoot zenith	cent assent snout	senate sanity sonata	synod scent sonnet	snot sent sound
022 M	SAN JUAN	SIGN-ON	sea-onion	snow-knife	asinine	
023 N	CINEMA					
024 O	SINNER sneer	SONAR	senior	snore	scenery	snare
025 P	SEE	snell	snail			
026 Q	SIGNAGE	SNOWSHOE	cinch	singe	snatch	snitch
027 R	SINK cynic	SYNAGOGUE isinglass	snack scenic	snake sea-anchor	snick sneak	zinc snug
028 S	SNUFF Seinfeld	SNOWFLAKE sinful	sniff	snafu	sniffle	saw-knife
029 T	SNAP sign-up	snowball snub	snob sunup	snip synopsis	snipe	snoop

030 U	SAMSON osmosis	SIAMESE sea-mouse	seamstress semicircle	semester	semisweet	swimsuit
031 V	CEMETERY assumed	SMITH smite	Semite smooth	housemaid something	smut summed	summit symmetric
032 W	SALMON Seminole summon	CEMENT awesomeness wise-man	seaman iceman wise-woman	semen sameness	seminary semantics	yes-man somnolent
033 X	OSMIUM Summum Bonum semi-mobile	SEMI-MONTHLY same man semi-moist	semi-mundane same mood semi-motile	same make semi-material semi-motor	same model semi-member	same month semi-metal
034 Y	SAMURAI smart	SWIMMER smirk	summer	simmer	smear	summary
035 Z	SAWMILL sea-mile	SMILE sea-mule	semolina seamless	smell seemly	small similar	simile
036 a	SMASH	SMOOCH	smudge	smidgen	so-much	
037 b	SMACK	SMOKE	sumac	smuggler	seeming	swimming
038 c	SEMAPHORE	SAMOVAR	symphony	semifinal	semiformal	
039 d	CYMBAL assembly	SAMBA sample	somber simple	symbol somebody	zombie sympathy	swamp

040 e	SERIES	SEA-HORSE	sewers	source	Circe	serious
041 f	SARDINE assert swarthy	WIZARD assort	sardonic certain	sard seaward	sort seaworthy	hazard sortie
042 g	SARIN Sauron	SIREN surrender	serene sworn	Syrian	serenade	surname
043 h	SWARM	SERMON	serum	ceremony	ceramic	
044 i	SORORITY	SRIRACHA	zero-hour	sour-herring	searer	swearer
045 j	ISRAEL	CEREAL	serial	sirloin	seraglio	sorrel
046 k	SARGE sergeant	SURGEON surcharge	search	serge	surge	sea-urchin
047 l	CIRCUIT circle	SAUERKRAUT circumstance	sarcasm sarong	sour-cream zircon	circus zirconium	sirocco
048 m	SURF servile	SERF sorrowful	surface surfeit	service survey	serve survive	servant
049 n	CERBERUS Serb	SYRUP sauerbraten	surplice serpent	surplus sourpuss	surprise surpass	usurper



050 o	SOLSTICE solace	SALSA useless	slice	solicitor	sluice	sales
051 p	SLOT MACHINE household sled solid	OCELOT isolate sleet solitaire	slate oscillate slide sultan	salt salute slight zealot	salad silhouette slit	assault slaughter slot
052 q	SEA-LION aslant slant	CYLINDER saline sullen	saloon sea-lane swollen	salon silent zillion	sealant slain	slender slander
053 r	SALAMANDER slam	SLIME slim	cell-mate slow-motion	asylum slumber	soul-mate solemn	Islam
054 s	CELLAR salary	SOLAR PANEL sealer	celery seller	soiler slayer	sailor whistler	celerity
055 t	CELLULAR	CELLULOID	soliloquy	sea-lily	slowly	slyly
056 u	SOLUTION isolation	SLEDGEHAMMER zoology	slouch	sludge	slush	slash
057 v	SILK sea-legs	silica select	ceiling slake	slack sleek	sling sulky	slang
058 w	SULFUR salve sliver	XYLOPHONE salver solve	saliva salvo soulfood	salvage self soulful	salvation silver sylph	slave sleeve
059 x	SLOOP celebrate	SLIPPER celibacy	sailboat slip	slab slop	slap slope	sleep slowpoke

060 y	SAGES suggest	SWATCHES	sieges	switches	sea-chest	sashes
061 z	SAGITTARIUS sate	sagittal satched	siege-tower	sash-weight	switch-hitter	associate
062 +	SWITCH-KNIFE	SZECHUAN	sea-change	session		
063 ' /	SASHIMI	SWITCHMAN	sea-chum			
064	SUTURE switcheroo	SOJOURN	swisher	seizure	seashore	saw-sharpener
065	SEASHELL	SATCHEL	social			
066	ASSOCIATION	SUSHI CHAI	sash-chain	sage-judge	switch-shift	wise-judge
067	SAGE-GRASS	SWITCHGEAR	sash-cord	siege-coin	switch-cane	
068	SOUS CHEF	SWITCHOVER	swish fop	sash fob	switch-vein	
069	SWASHBUCKLER	SAGEBRUSH	s-shaped	sash-pocket	switchblade	switch-box

070	SEX six	SOCKS squeeze	saxophone	Saxon	seacoast	success
071	SCOT scat skate	SKEET scatter skid	squid scout skit	socket scuttle waistcoat	ascot sea-god	squatter sect
072	ZUCCHINI askance sickness	scountrel scan	scanty scandal	skin schooner	sequin second	signal sicken
073	ESKIMO	SYCAMORE	scheme	scum	skim	scumbag
074	CIGAR escarole scare screen squirt	SKIRT escort scarlet secret whisker	Oscar escrow score secretary	scorpion ice-cream scrap secure	screw scar scrawl singer	squire scarce scream square
075	SKULL Skoal sculptor skill	SCALE cycle sea-gull squall	scallop icicle sequel squill	school ossicle sickle suckle	scallion scalp single	scull scholar skeleton
076	SKETCH	SCOTCH TAPE	squash	sagacious	escutcheon	
077	PSYCHIC skeg	SUKIYAKI squawk	asking squeak	easygoing	seaquake	seeking
078	SCAFFOLD scoff	ICE COFFEE skiff	scofflaw	scuffle	scuff	scavenger
079	SKIP escapade squabble	SKIPPER escape squib	scab housekeeper	scoop icecap	scope skeptic	ski-boot ski-boat

080	SAVES suffuse	CIVVIES	housewives	sophist	sufism	suffice
081	SEAFOOD sea-fight	SOVIET soft	swift	safe-deposit	sift	safety
082	SIPHON seven	SOUVENIR	Savannah	sea-fan	housephone	suaveness
083	SOPHOMORE	SEAFOAM	sea-vampire	suffumigate		
084	SAPPHIRE cipher severe	SUFFRAGETTE saffron suffer	safari savior whosoever	sphere savor	zephyr sever	sovereign several
085	ASPHALT civil	SOUFFLE safelight	seafowl safely	safflower suavely	ice-floe useful	swivel
086	SAVAGE	SAWFISH	icefish	housewifish	sufficient	safe-edge
087	ESOPHAGUS safe-conduct	SAFE CRACKER savoy-cabbage	suffocate suffix	civic	safeguard	saving
088	SAFE-HAVEN	SAFE VAULT	save-face	sieve-field	save-virtue	
089	SOFA-BED	SAFE BOX	sieve-pit	sieva-bean		

```
#+begin_ src clojure :cache yes :exports results :results verbatim drawer output  
(babomorph 90 100) #+end_src
```

0	SAW	HOSE	ice	house	haze	zoo
	a-sea	ace	as	ass	assay	ayes
	easy	essay	eyes	has	hawse	his
	is	ooze	sea	sew	so	sow
	us	use	was	wise	woozy	yes
1	TEA	HAT	hood	oat	yacht	widow
	ad	add	aid	at	auto	day
	die	do	dough	due	dye	eat
	eddy	etui	hate	head	heat	heed
	height	hide	hit	hoot	hot	hut
	idea	it	oath	odd	ode	tee
	thaw	thee	they	thigh	though	tie
	toe	tow	toy	wad	wade	wait
	watt	weed	weight	wet	what	wheat
	white	wide	wit	with	youth	
2	NOAH	WINE	honey	knee	ion	win
	an	ana	anew	ani	annoy	any
	ennui	gnaw	gnu	hen	hyena	in
	inn	know	neigh	new	nigh	no
	now	one	own	wan	wean	when
	wino					
3	ME	HOME	ammo	ham	hem	womb
	Emmy	May	may	mow	maw	aim
	him	hum	hymn	whim	whom	
4	RAY	ARROW	roe	hair	oar	wire
	air	are	area	aria	array	aura
	aware	awry	ear	era	err	hare
	harrow	hear	heir	her	here	hero
	hour	hurrah	hurry	ire	or	ore
	our	raw	rye	war	ware	wear
	weary	where	worry	year	yore	your

5	LAW	WHALE	ale	awl	aisle	eel
	Yale	Yule	ail	all	alley	allow
	alloy	ally	aloha	ell	hail	hall
	halo	haul	heal	heel	hell	hello
	hill	hole	hollow	holy	howl	hull
	ill	isle	lay	lei	lie	low
	lye	oil	ole	olla	owl	wail
	wall	wallow	waylay	wheel	while	whole
	will	willow	wool	yawl	yellow	
6	JAW	SHOE	witch	ash	edge	jay
	Asia	Jew	Joe	age	chew	chow
	each	etch	hash	hatch	hedge	hitch
	huge	hush	hutch	issue	joy	jus
	shah	she	show	shy	wage	wash
	watch	wedge	which	wish	woosh	
7	KEY	COW	oak	yak	hawk	hockey
	Hawkeye	IQ	Ike	ache	aggie	ago
	ague	awake	caw	coo	coy	cue
	echo	egg	ego	gay	go	guy
	hack	hag	hang	hick	hike	hock
	hog	hook	hookah	hooky	hug	quay
	queue	wake	walk	weak	week	whack
	wick	wig	yoga	yoke	young	
8	FEE	WAVE	view	hi-fi	hive	ivy
	ave	few	foe	half	halfway	have
	heave	heavy	hoof	huff	oaf	of
	off	via	vie	vow	waif	waive
	weave	wife				
9	PEA	PIE	hippie	buoy	bow	bay
	abbey	ape	be	beau	bee	boa
	bough	boy	buy	by	bye	ebb
	epee	happy	heap	hip	hobby	hobo
	hoop	hop	hope	hubby	obey	oboe
	paw	pay	pew	web	weep	whip
	whoopee	wipe				

10	TOES White-House dice eats odious toss	daisy adds dizzy hideous tease twice	odds ads does ideas these twos	hothouse dais dose ides this wits	idiots days douse idiocy those	deuce daze doze oats thus
11	TOT adit debt doubt thought tutu	TEDDY audit deed duty tide without	date dad deity edit tight	tattoo data diet idiot tithe	tidy dead dot oddity today	toad death dote outwit tooth
12	TAN Athena den heathen thin town	TUNA atone deny heighten thine tun	Dane attain din hidden tin tune	dune attune dine ten ton twin	dawn dean done than tone twine	Eden deign down then tony
13	TAM Edam demi idiom teem	Adam atom dim item them	dime autumn doom odeum theme	dome dam dumb odium thumb	tomb dame dummy tame thyme	tome deem edema team time
14	TAR TRUE dairy dower ether other there try whiter	tree adder dare dowry hatter otter thorough udder widower	tire adhere dear draw heater tare three utter wither	tower adore deer dry hither tear throw waiter	tray attire diary dyer hydra their tier water	tiara author door either odor theory trio weather



15	TAIL Italy dolly huddle tale toil	atoll daily dual ideal tall toll	doll deal duel idle tallow tool	doily delay dull idyll tell towel	idol dial dwell outlaw tile whittle	tally dole hotel outlay till
16	TISSUE teach attache	ditch touch attach	dish touche adage	adagio thatch whitewash	Dutch duchy	dash dodge
17	TACK Tokay dig dong heading thing	DUCK attack dike dung outing tick	duke attic ding eating tag tuck	thong decay dock ethic take twig	toga deck dog haddock talk tyke	thug decoy doing headache thick wedding
18	TAFFY TV tough	DOVE daffy tuff	toffee deaf	diva defy	dive edify	thief tiff
19	TAP adobe dip tape	TUBA dab dope tepee	tabby daub doughboy top	toupee debut dupe tube	tip deep tab tup	tub depot taboo type

20	NOSE nice once	anise noise ones	noose ensue onus	niece hence uneasy	ounce hens wins	news highness wines
21	NET Hindu anti hind knit note wand	knight India end hint naught undo want	knot and endow hound neat undue went	aunt annoyed gnat hunt need unit wind	nude ant hand into night unite window	nut ante haunt knead not untie wound
22	NUN none anyone	ONION nine inane	neon ninny	union noun	noon no-one	nanny anon
23	NAME annum	GNOME numb	enemy	enema	enum	anemia
24	NERO anywhere nor	WIENER inhere noria	honor inure nowhere	winery narrow owner	whiner near unaware	winner newer
25	NAIL anal knoll	NARWHAL annual newel	Nile annul newly	inlay inhale nil	in-law kneel null	unholy knell only
26	NICHE enjoy unhitch	NACHO gnash winch	notch hunch	wench inch	haunch no-show	hinge nudge
27	NECK Yankee nick	INK awning nog	Inca inning unhook	nock knack unique	hunk knock wink	nook nag
28	NAVY enough	KNIFE envoy	nova envy	knave inveigh	nephew nave	naive unify
29	NAP Niobe unhappy	KNOB honeybee	nib nab	nub neap	nape nip	nappy nob

30	MASS Messiah humus muse	MOUSE aims mess muss	mace amass mews	maze amaze miss	hummus amiss moose	mice amuse moss
31	MAT amid mate might motto	maid amity meadow mite mouth	moth emit meat moat mute	mud humid meet mod myth	mitt mad midday mode omit	midi made midway mood
32	MAN amen manna omen	MOON ammonia many woman	mane human mean yeoman	hymen main mien	mine mana moan	minnow mania money
33	MAMA Miami	MUMMY mayhem	mime memo	imam whim-wham	maim	Mau-Mau
34	MARE amour mere	HAMMER emir mire	Mary humor moor	mayor mar more	merry marrow myrrh	homer marry omer
35	MAIL homely moll	mule homily	mile male	mole mall	mill melee	meal mellow
36	MATCH Amish	MASH image	mesh mashie	midge mooch	mush much	homage
37	MIKE Mohawk mock	MUG amigo muck	mica amok omega	hammock among	mocha make	Mecca meek
38	MUFF oomph	MOVIE	mauve	Mafia	miff	move
39	MAP imbue myopia	AMP imp	hemp maybe	hump mob	ump mop	amoeba mope

40	RACE Warsaw hearsay horse ruse	ROSE arouse hearse iris warehouse	racy erase heiress ours worse	raise eros heresy rice	rase erose hers rise	raze harass hoarse rouse
41	RAT aorta errata hereto raid rid rot word write	ROAD arid hard hoard rate ride route worried yard	rod aright hart horde read right rut worth	radio art heart horrid ready riot ward wrath	wraith award hearth hurried red rite wart wreath	Earth erode herd hurt reed root weird wreathe
42	RAIN Aryan arraign iron worn	REIN Irene earn irony	reign Orion hernia rhino	renew Reno heroin rune	run Rhine heroine urn	ruin arena horn warn
43	RAM Rome harm	RIM Romeo roam	rhyme arm rum	ream army warm	room aroma worm	rime harem
44	REAR error warrior	AURORA harrier wearer	rare harrower worrier	roar hearer	rower horror	arrear orrery
45	RAIL aerial oriole royal	RALLY earl rely rule	railway early rill whirl	real hourly roil whorl	reel hurl role yearly	relay oral roll
46	RASH Irish ridge wretch	ROACH Russia rouge	rage arch ruche	ratio harsh rush	Rajah orgy rushee	reach rich urge
47	RACK airing hearing rook	ROCK arc heroic rug	rake argue herring work	rag ark ragout wreck	reek ergo rig	ring hark rogue
48	REEF aerify ruff	rave arrive	wharf horrify	roof review	revue rough	rife rove
49	ROPE Arabia rabbi ruby	RAP Europe rib rupee	rape harp ripe warp	reap herb rob	repay hereby robe	rip orb rub

50	LACE Eliza also loose	Lassie Lucy always lose	lass alas else loss	lazy alehouse lees louse	lasso alias less luce	lease allies lessee
51	LOT Hollywood allude health lath load old	EYELID alight aloud helot lead loath wallet	lad alit although hilt let loot wealth	lathe allied elate hold lid loud wild	late allot elite holiday lido lout	lady allowed halt islet light lute
52	LANE Halloween loon	LION alien woolen	lawn alone	lean hellion	lien loan	line loin
53	LIME Limey limb	LLAMA alum loam	lame elm loom	lamb haulm	lima helium	lime helm
54	LAIR Holy-Year lure	LYRE allure oiler	layer healer whaler	lawyer holler	leer lorry	liar lower
55	LILY Walhalla lull	OIL-WELL hallelujah lulu	holy-oil hula-hula	Loyola ill-will	lowly lolly	whale-oil loyal
56	LASH Welsh ullage	LEECH allege	latch hellish	leash lodge	liege loge	ledge lush
57	LAKE ailing lac leg long	hollyhock alike lack lick look	elk along lackey like low-key	league hillock lag lock luck	lug hulk leak loco whaling	lung ilk leek log
58	LEAF alive life	WOLF aloof live	lava laugh love	olive leave luff	elf levee welloff	loaf levy
59	LAP leap lob	WALLABY alibi lobby	elbow alp lop	lobe elope lowboy	lab help wallop	loop lip whelp

60	CHESS Jaycee juice	CHEESE Jewess schuss	chassis ages wages	chase ashes	chaise choose	choice joyous
61	JET aged jute sheet widget	JUDO chat shad shoot	cheetah cheat shade shot	chateau chit shadow shout	jade chute sheath shut	jetty jot shed washed
62	CHAIN Jane shine	chin John shown	gin June shun	ocean Shawnee widgeon	china chine	hygiene join
63	CHIME Jim shimmy	CHAMOIS jamb	chum sham	gem shame	gym shammy	jam shim
64	CHAIR Hoosier edger shear wager	JAR assure hosiery sheer	sherry azure jeer shire	washer char jury shore	usher cheer osier shower	cherry chore share sure
65	JAIL A Chile shall	CHILI July shallow	jelly agile shill	jewel chill shoal	shell jolly shyly	shawl jowl usual
66	JUDGE B chichi wishy-washy	HASHISH chowchow	juju jaygee	Jewish josh	cha-cha shoji	choochoo shush
67	CHALK C Django chug joke shuck	JUG aging etching shack washing	jack check itching shag watching	sheikh chic jingo shake wishing	chick choke jock shako	cheek chuck jockey shock
68	CHEF D Java jive	CHEVY Jehovah shave	chief achieve shove	sheaf chafe wash-off	chaff jayvee	chive jiffy
69	CHIP E GP gyp ship	JEEP chap jab shop	jib chapeau jibe	sheep cheap job	ship chop shabby	Job chubby shape

70	CASE	GOOSE	gas	kiss	ox	eggs
F	accuse	acquiesce	ax	cause	causeway	chaos
	cozy	cuss	gauze	gaze	guess	guise
	guys	hex	hoax	quasi	wax	
71	CAT	GOAT	kit	kid	co-ed	caddie
G	God	Kate	acquit	act	acute	coat
	code	cot	cut	cute	gaiety	gait
	gat	gate	gaudy	get	ghetto	goad
	good	gout	guide	kite	kitty	quiet
	quit	quite	quota	quote	weekday	wicked
	wicket					
72	CAN	GUN	coin	queen	cone	cane
H	acne	again	agony	awaken	canoe	coon
	gain	gown	guinea	icon	keen	kin
	oaken	wagon				
73	CAM	COMB	acme	calm	cameo	coma
I	come	comma	gam	game	gum	hokum
	oakum	wigwam				
74	CAR	CHOIR	gear	curry	hiker	hooker
J	accrue	acquire	acre	agar	agree	anger
	care	carry	coheir	cohere	core	cower
	crew	crow	cry	cur	cure	eager
	eagre	ecru	euchre	gory	grey	grow
	guru	hugger	occur	ogre	okra	quarry
	queer	quire				
75	COAL	GLUE	coil	eagle	gull	quill
K	Gaul	call	claw	clay	clew	clue
	collie	cool	coolie	equal	gal	gale
	gall	galley	glee	glow	goal	gully
	hackle	haggle	heckle	kale	keel	keyhole
	kill	ogle	quail	ugly	weekly	
76	CAGE	GAUGE	cashew	gaucho	coach	couch
L	cash	catch	cache	cachet	gash	gage
	gush	gauche	ketch	kedge	hoggish	hogwash
	waggish					
77	CAKE	CAULK	cook	gong	king	cookie
M	cock	coke	cacao	cuckoo	gag	gangway
	gang	going	goo-goo	gook	kaka	kayak
	khaki	kick	keg	quack	quake	quick
	aching	agog				
78	CUFF	CAVE	calf	cafe	coffee	agave
N	cough	cove	covey	gaff	give	goof
	guava	guff	guffaw	quaff		
79	CAP	COWBOY	cob	cab	guppy	cube
O	cabby	cape	coop	cop	cope	copy
	cub	cup	gab	gap	gape	hang-up
	hiccup	keep	occupy	okapi	quip	wickiup
	wicopy					

80	FACE	VASE	fuse	vise	visa	vice
P	efface	effuse	fizz	fusee	fuss	fuzz
	office	phase	voice			
81	FAT	PHOTO	foot	fiat	voodoo	aphid
Q	afoot	aft	aviate	avid	avoid	effete
	evade	fad	fade	faith	fate	feat
	feed	fete	feud	fight	fit	food
	off-white	ovate	veto	void	vote	waft
82	FAN	PHONE	vine	fawn	van	fanny
R	Vienna	avenue	euphony	even	fain	feign
	fen	fin	fine	fun	haven	heaven
	hyphen	often	oven	ovine	phony	vain
	vane	vein	woven			
83	FAME	FOAM	ovum	fume	vim	
S						
84	FARE	FIRE	Pharaoh	fairway	ferry	ivory
T	afar	affair	affray	aviary	euphoria	ever
	fair	fairy	far	faro	fear	fiery
	fir	for	foray	four	foyer	fray
	free	fry	fur	furrow	fury	half-year
	heifer	hooper	off-year	offer	over	vary
	veer	very	viewer	waiver	waver	weaver
	woofer					
85	FALL	EIFFEL	flea	veil	viola	waffle
U	avail	avowal	awful	fail	feel	fell
	fellow	file	fill	filly	flaw	flee
	flow	fly	foal	foil	follow	folly
	fool	foul	fowl	fuel	full	hovel
	offal	oval	phial	vail	valley	value
	veal	vial	vile	volley	vowel	
86	FISH	FUCHSIA	fudge	effigy	phage	voyage
V	affiche	fetch	fichu	offish	vetch	vouch
87	FIG	FANG	fog	fake	Vogue	havoc
W	evoke	fag	foggy	fogie	having	heaving
	offing	vague	vic	viewing	waving	weaving
88	FIFE	FIEF	five	viva	half-off	
X						
89	FOB	FOP	veep	vip	Phoebe	phobia
Y	faux-pas	fib	half-pay			



90	BASE	BUS	pizza	bass	booze	boss
Z	PS	abuse	abyss	apiece	apis	appease
	basso	bias	boys	busy	buzz	epos
	obese	oppose	opus	pace	pass	pause
	peace	piazza	piece	pious	poise	pose
	pussy					
91	BAT	BOAT	bath	opiate	poet	bait
	abate	abet	abide	abode	about	apathy
	apt	bad	bead	beat	beauty	bed
	bet	bid	bight	bit	bite	body
	boot	booth	both	bout	boyhood	bud
	buddy	but	butt	habit	opt	pad
	pat	path	peat	pet	petty	piety
	pit	pity	pot	pout	put	putty
92	BEAN	BUNNY	pan	pony	piano	pine
	ban	bane	bin	bine	bone	boon
	bun	ebony	happen	pain	pane	pawn
	pen	penny	pin	pone	pun	subpoena
	weapon					
93	BEAM	bomb	puma	palm	bum	balm
	Bohemia	boom	opium	poem		
94	BAR	bear	berry	opera	pear	prey
	Boer	Hebrew	abhor	apiary	appear	bare
	beer	beware	bier	boar	bore	borough
	borrow	brew	brow	bureau	bury	buyer
	hopper	pair	par	pare	parry	payer
	peer	pier	poor	pore	pour	power
	pray	prow	pry	purr	pyre	upper

95	BALL able belay blow happily pale play pole wobble	BELL appall belly blue highball payola plea poll	opal appeal below boil hobble peal plough pool	bowl apply bile bull hoopla peel plow pull	apple bail bill bylaw pail pile ploy pulley	pillow bale bellow eyeball pal pill ply uphill
96	BADGE Apache botch peach	apogee abash boyish pitch	bijou apish budge poach	hibachi batch page posh	bush beach pasha pudgy	pouch beech patch push
97 a	BACK aback beg epic peck pique	BIKE bag being epoch peek poke	book bake big opaque peg puck	bouquet bang bogey pack pick	buck beak bug pang pig	bog beck buggy peak pike
98 b	BEEF ab-ovo buffo	BEEHIVE above pave	buffet behalf peeve	puff behave	buff bevy	payoff biff
99 c	PIPE babe booby pop	BABY bib bop	papa bob hubbub	pope bobby pap	poppy boo-boo peep	puppy boob pip

100	THESIS	decease	decisive	desist	disaster	disease
d	disuse	dissuasive	daisies	deuces	doses	diocese
101	TOAST	Tuesday	atheist	attest	audacity	deceit
e	decide	deist	destiny	destitute	destruct	distance
	distaste	distinct	distinguish	distract	distress	distribute
	district	distrust	disturb	dust	outside	sawdust
	tacit	taste	test	testimony	twist	
102	DOZEN	citizen	decent	descent	design	dishonest
f	disinclined	disinfect	disinterest	disown	dissent	dissonant
	dizziness	Whitsunday	Docent			
103	TWOSOME	theism	deism	decimal	disembark	dismay
g	dismember	December	dismiss	dismount	dissemble	dissimilar
	atheism	decimeter	decimate			
104	DOWSER	dicer	thesaurus	desert	dessert	deserve
h	desire	disarm	disarrange	discern	dishearten	disorder
	disregard	disreputable	disroot	dissertation	disrobe	disrupt
	douser	seducer				
105	DIESEL	tassel	dazzle	desolate	disillusion	dislike
i	dislocate	dissolve	docile	deciliter	disloyal	white-sale
106	WOOD-sage	dosage	decision	discharge	dissuasion	autosuggestion
j						
107	TUSK	task	desk	disk	discolor	discomfort
k	disclose	disconnect	discontent	discord	discount	discourage
	discourse	discover	discrete	discriminate	discuss	disgrace
	disguise	disgust	disquiet	dusk	outskirts	doeskin
108	ADHESIVE	tea-sieve	theosophy	deceive	decipher	disaffect
l	disavow	disfigure	disfavor	satisfaction		
109	TEASPOON	thespian	toss-up	despot	despair	deception
m	decibel	despite	despond	disabled	diaspora	disappear
	disappoint	disapprove	disciple	disobey	dispatch	dispense
	dispel	disperse	display	displace	displease	disposal
	disposition	dissipate				

110	TIGHTS	tedious	toothsome	tootsy	deduce	detest
n	statesman	status	statistical	studious		
111	TEETOTALER	tete-a-tete	tidied	dietetic	day-duty	deadwood
o	doodad	dotted	doubted	attitude	audited	outwitted
112	TITAN	Titanic	tetanus	tea-dance	two-tone	tidiness
p	tighten	deaden	detain	detonate	dead-end	sedateness
	steadiness	stoutness	student			
113	TOTEM	diadem	teatime	two-timer	tedium	TeDeum
q	datum	daytime	stadium			
114	TATAR	tater	tea-tray	tatter	theater	thither
r	tooter	totter	tutor	dater	daughter	deter
	deteriorate	determine	detract	detriment	daydreamer	diatribe
	auditor	editor	headwater	hot-water	stutter	
115	TITLE	tattle	tittle	tidal	tootle	titillate
s	total	dawdle	doodle	dateline	deadline	dead-letter
	deadly	detail	thoughtless	state-line		
116	DEATHWATCH	detach	death-wish	dotage	hot-dish	dead-issue
t						
117	HOT-dog	tie-tack	toothache	dating	dedicate	deduct
u	detect	detective	tidings	idiotic		
118	AUTO-da-fe	tutti-frutti	thoughtful	dative	dutiful	dutyfree
v	deadfall	additive	auditive	sedative		
119	TEDDY-bear	tadpole	tea-table	toothpick	tidbit	toothbrush
w	deadbeat	deadpan	deathbed	ditty-bag		

120	DANCE	tinsel	tenacity	tennis	tense	thence
x	tonsil	dense	dunce	ad-nauseam	Adonis	Athens
	audience	haughtiness	dynasty	utensil	whiteness	witness
	sadness					
121	DOUGHNUT	tnt	addendum	astound	attend	authentic
y	dainty	dandy	denote	dent	dentist	denude
	dint	dwindle	hesitant	identical	identify	stand
	standard	stint	stunt	taint	tantalize	taunt
	tend	tender	tendon	tent	tenth	thunder
	tint	twenty	twi-night	whodunit		
122	ATHENIAN	tenant	tenon	teeny-weeny	denounce	adonian
z	hootenanny					
123	TENEMENT	thin-man	tonometer	town-meeting	denim	Denmark
	denomination	dynamo	dynamite	atonement	attainment	pseudonym
	autonomy	outnumber				
124	TENOR	tanner	teener	tenure	thinner	tone-arm
	tuner	diner	dinner	donor	downright	wet-nurse
	whitener	itinerary				
125	TUNNEL	toenail	thinly	tonal	town-hall	denial
	downhill	ethanol	stainless			
126	TEENAGER	tonsure	tenacious	tannage	tension	tonnage
	township	Danish	dunnage	donation	dungeon	twinge
	astonish	stench	attention	wooden-shoe		
127	TANK	thank	think	tincture	tinker	tonic
	tunic	twinkle	dank	dinky	dining	donkey
	Don-Quixote	ethnic	hoodwink	satanic	stenographer	
128	TUNA-FISH	tinfoil	tenfold	ten-footer	tea-knife	tuneful
	twinflower	de-novo	downfall			
129	DUNE-BUGGY	tenpin	tenpounder	tinplate	tune-up	twin-bill
	down-payment	downbeat	downpour	donnybrook	Danube	stoneblind

130	THAMES damask atomizer	Thomas damsel atmosphere	teamster domestic utmost	team-song domicile	Thames demise	theme-song admissible
131	TOMATO thumbtack dumbwaiter esteemed	tamed daymaid adamite	tom-tom deemed admit	timid demit automate	tumid diameter odometer	timeout dumdum estimate
132	DOMINO demand diminish sediment	T-man demeanor domain stamina	Tammany demon dominate tameness	administer demonstrate dominion thiamine	admonish diamond headman thumbnail	autumnal dimension ottoman time-honored
133	DEMIMONDE	teammate	time-money	time-immemorial	dime-museum	demi-magic
134	TAMER tumor stammer	tamarind demure steamer	timer demarche	tomorrow demarcation	tommyrot admirer	Tia-Maria admiral
135	TAMALE timely oatmeal	time-lag time-lock stimulant	time-loan demolish	tumult dimly	timeless dome-light	time-limit etymologist
136	STEAMSHIP dumb-show	time-sheet admission	time-chart automation	tam-o-shanter atom-age	damage Edam-cheese	demijohn estimation
137	TOMAHAWK tummyache democrat	tomcat taming atomic	team-captain timing stomach	time-card teeming	timekeeper demagogue	tommy-gun demigod
138	ATOM-FORCE dumbfounded	tomfool duumvirate	time-fuze hit-movie	time-value steamfitter	team-foul	time-off
139	TOMBOY template tombolo dumbbell	temper team-play thimble dump	temperature team-boat thump automobile	temperance timber tumble stamp	tempest timpani damp stampede	temple tympan dimple stump

140	TERRACE Thursday dress address stress	tricycle trace dresser atrocitv	tea-rose throes dressing authoress	thrice tress drizzle waitress	torso trews drowsy otherwise	thirst truce duress storehouse
141	TURRET treat trout thread diehard authority strait sturdy	tart trade truth threat dirt iterate straight	tardy trait turtle throat dread outright stratagem	territory triton third thyroid drought yesterday street	tread treaty thirty dart druid Saturday stride	treadle trident thirteen dearth adroit start strut
142	TERRAIN darn drunk thorn trance tyrant	Saturn dirndl dryness throne translation utterance	adherent drain eternal torrent transport	adorn drench historian tourney trench	astronaut drink outrun train turn	attorney drown strain trainee turnip
143	DREAM drama streamer torment trombone	dermatology dramamine tearoom tram trumpet	diorama drome term tramp turmoil	dormer drum terminal trampoline uttermost	dormitory storm theorem tremble watermark	dram stream thermometer trim watermelon
144	TERROR dreary water-rat	terrier dryer water-right	trier dry-run	darer adorer	dearer outerwear	drawer waterer

145	TRAIL trolley darling water-lily Waterloo	trial twirl derail starling	trawl truly drill astrologer	thrill truelove droll sterile	trellis tarheel door-lock sterling	trowel trilogy water-hole stroll
146	TRASH treachery drudge outrage attrition	tragedy treasure duration ostrich	torch tear-sheet adoration starch	thrash dredge atrocious storage	thrush derision authorship stretch	traject dirigible hydrogen sturgeon
147	TREK tricolor daring drug dirk strike struggle	truck turkey direct during attract strict historical	track target doorkeeper director staircase string	tractor turk drag dreg stark strong	tract throng dragon dragnet streak structure	trick dark drawing drake strength stroke
148	TREIF thrift tearful drive hydrophobia	turf thrive trove drove waterfall	trophy traffic trough draught strive	tariff travel drivel derive strafe	terrific trifle draft dwarf weather-vane	terrify truffle drift atrophy
149	TRAP throb troop drab durable strawberry	tarpaulin torpedo troupe drape derby strip	tripod trip trouble drawback adorable stripe	trapeze tribe turbine drip attribute water-boy	treble tribunal turbot droop strap waterproof	terrible triple tribute drop stirrup



150	TELESCOPE tollhouse idealize	tails delusive idolize	tales dollhouse headless	tools doilies hatless	tiles dailies outlast	tallies atlas utilize
151	TALIT too-late dilute etiolated	toilet toehold doldrums idolatry	telltale daylight dolt utility	tilt delight adult withhold	twilight delude adultery outlet	teletype dilate athlete stealth
152	TALON DEW-Line idleness	tail-end delineate Italian	toluene delinquent outline	towline headline stillness	talent hot-line Stalin	dalliance headland
153	THALLIUM Talmud hoodlum	tollman dalmatian stalemate	telemen dilemma settlement	telemark dolomite	toolmaker head-lamp	tallyman hotelman
154	TAILOR dealer yodeler	tiller dialer settler	tolerate dollar stellar	tailer dueler stealer	teller hotel-room	toolroom idler
155	DAY-lily tallowless	telelens teleology	tall-oil Dalai-Lama	taillight stellular	telial still-life	tileless styleless
156	TOOL-shed delicious etiology	tail-shaft deluge stylish	tallish delusion	tillage diligence	tollage dilution	theologian adulation
157	TAILGATE dealings headlong	telegram delegate outlook	toll-call delicacy wedlock	telling dwelling	tollgate dialect	talc dialogue
158	TAIL-fin deliver	telephone doleful	television dolphin	twelve Delft	tell-off dollface	delve outlive
159	TULIP tallboy dilapidate	tailpiece tollbooth dollop	tholepin toolbox doll-up	tilbury talebearer ad-lib	tailpipe day-laborer	telepathy deliberate

160	DUCHESS audacious	tea-chest headcheese	touchstone	touch-system	digest	dishes
161	DIGIT dashed hotshot	touchwood dodged whitewashed	touchdown dish-towel	touch-type dishwater	ditched ditchdigger	dished attached
162	EDITION Dutch-uncle	station addition	tuition audition	teach-in outshine	tee-joint stagehand	dudgeon hesitation
163	TAJ-MAHAL	touch-me-not	touchmark	Dutchman	attachment	stage-manager
164	TEACHER autogiro	T-shirt etagere	dasher wheat-germ	dodger	dowager	de-jure
165	DASH-LIGHT	touchline	touchhole	Dutch-elm	Dutch-light	
166	DISHWASHER	touch-watch	dodge-chain	Dutch-cheese	head-judge	
167	STAGECOACH deject	thatch-grass hatcheck	teaching woodchuck	touching staging	dashing	dodging
168	DUTCH-OVEN wheat-chaff	touch-off stage-fright	Dutch-wife	dash-off	disheveled	dishful
169	DODGE-BALL dish-up	tissue-paper	toy-shop	touchback	touch-up	odd-job

170	TAXI things doghouse	tax tea dogs	Texas cozy attics	text decks ethics	textile dachshund outcast	tongs dexterity suitcase
171	DOCTOR together docket edict	teakettle teakwood dictate etiquette	tact tag-day decathlon educator	thicket decadent ductile	ticktack decade dogwood	ticket decode adequate
172	TOUCAN thickness	token technical	tea-wagon deacon	tycoon decanter	taken dignity	thicken stagnant
173	DOCUMENT degum	Tecumseh dogma	autogamy stigma	day-camp stigmata	decamp thingumajig	decompose
174	TIGER decorate digger stacker	attacker decrease digress stagger	autocar decree doggerel stoker	autograph decry outcry tea-garden	dacron degrade outgrow ticker	dagger degree sidecar
175	TACKLE tequila decal	tangle toggle ducal	tickle dangle stockholder	tingle declaim	tongue-lash declare	tag-line decline
176	DICTIONARY dog-show	tuck-shop eduction	take-issue education	dockage	doggish	dogwatch
177	HOT-cake sidekick tea-cake	attacking sticking	decaying stock-exchange	digging stocking	dogging tacking	outgoing tagging
178	TAKEOFF dog-food stockfish	tick-off dogfoot	tick-fever duckfooted	dogface hot-coffee	dogfight wedding-vow	dogfish outgiving
179	STICKUP decoupage	teacup hiding-place	take-up stockbroker	toe-cap	dig-up	decapitate

180	DEVICE deface advise	two-faced devastate edifice	two-fisted deficit whiteface	two-phase diffuse	thieves divest	typhus dovehouse
181	DAVID daft devote hotfoot	taffeta deft devout outfit	theft davit diphtheria outvote	Tophet defeat divide stevedore	typhoid daffodil deviate eightfooter	tuft devoid diphthong
182	TIFFANY defiant advance	typhoon define advantage	toughness dauphin	tiffin divan	deafen divine	defense advent
183	DEAFMUTE	tea-family	tough-minded	TV-man	defame	
184	TAVERN defraud diverse	taffrail defray divorce	tovarich devour defrost	thievery diaphragm deaf-ear	defer differ adverse	deform diver advertisement
185	DEVIL hateful tefillin white-elephant	defalcation hatful tivoli wistful	defile outfield tough-luck youthful	deflate outflow toyful	develop sea-devil twofold	duffel stifle wasteful
186	DEVOTION diffusion	TV-show division	thievish audiovisual	deficiency whitefish	deviation hot-fudge	dovish
187	TOUGH-guy edification	de-facto staffing	defect stuffing	difficult	diving	advocate
188	TV-fan	two-fifths	thief-vault	dive-off	eighty-five	stave-off
189	DIVE-bomber stove-pot	taffy-pull	v	tough-boy	edifiable	stovepipe

190	TAPAS topsy-turvy tubs autopsy	topsail tapestry types headpiece	top-sergeant tipsy debase outpace	top-secret tips deposit	topside tops dubious	topsoil tubes autobus
191	DEBUTANT topdrawer deputy outbid	teapot towpath adapt stupid	tepid two-bit adept	tiptoe debate adopt	top-hat debit output	top-dog depth hotbed
192	HATPIN depend stipend twopence	Dubonnet depone southbound	Ethiopian eastbound thighbone	debenture headband tiepin	debonair headpin topknot	deepen outbound topnotch
193	STEPMOTHER	topman	topmast	topmost	top-milk	topminnow
194	TYPEWRITER department dipper sweetbread top-rate	dapper deportment outboard taper top-round	daybreak depreciate outbreak tapir topper	debar depress sideboard taproom topwork	debris deprive sideburns tea-party	depart diaper stubborn tie-bar
195	TABLE diplomat seat-belt tablet	audible double stable tipple	dapple doublet staple topless	deplore duplicate steeple topple	diabolic edible stipulate tupelo	diploma oddball tableau two-ply
196	DEBAUCH adoption	tip-sheet adaption	top-sheet stoppage	top-shelf	two-page	type-wash
197	TOBACCO topkick depict	tea-bag toboggan dipping	tapping topic debug	topping typical autobiography	typing typograph hatbox	topcoat debacle stopping
198	STEPFATHER typefounder	two-by-four deep-felt	tip-off deepfreeze	topflight step-off	top-heavy stupefy	typify stopover
199	TOP-BANANA depopulate	top-billing dope-peddler	top-boots dope-pusher	wet-pipe wastepaper	white-poppy hot-pepper	white-paper

200	GNOSIS insist census	necessity incessant	nieces unceasing	noses unseasoned	noises unsuspicious	incisor ounces
201	NOSTRIL incite institute one-step	Wednesday inside instrument sinister	anesthesia insight nasty unsatisfactory	gnostic instant nest unsteady	honest instead nicety unsuitable	incident instinct nose-dive
202	ENSIGN ensnare uneasiness	newshen incinerator unseen	nice-nelly innocent unsound	niacin insane unison	nosiness insensitive unessential	nuisance insincere
203	INSEMINATION enzyme unassuming	newsman hansom unsimilar	noisemaker inasmuch	news-media insomnia	nizam in-sum	noisome unseemly
204	CENSOR insert sincere	newsreel insurgent	newsworthy insurmountable	answer insurrection	encircle uncertain	incertitude unsworn
205	NACELLE nicely insult	nozzle enslave ancillary	nuzzle insolence oneself	nestle insolvent unselfish	nasal insulin wine-cellar	noiseless insular senseless
206	NOSE-JOB	news-agency	incision	ionization	unsociable	sensation
207	NOSE-cone insecure	nosegay insignificant	encyclopedia unicycle	honeysuckle unscrupulous	inscription wainscot	insect
208	IONOSPHERE uncivil	news-vendor unsafe	henceforth unicef	insufferable	insufficient	once-over
209	NEWSBOY inseparable unspent	nosepiece insipid sensible	newsprint inspect	no-soap inspiration	newspaper insuperable	inhospitable insupportable

210	NUDIST anticipate induce undisturbed	notice antiseptic industry	Nazi enthusiasm hind-sight	nowadays entice handsaw	no-dice indecent undeserved	antacid indistinct undesirable
211	UNTIED antitrust haunted united	nitwit annotate handout undated	nudity antidote indeed want-ad	night-duty entity knighthood	noted entitle undoubted	needed handed untidy
212	ANTENNA handiness intense sentence	andante entwine intonate sentinel	Anthony inattentive one-to-one centennial	antonym indent undeniable	india-ink Indian unthankful	antiknock intend wanton
213	ANTIMATTER anytime inadmissible ointment	anadem endemic indemnify on-time	anathema handmade intimacy onetime	anatomy handmaiden intimidate sentiment	anthem handyman nightmare untimely	antimissile honeydew-melon nutmeg windmill
214	NUTTER notary anterior enter hundred international unit-rule	network nutriment anthracite entertain hinterland interval untiring	neither nitric anteroom entrance interact interview winter	Netherlands nitrate endear entry interest introduce wonder	nodder nightrobe endorse handrail interior under	neutral another endure handwriting intern Unitarian
215	NOODLE indolent needle until	antelope indulge needless windless	anthill intellect new-deal	endless intelligent night-owl	handle intolerable sandal	indelicate know-it-all swindle
216	SANDWICH antechamber wantage	nightshade indigenous window-shopping	night-watch indigestion	notation intuition	nutshell untouchable	annotation windowshade
217	NIGHTGOWN antagonist handicraft indigo untangle	nothing antichrist hunting indignant winding	nightcap antics handcuff induction wanting	nautical antique handicap intact syndicate	nightingale anything inadequate integrity	nutcracker ending index intoxicated
218	NIGHTFALL antiphony undeveloped	native inadvisable undefeated	notification indifferent scientific	endeavor individual	endive indefinite	handful undefined
219	NOTEBOOK antipathy handball windpipe	notable antipode inaudible sandbox	night-pay antipope independent sound-box	antibiotics handbag inedible	antibody handbill knee-deep	antipasto handbook knotty-pine

220	NONCE nainsook	ananas nonsense	announce nonuse	annoyance onions	assonance onionskin	enhance unanswered
221	UNKNIT nontechnical unwanted	noontime anoint union-dues	ninth innuendo	nineteen know-nothing	ninety unintelligible	nondenominati unintentional
222	NONUNION unknown	ninon unannounced	no-nonsense	nonnegotiable	nonentity	non-owner
223	NOON-MEAL nonmedical unanimated	anonymous nonmember unanimous	inanimate nonmetal	ninnyhammer nonmilitary	nonemergency synonym	nonemotional synonymous
224	NUNNERY unhonored	nonracial	nonradical	onion-ring	union-organizer	unenrolled
225	SON-IN-LAW unenlightened	nonliquid unenlarged	nonliterary unanalyzed	nonelect union-hall	nonallied union-labor	nonelastic union-leader
226	UNION-JACK uninsured	nonchalant union-shop	nonjuror uninitiated	nonage	knee-injury	uninjured
227	NONAGON nonacceptance unincorporated	nincompoop nonactive	nannygoat nonaggressive	nankeen nonequal	non-com nonexclusive	nonconformist unknowing
228	NINEVEH nonferrous uninformed	nine-footer nonavailable union-official	nonviolence unenviable	nonfat unenforcible	nonvoting uninventive	nonfeasance uninvited
229	NINEPINS nonplus nonpolitical	nonabsorbent nonpros union-pay	nonbeliever nonpartisan	nonbreakable nonoperative	nonpaying nonprofessional	nonpareil nonprofit



230	GNOMES inmost	names enemies	namesake unmistakable	nemesis unmask	numismatist	animosity
231	NOMAD inmate	named pneumatic	new-math	name-dropper	animate	enmity
232	NEW-MOON nominee unmannerly	cinnamon numbness unmentionable	cyanamide pneumonia unmindful	honeymoon sea-anemone unwomanly	inhuman snowman wissenheimer	nominal unmanly
233	ANEMOMETER	name-maker	new-member	unmaimed	unmemorized	unmomentous
234	NIMROD enumerate	namer unmarred	numeral unmarked	numerology unmerciful	newmarket unmarried	enamor un-American
235	ANIMAL	nameless	numbly	enamel	anomaly	pneumology
236	ANIMATION	unemotional	unimaginative	unmatched	unmeshed	
237	WINEMAKER	naming	anemic	inimical	unmake	
238	NYMPH	unemphatic	unmovable	nemophila	unmiffed	unmuffled
239	NAMEPLATE unimproved	nimble unimpressive	number unambiguous	unemployed unamiable	unimportant unhampered	unimpaired snowmobile

240	NURSE owners	nursery unrest	neurosis unhorse	nearsighted sonorous	honors sunrise	onerous
241	NARRATOR nard snort	inarticulate nerd unearth	inert neurotic unhurt	inheritance north unredeemed	inroad onward unworthy	inward snarl unwritten
242	NEURON unworn	no-iron unwarned	no-run unwarranted	nearness	narrowness	unearned
243	NORMAN narrow-minded	norm unarmed	normal innermost	near-miss	Norma	enormous
244	HONORARY	nearer	narrower	unrewarded		
245	NARWHAL knurl unroyal	narrowly one-reel snarl	nearly unrelenting	New-World unreliable	enroll unruly	gnarl unreal
246	ENERGY inertia	narration onrush	nourishment ownership	Norwegian	enrage	enrich
247	NARCOTICS honoring	nark unrecorded	Newark unrequited	New-York unerring	anarchy unrecoverable	on-record
248	NIRVANA unrefined	nerve unruffled	no-refund	enervate	unravel	unrivalled
249	ENROBE unripe	nearby unrippled	enrapt unwrap	enwrap	honorable	unrepentant

250	NELSON enlist	nails in-laws	nihilist unlace	annals unless	analyze unwholesome	awnless
251	NEWLYWED inlet unhealthy	annihilate knelt unladylike	annulled nailed unlit	enlighten sunlight unload	inalterable unallotted	inhaled unallowed
252	ENAMEL inalienable	nylon	nail	aniline	inland	on-line
253	ANNULMENT	sunlamp	newly-made	unlimited	unilluminated	unlamented
254	INHALER	nailer	enlargement	kneeler	unlearned	unalarmed
255	HONOLULU	nailess	nail-hole	nilly-willy	unloyal	
256	KNOWLEDGE	analgesic	analogy	ineligible	unlatch	unleash
257	KNEELING unlock	nailing unlucky	no-luck unwelcome	new-look unwilling	onlooker unallocated	unlike unlooked-for
258	UNLOVED in-love	nail-file on-leave	New-Left unlawful	nullify unlive	analphabet	enliven
259	NAIL-POLISH unliable	nail-biting inhalable	nail-up unallowable	nol-pros unlabeled	analeptic unlabored	unhelpful

260	NATCHEZ inches	nauseous injustice	niches unjust	notches	nudges	hinges
261	UNWASHED inched	nidget one-shot	notched unshod	nudged unshut	gnashed initiated	enjoyed
262	ENGINE ingenious sunshine	ancient ingenue unchained	ascension injunction unchanged	enchant knee-jointed ungenerous	engineer nation ungentle	enjoin notion
263	NOTCHMARK	enjoyment	inchmeal	unashamed		
264	KNEE-JERK insurance unshrinkable	censure nature unsure	century notcher	enshrine nudger	ensure on-shore	injury onager
265	ANGEL unshielded	ENCHILADA unsheltered	initial unusual	sensual	unchallenged	unchilled
266	HINGE-JOINT	unjudged	un-Jewish			
267	GNASHING unshackle	nudging	enjoying	inject	unchecked	unshaken
268	ANCHOVY unchivalrous	in-a-jiffy unchafable	unshaven	unshifted	unshuffled	unshoveled
269	HUNCHBACK unwashable	enjoyable wineshop	snow-job	unchaperoned	unshapely	unship

270	inks encase inquest snacks	negus inaccessible unaccustomed	next inexcusable unexpected	nexus inexpensive unexplored	knocks inexperience unquestioned	annex innocuous Yankees
271	necktie nicotine iniquity uncaught	naked anecdote honky-tonk	negative enact hunky-dory	nocturnal inequitable knockout	nugget inquietude uncut	nectar inactive ungodly
272	nickname inconceivable inconvertible	knickknack incongruous unacquainted	noggin inconsiderate unconcerned	knock-knee inconsistent unkind	encounter inconsolable sunken	henequen inconvenience
273	newcomer honeycomb incumbent	encamp income uncomfortable	encomium incomparable oncoming	encumber incompatible unicum	enigma incompetent unkempt	encompass incomplete
274	nacre Niagara engrave incorrect knocker	nagger nicker hunker increase ungraceful	neckerchief niggard inaccurate incur unguarded	Negro anchor inaugural inquire unicorn	neck-rein encore incarnate knackwurst winker	necrology encourage incorporate knickerbockers winegrower
275	nickel no-cal include uncle	necklace nucleus inequality unequal	neckline ankle inkling wine-cooler	neglect enclose inoculate wineglass	negligee incalculable knuckle	niggle incline unclaimed
276	negation encage	negotiate engage	nicotiana inaction	noxious incautious	anguish unction	anxious
277	nagging ongoing	necking ungag	nogging winking	honey-cake sinking	inking synagogue	knocking
278	no-cavity unequivocal	no-caf	encage	knock-free	knock-off	uncover
279	hanky-panky knockabout	incapable uncouple	innkeeper unequipped	incubate unoccupied	inkpot	kneecap

280	naves infuse knaves	novice invest unfasten	nephews investigate	nevus invisible	envious invoice	infest knives
281	naphtha infidel unfadable	neophyte invade unfit	nifty innovate	no-fat invidious	Nevada invite	inevitable unavoidable
282	novena invent unfounded	newfound inoffensive unwoven	no-fun invincible	infant uneven	infantry uneventful	infinite unfinished
283	navy-man	November	infamous	one-family	unfamiliar	
284	nefarious enfranchise invariable unfortunate unversed	nephritis environ invert unfurnished	nevevvr infer knavery uniform	nouveau-riche infirm unfair universe	anniversary inform unforeseen university	enforce infringe unforgettable unvaried
285	navel inflame inflow unavailable	naval infield invalid unfilled	novel inflate invaluable unflattering	anvil inflict involuntary unfold	envelope influence involve univalve	infallible influenza invulnerable unveil
286	new-fashion infatuate unfashionable	navy-ship innovation	novation invasion	envision knavish	inefficient knife-edge	infusion unofficial
287	navigator invoke	novocaine unaffected	ineffective Univac	infect	invective	invigorate
288	navy-wife	any-five	in-view-of	knife-file	unfavorable	
289	navy-bean unifiable	navy-brass	enfeeble	enviable	unevaporated	unfabricated

290	nabs knapsack	naps knobs	nibs unbiased	nips unobserved	NBC unobscured	nubs unopposed
291	nobody inept unbutton	no-bid inhabit unobtrusive	nepotism inhibit unhoped	Neptune input unpaid	anybody knapweed unpatriotic	inapt unapt sauna-bath
292	nepenthe one-by-one snub-nosed	Nippon unbeknownst	nubbin unbind	henbane unbend	inbound unpin	kneepan unopened
293	napalm	niobium	honey-palm	one-upmanship	wine-palm	sunbeam
294	napper inebriated unprepared	neighbor inborn unpromising	napery unbearable unproved	newborn unbroken unprovoked	inappreciable unburden unpure	inopportune unparalleled
295	nibble Naples inapplicable	nipple Napoleon unable	nebulous Hannibal unbelief	niblick Nobel unbolt	nobleman enable unbalanced	nubile inability unpleasant
296	nuptials	honey-beige	one-page	inhibition	unabashed	snapshot
297	napkin Winnipeg	nipping unbuckle	henpecked	knobkerrie	unbecoming	unpack
298	napiform unbaffled	unpaved	unbefitting	unbeveled	unbehaved	unhopeful
299	nabob	nip-up	unbiblical	unpayable	unpopular	unpublished

300	masseuse muses	mesas Messias	masses Mississippi	misses Moses	misuse	mosses
301	mast mister must homestead	master mistral moustache homicide	masticate mistrial mustard home-study	misdeed mistrust muster Mae-West	mist moist mystery	mistake most hamster
302	mason misnomer	messenger misunderstand	mezzanine mizzen	misanthrope muezzin	misinterpret Amazon	misinformed Samson
303	museum amazement	messmate amusement	miasma	mesmerize	mismanagement	mismatch
304	masseur misericord	miser amuser	miserable emissary	misery Missouri	misrule	miserere
305	missal miscellaneous mussel	missile misology muzzle	measles Moselle himself	mislay Moslem myself	misalliance muslin	mausoleum muscle
306	message misogynist	massage moisture	mischance musician	mischief	misjudge	mischosen
307	mascot misconduct mosque mosaic	mask misgivings mosquito homesick	mascara misgovern muscular amazing	masculine misguided music	masquerade misogamist musk	massacre missing musket
308	misfit hemisphere	massive whomsoever	misfire amusive	missive	misfortune	misfeasance
309	mishap misprint	misplay homo-sapiens	misplace homespun	misapply mass-produced	misbehave	misbelief



310	maids medicine moths	mats midsummer amidst	mates medusa mudslinger	madhouse midsemester immodest	matzo modes	meadows modest
311	method humidity	motet imitate	mediator immediate	Methodist	matador	Mediterranean
312	madonna methane emptiness	maiden median hometown	mitten matinee	madness mutiny	midnight midwinter	meatiness mutton
313	medium meatman	madam hematoma	madman home-team	mathematics sometimes	mad-money	mahatma
314	matron meteor mutter cemetery	material metropolis Madeira symmetry	maternal moderate Mata-Hari	matter modern matrimony	mattress mother humdrum	meter motor humidor
315	medal middling mutilate	meddle model mythology	medial motel	metal module	mettle mottled	middle muddled
316	mod-show mutation	mod-shop home-dish	mediation imitation	amidships	midshipman	modish
317	madcap meeting humdinger	mating meticulous omitting	matting mitigate something	medical modicum	medicare mythical	mediocre mudguard
318	midwife modify	medieval humidifier	metaphysics	metaphor	midfield	motive
319	meatball	made-up	metabolic	mouthpiece	mutable	mudpie

320	manse minus monster ominous	mayonnaise miniskirt monsoon	manslaughter means municipal	mainsail minister amnesty	menace minstrel emancipate	mince monastery immense
321	mint man-trap mentor month amount	maintain maundy mind mountain emanate	Manhattan meantime minute mandolin humanity	manhood man-eater Monday minidress immunity	mandate mend monitor amend womanhood	mantle mental monotonous amenity cement
322	minion mononuclear	manana mononucleosis	manhandle amanuensis	meningitis eminent	Mennonite imminent	manhunt
323	monument monomania	mainmast moneymaker	man-made moneyman	manometer ammonium	manumit homonym	minimum omnium
324	manor minor Monroe	manner minority homeowner	manure monarch	miner monaural	man-hour money-order	mineral monorail
325	manhole moneylender hymnal	mainland meanwhile womanly	mainly monologue	manly moonlight	manual Manila	monolith Emmanuel
326	manager monition omniscience	manger moonshine ammunition	mansion moonshell	mention moonship	menagerie moonshot	miniature munch
327	maniac minicab monkey	mankind mining monogamist	manikin mink moneygrubber	manacle monk Munich	manicure monocle ammoniac	meaning monogram
328	manifest money-flow moon-voyage	manful monophonic munificent	manifold moonfaced omnnificent	maneuver moonfish omnivorous	manufacturer moon-flight	menfolk moon-flower
329	man- money-belt amenable	ape monoplane hymenopteron	manipulate monopoly omnibus	manpower moonbeam omnipotent	minable moon-blind	moneybags myna-bird

330	mammas mimeses	maims mimosa	mayhems momus	memos mummies	memsahib	mimes
331	maimed Mohammedan ohmmeter	mammate Muhammad	mammatocumulus mummy-tomb	mammoth myomata	mayhemmed homemade	mimetic imamate
332	mammon	memento	Miamian	moment	momentum	semimonthly
333	mimamsa	mamamu	mamma-mia	semimemorable		
334	memorial mummer	memory mammer	memoir mammary	memorandum homomorphy	maimer	mimer
335	mammal	my-mail	mamluk	mamelon	hamamelis	mammillary
336	home-mission	home-match	mumchance	mummichog		
337	mammock homemaker	mimic	mimeograph	maiming	mumming	mummy-case
338	Memphis	home-movie	humhum-fabric	mummify	mammiform	
339	mamba memo-pad	mambo mummy-bag	member mumbo-jumbo	mumps	mumble	membrane

340	mercenary Mars	mercier Morse	mercy amerce	morass amorous	morose humorous	morsel immerse
341	mart martyr myrtle	maraud meridian myriad	maritime merit hammer-throw	married mirth homeward	marten mortal smart	martini murder
342	marine morning	mariner mourner	Marianne maharani	marihuana moron	maroon home-run	marionette
343	marmalade merrymakers	marmoset Mormon	mermaid murmur	marmot myriameter	marimba homeroom	merriment
344	mirror	merrier	moorier	marara	hammerer	
345	marl merrily immoral	moral amarillo	morale hammerlock	mural home-rule	marlin humorless	merely emerald
346	march margarine marshal	Martian marchioness merchandise	maharaja marriage emerge	marchpane meerschaum emergency	margin merger mirage	marsh merchant hemorrhage
347	mark mercantile homework	market miracle smirk	marigold mercury	maracas morgue	marksman marque	marquess America
348	marrowfat Morpheus	marvel Moravia	moreover	MIRV	morphine	murphy-bed
349	marble moribund	marabou hammer-beam	mariposa hammer-blow	marplot	marrowbone	morbid

350	MALICE aimless	homeless mails	maelstrom molest	mills seamless	miles	millisecond
351	MALT assimilate mallet military simultaneous	melt emulate meld millet smolder	mold hamlet melodrama muleteer umlaut	omelet homiletics melody multiple	smelt humility milady multitude	mulatto malady mild simulate
352	MELON malign	Himalayans melancholy	hemline millennial	semolina millennium	milliner million	homeland
353	mailman mule-mark	maim mealymouthed	melamine emolument	millimeter small-minded	millman	muleman
354	molar mailer	miler milord	malaria millwright	milller ameliorate	milliard similar	mealworm
355	may-lily	molehill	milliliter	mill-wheel	melilot	
356	militia mulish	malicious emulsion	mileage humiliation	maladjusted homology	millage	mulch
357	malcontent molycoddle	mailing molecule	malignant Malaga	malkin amalgamate	milk hemlock	milligram homologous
358	mellophone mellifluous mollify	malevolent milee-feuille homelife	malefactor millefleurs	malfeasance millfeed	malformed millefiore	malfunction mule-foot
359	mailbag malapert	mail-boat malaprop	mail-pouch mulberry	mailbox muleback	malleable smallpox	melba

360	magistrate	majesty	majuscule	matches	images	
361	machete	matchwood	mashed	midget	meshed	emaciate
362	machine	mission	motion	magenta	mushiness	emotion
	imagination	homogenous	omission			
363	matchmaker	matchmark	mishmash	mushmelon	MGM	
364	major	majority	mature	measure	majorette	masher
	moocher	mushroom	meshwork	homager	imagery	
365	majolica	Magellan	matchless	matchlock	matchholder	mutual
366	magician	muchacha				
367	magic	mashing	meshing	matching	Michigan	
368	midge-fly	home-chef	semishift			
369	matchable	matchbook	matchbox	matchboard	match-up	mushball

370	macassar mix	maccus mucus	magazine mugs	maxim amongst	megacycle hammocks	mikes
371	maquette mocked	maggot mugged	macadam	megaton	makedo	mikado
372	magnet magnitude	magnate mahogany	mackintosh magnolia	magnesium mechanic	magnanimous mackinaw	magnificent
373	magma	mugwump	homecoming	home-game	homogamy	
374	macaroon microscope immigrant	mackerel mockery homecraft	maker mongrel homegrown	make-work muckraker	meager mugger	microbe emigrant
375	mackle amical	mangle immaculate	mingle semigloss	Mogul smuggle	Michael	meekly
376	makeshift	mug-shot	mawkish			
377	making	mocking	mugging	mucking	smacking	smoking
378	megaphone	make-off	makefast	make-over	Machiavellian	mugful
379	magpie hummingbird	make-believe Yom-Kippur	makeup amicable	Maccabee	megapolis	mock-up

380	mavis emphysema	movies ham-fisted	moves home	muffs office	Mephisto	emphasis
381	moviedom emphatic	moved	miffed	mufti	amphetamine	amphitheater
382	muffin	home	phone	homophony	home-fun	semifinal
383	moviemaker	moveman	movement	amphima-cer	amphimixis	
384	Mayfair samovar	mover mavourneen	maverick myophore	amphora semaphore	hamfare	whomever
385	mayflower homefelt	mayfly	movieland	moveless	muffler	hemophilic
386	mayfish	movie-show	home-voyage	semiofficial		
387	maffick	moviegoer	moving	movie-camera	home-viewing	
388	movie-fan	Mafia-family	move-off	move-over		
389	movable	movie-plot	move-up	amphibious	amphipod	amphibole



390	maps emboss impossible	mobster embosom impostor	ambassador home-base symposium	ambuscade impasse	embassy impassive	embezzle impose
391	moppet empathy ombudsman	ambidextrous impediment wombat	amputate impudent symptom	embitter impute sympathy	embody impetus somebody	embed homebody
392	ambient impinge	embankment impound	impanel impugn	impend impunity	impenetrable homebound	impenitent sampan
393	map-maker	embalm	empyema	wampum		
394	mapper embrace emperor impart impress umbrella	mayberry ember empress imperative imprint sombrero	moper embroider hamburger imperfect imprison	amber embroil hamper imperial improper	embark empire homburg impertinent improve	embarrass empower impair import impure
395	maple amplify humble impolite semblance	mobility ampul impel impala symbol	maypole embellish implement impulse assembly	ambulance emblem implicate umbilical	amiable employ implore sample	ample home-plate imply simple
396	ambush impeach	ambition	impatient	impassionate	impetuous	impish
397	mobcap humbug	moping hymnbook	mobbing impact	mopping	myopic	ambiguous
398	ambivalent	ambivert	amebiform	impavid	impoverished	swamp-fever
399	maypop	mopboard	mop-up	humpback	imbibe	impubic

400	racist irresistible	recess warehouses	resist	raises	roses	horses
401	receipt restrict airstrip worst	recital roast arrest wrest	residual roost erst	rest roster hirsute	restore rust wrest	restrain rustic wrist
402	raisin resign hoarseness	reason resound orison	resin arsenal war-zone	recent arson Arizona	resent arsenic	rescind horizon
403	reassemble horseman	raceme oarsman	razzmatazz warehouseman	resemble wearisome	resume	heroism
404	racehorse resort	racer resource	razor eraser	reassert horse-race	research horseradish	reserve
405	razzle roselike wrestle	resale rosella	resolute rustle	resolve herself	result ourselves	roseleaf yourself
406	recession	rescission	rose-cheeked	rose-show	horseshoe	
407	rascal rose-cut harassing	racecourse Rosicrucian	rescue rusk	racing rye-whiskey	rising warehousing	risk arousing
408	receiver horseflesh	rosefish	horsefece	horsefeathers	horsefish	horsefly
409	rasp reciprocal responsible	raspberry respect airspace	receptacle respiration horseback	reception respite horsepower	recipe resplendent horsewhip	recipient respond irascible

410	ARTIST radius	ARTISAN raticide	yardstick reduce	roadster righteous	Rhodes ritzy	roads arduous
411	RAT-A-TAT airtight irritate ruttled	REDHEAD aridity radiate	redwood certitude red-hot	hardtop hardhead redoubtable	erudite hardwood redtop	redoubt heredity rotate
412	RATTAN ardent readiness rudeness	RED-NECK earthen retain	red-nose harden roadnet	redness hearten rotten	retinue ordain routine	warden radiant ruddiness
413	RADIUM ready-made	RADIOMAN redeem	yardman rudiments	radome	roadman	rhythm
414	RADAR Rotarian retard retrieve hairdresser	RIOTER rather retire return orator	artery reader retort rider order	air-to-air raider retrace rotary wardrobe	aerodrome redress retract rudder writer	hoarder reiterate retreat ardor
415	RADIAL airedale heartless retell	HURDLE artless ordeal riddle	retail earthling ratline ruthless	redolent hardly readily whortleberry	rattle heartily redleg	redial heartland retaliate
416	RADISH retouch	RADIATION ruttish	artichoke erudition	yardage hardship	road-show heritage	irritation hard-shell
417	RADIOACTIVE articulate red-oak wording	RED-CARPET erratic redact writing	earthquake heartache redcap	radical radiocast ridicule	redcoat radiograph riding	article reading surtax
418	RADIO WAVE reedfish write-off	HORS-D-OEUVRE artful certify	radiophoto artifact	ratfish artificial	ratify heartfelt	redfin hurtful
419	HEARTBREAK hartebeest ratproof	REDBREAST air-tube redback	heartbeat hardpan redberry	rutabaga irritable redouble	yardbird ratable	wiretap rataplan

420	rains reinstate harness soreness	rancid renews irons	ransack rhinoceros ironsides	ransom rinse weariness	reigns ruins urns	reinsert earnest Uranus
421	rand reenter rondeau around ornate	rant reindeer rondo errand warrant	random render round errant worn-out	rainy-day rent rundown hairnet surrender	rain-out reunite runt hornet surround	raindrop rind aeronaut orient
422	rayonnant	renounce	renown	reunion	run-in	ironhanded
423	rainmaker ornament	reanimate uranium	rename surname	renominate	renumerate	ironmonger
424	rainwear iron-ore	renewer ironworks	ruiner ornery	runner warner	earner	ironer
425	rainless	renewal	run-well	one-reel	unreal	
426	ranch renege	range arrange	rainwash orange	rain-check wrench	reenjoy	reinsurance
427	rank earnings	rancor ironclad	raining ironic	rink ironing	running warning	raincoat wrinkle
428	rainfall reinvest	rainfrog run-off	rainful Herrenvolk	aeronaal	reinforce	renovate
429	rainbow hornblende	rainpool hornbook	rainproof hornpipe	runabout	runup	hornbill

430	rams armies	reams armistice	rooms airmass	remiss harems	rhymes surmise	arms
431	remedy armada	remit aromatic	remodel armed	remote eremite	rheumatism hermit	roomette warmth
432	raiment remunerate Armenian surmount	remain Roman ermine	remind romantic harmony	reminisce Romania hormone	remnant ruminant ceremony	remonstrate airman sermon
433	remember	rememorate	roommate	rum-mill	armament	
434	rammer roomer	ramrod rumor	remark rumrunner	remorse armor	rhymers armory	roamer warmer
435	remilitarize armhole armlock	rimland armlet	ramulous harmless	airmail ormolu	air-mile warmly	armless armload
436	ramjet	ramshackle	rematch	remission	rummage	armchair
437	remake arming	rhyming harming	roaming warmonger	rooming	Armageddon	armguard
438	ramify harmful	reemphasize	removal	roomful	armful	earmuff
439	ramp reimburse rambunctious	rampart rhombus rambutan	ramble rhumba armpit	rampage romp warm-up	reemploy rumble	Rembrandt rumpus

440	rehearsal warriors	roars	arrear	errors	horrors	warhorse
441	rarity reward	reared reword	reread rewrite	reredos roared	reorder Ararat	reroute arrowroot
442	rear-window war-horn	rearrange warworn	rerun	rewarned	reworn	rareness
443	rearmament	reremouse	rearmost	rewam	earworm	wireworm
444	rare-earth rewirer	rarer roarer	rareripe	rere-arch	rearhorse	rearward
445	rarely	rear-alley	reroll	rerail	rural	war-rally
446	raree-show	rear-echelon	rerush	reration	heroworship	arrearage
447	reargue rework	rear-guard rehearing	reorganize earring	rearing hierarchy	roaring	rewiring
448	rara-avis	rear-fanged	rearview	rarefy	errorfree	
449	rarebit	re-orbit	roorback	wire-rope		

450	rails hairless	realize orioles	release wireless	realest	realist	airless
451	reality roulette hurled	realty royalty world	reallot air-letter	relative air-light	rolled harlot	roulade herald
452	realign airland sirloin	relent airline	reliance earliness	relinquish Ireland	reloan orlon	roll-on whirlwind
453	railman heirloom	realm	relumine	rollman	rollmops	Harlem
454	railroad ruler	raillery	rallier	reeler	reelrall	roller
455	railwayless	roleless	royal-law	royal-yellow	ruleless	
456	railage earlship	reallege horology	reelible	relation	religion	relish
457	railing relocate harlequin	reelect roll-call oarlock	relax rollicking warlike	relegate rolling whirligig	relic hair-lock yearling	reluctant hireling yearlong
458	railfan airlift	relevant werewolf	relief	relieve	relive	roll-off
459	railbird earlobe	reliable harelip	relapse hurly-burly	rollback orlop	roly-poly whirlpool	earlap

460	rages ridges	ratios righteous	regisseur rushes	register arches	rejoice	riches
461	ratchet archdiocese airsheet	recheat arched	reshod earshot	rigid urged	reached archduke	rushed wretched
462	reagent richness origin	ration Russian urchin	regent archenemy urgency	regenerate Argentina surgeon	region erosion assertion	rejoin Eurasian
463	regime	regiment	Rushmore	hair-shampoo	Irishman	
464	rasher archer searcher	richer harsher surgery	reassure erasure	Roger orchard	rusher urger	rush-hour surcharge
465	racial ear-shell	Richelieu harshly	richly searchlight	ritual	rushlight	archlute
466	rejudge	Rosh-Hashanah	rush-job	arch-joint		
467	raging air-check	reaching urging	recheck	reject	reshake	rushing
468	rechauffe arch-foe	reshave arch-wife	reshuffle archfiend	rejuvenate Irish-ivy	rush-off	rye-chaff
469	reshape worship	reship	airship	archbishop	hairsheep	warship



470	racks requisite orgasm	rags ruckus works	recast arcs wrecks	request heroics circus	raucous irksome sarcasm	rex orchestra
471	racket requite arcade circuit	ragged rickets arctic	ragtime rocket architect	react regatta erect	rectangle rigadoon irrigate	rector rugged haircut
472	raccoon rekindle hurricane	reckon air-gun organ	reconcile arcane Oregon	reconsider archangel	reconstruct arrogance	regain hearken
473	ragman requiem circumstance	ragamuffin rigmarole	recommend argument	recompense origami	recommit war-game	recumbent workman
474	raker regard aircrew	record regret hara-kiri	recourse require war-cry	recreation rigor warcraft	recruit rocker worker	recur aircraft
475	raglan recoil ringleader wiggler	rakehell recollect air-cooled oracle	recall regular argali circle	reckless regalia argyle	reclaim recluse hiring-hall	recline row-galley hourglass
476	reaction erection	rickshaw irrigation	ricochet workshop	roguish wreckage	air-coach	air-gauge
477	raking rococo	recognize archaic	recook arguing	rigging working	ringing	rocking
478	recover	rockfall	rock-fill	Roquefort	rockfish	archives
479	recap rock-bottom	recapitulation rugby	recuperate archipelago	rockabye ark-boat	rockberry herringbone	rockbird arquebus

480	refuse orifice	reviews Orpheus	revise wharves	revisit war-office	airwaves service	harvest surface
481	raft roughdry	refit arrived	rift hereafter	rivet horrified	roofed war-veteran	rooftop servitude
482	raven roughness	ravine ruffian	refine earphone	revenge orphan	revenue wharfinger	roughneck servant
483	revamp	refumble	Orpheum	war-fame	wharfmaster	
484	reefer refrain river	refer refresh rover	reform refrigerator roughrider	referee refurbished wherever	referendum reverse surveyor	reverend revert
485	raffle reveal revulsion airfield	ravioli revel rifle airflow	refill revolt rival arrival	reflect revolve rivulet oriflamme	reflux revolution rueful servile	revalue revolver ruffle
486	ravage roughshod	ravish oarfish	refashion wharfage	refuge	revision	roughage
487	revocation	raving	roofing	horrifying	irrevocable	
488	revival	rough-fish	rough-footed	wharf-fish	survivor	
489	rev-up	reviewable	refabricate	roofable	rough-up	wharf-boat

490	rabies rhapsody arabesque	repast robes hairpiece	repose ropes harps	repost airbase herbs	rebus airbus surpass	robust Arabs
491	rabbit rebuttal rubytail	rabid reptile wrapped	rapid repute arbiter	rapt robot orbit	rebate rowboat whereabouts	repeat rubdown acerbity
492	rapine robin whereupon	rebound ruby-wine warbonnet	reopen hairpin serpent	repent harpoon	ribbon European	ripen urban
493	repayment	air-boom	robomb	europium	herbwoman	war-poem
494	rapier repair reprieve rhubarb arbor cerebrum	rapper report reprimand robber harbor	rapport repartee reproach rob-Toy harebrained	rapparee reprehend reprobate roper wrapper	reappear represent reproof rubber surprise	reaper repress riboast airport Cerberus
495	rabble replace repulse horrible	rape-oil replant ripple	rebel replenish rubble	rebuild replete ruble	repeal replica rubella	repel reply airplane
496	rapacious eruption	rapture harp-shell	rubbish herbage	rupture	repatch	arpeggio
497	rebuke rubicund	repugnance Arabic	repack Areopagus	roebuck harbinger	rope-key wrapping	rubicon yearbook
498	rebuff herbivore	repave	riboflavin	rope-off	rubify	rub-off
499	republic orb-web	republish war-baby	repeople	rip-up	air-pipe	earbob

500	lasses alehouses	lassoes aliases	leases Ulysses	lazy-Susan Alsace	losses	Louis-Seize
501	last lust all-star whilst	lassitude lucid elastic celestial	lawsuit luster elucidate solicit	least lowest holster	lest LSD illustrate	list all-set ulster
502	laziness loosen	lessen lozenge	lesson hallucination	license halcyon	liaison Wilson	listen
503	lissome	lyceum	wholesome	Elysium		
504	lacerate elsewhere	laser illusory	lessor ulcer	lizard	loser	also-ran
505	lazily whole-souled	leasehold	low-slung	luzula	oil-seal	wholesale
506	loose-jointed	Alsatian	oil-switch	wall-switch	yellow-sage	yellow-sedge
507	lacing	leasing	losing	Alaska	oilskin	woolsack
508	lascivious	laissez-faire	Lucifer	elusive	illusive	
509	lazybones allspice	lesbian	lisp	low-spirited	wellspring	well-spoken

510	lattice loudspeaker waltz	lettuce Lao-Tse	ladies eldest	lads halitosis	lighthouse oldest	lotus holidays
511	latitude altitude wilted	lighted eluded yuletide	loaded halted solidity	la-di-da holdout solitude	low-tide old-time	allotted well-to-do
512	Latin lighten	latent lightning	laydown lowdown	lieutenant oldness	litany old-wine	leaden well-done
513	lithium altimeter seldom	leitmotif allotment	loudmouth illtimed	light-meter ultimate	light-minded yuletide	litmus well-timed
514	ladder letter looter alderman holy-water	lateral leotard lothario altar older	lather literal lottery alter ulterior	latter literature louder elder yielder	leader litter Luther halter	leather loiter altruism holder
515	ladle little	lately wall-to-wall	ladylike wildlife	ladylove wildly	lethal yellowtail	leadless
516	ladyship old-shoe	late-show salutation	latish	Low-Dutch	old-age	oldish
517	leading altogether sliding	latecomer Eolithic	litigant holding	lithograph welding	loading wildcat	ludicrous yielding
518	ladyfinger healthful well-advised	leadoff holdover wildfire	lightface illadvised wildfowl	lightfast oldfangled	lightfingered old-fashioned	light-foot oldwife
519	ladybird let-up	ladybug hilltop	laudable holdback	leadback hold-up	lead-up wildebeest	lead-pipe

520	lance lyonnaise silence	lens alliance	lioness aliens	linseed allowance	lonesome holiness	lunacy illness
521	land laundry alienate wall-unit	lend lentil island well-knit	lent lindy eland cylinder	lint linden Holland assailant	lintel lunatic oleander	lean-to London walnut
522	lenient all-in-one	Lenin hole-in-one	leonine illanun	linen Illinoian	linin wellknown	alanine
523	lineament illinium	lineman	liniment	Holy-Name	alignment	allonym
524	tanner loaner	lanyard loanword	leaner loner	liner lunar	linear Leonardo	lionhearted alienor
525	lanolin lonely	lienal lunule	lineal willy-nilly	line-haul	linoleate	linoleum
526	launch luncheon ill-natured	lounge lunge	lineage lynch	longitude alienation	lingerie elench	lunation elenge
527	lanky loaning	lining loincloth	link low-necked	links lunkhead	linocut lynx	leaning all-inclusive
528	lanuvium well-enough	lenify well-informed	line-firing	line-off	lion-fish	ill-informed
529	lenape loanable	unable loanblend	linebacker alienable	line-up	linebred	linebreed

530	lambs elms	limbs Hallowmas	limousine slums	looms	low-mass	almost
531	lamdan ill-mated	limit well-made	a-la-mode	almighty	elm-tea	helmet
532	lawman limnologist alimony illuminate	layman luminary almanac oilman	lameness low-minded aluminum well-mannered	lament low-man alumnus well-meaning	lemon ailment element whaleman	limen aliment eliminate
533	lamium	limeman	alma-mater	well-memorized		
534	lemur halomorphic	limerick oleomargarine	all-American	allomorph	Hail-Mary	hallmark
535	lamella elemol	lamellate elm-hill	limelight oil-mill	lime-oil	lowmelting	all-male
536	limation ill-matched	lime-ash well-matched	lime-juicer	Limoges	limewash	lomatia
537	lawmaker almicore	lambkill almucantar	lambkin whelming	limekiln salmagundi	lummox	looming
538	loomfixer	lymph	lymphad	well-emphasized		
539	lamp limbo Olympics	lamprey Limburger slumber	limber lumbago	limp lumber	limpid lump	limbus Alhambra

540	larceny hilarious	liars	lawyers	lower-house	walrus	wheelhorse
541	laird lured hilarity	lard laureate well-read	lariat lurid whole-hearted	leeward alert celerity	low-rate all-right salaried	Lord already
542	laryngitis aileron	laurin all-or-none	layer-on hollow-horn	loran well-run	learned well-earned	Lorraine willow-wren
543	larmier lyreman	larryman alarm	lorimer allurement	lormery eelworm	lorum willowworm	lowermost
544	lowerer	lyrurus	allurer	hollerer		
545	laurel	lauryl	lawyerlike	Lorelei	lorilet	Holy-Roller
546	large allergy	largess alurgite	largeness oleraceous	laureation	layerage	lurch
547	lark lower-class	largo lurk	layering lyric	lorica alluring	lorikeet oil-ring	lowercase oil-rock
548	larva	larvule	low-roof	lyreflower	lyriform	
549	larb lyre-back	larboard lyrebird	larrup	layer-up	low-warp	lowerable



550	lawless hula-hulas	lilies oil-wells	lowliest	lulls	lulus	Allhallows
551	lilt well-heeled	lilied well-willed	lily-white ululate	low-yield	loyalty	lulled
552	lillianite	lowland	lowliness	ululant	whale-line	Sally-Lunn
553	law-lamb	lilium	lolium	allelomorph		
554	lowlier	Lollard	well-larded	well-learned	cellular	
555	liliales	lilylike	lily-livered	lily-low	letwel	lowlily
556	lallation	liliaceous	ululation	well-latched		
557	lilac yellowlegs	lolling Yule-log	low-lying soliloquy	lulling	ill-luck	owllike
558	low-level	lowlife	low-lived	well-loved	yellow-livered	all-alive
559	lalapalooza	lilliputian	lollipop	lullaby		

560	latches luscious	lodges elegies	loges eulogist	loggias eyelashes	legislator zoologist	logistics
561	latchet	elegit	legitimate	lodged	alleged	woolshed
562	legend elision	legion elysian	lesion halogen	lotion illusion	allusion solution	elation
563	lodgement	hall-chime	Welshman	eulogium		
564	lasher lushier	ledger Algeria	lecher alleger	leisure well-wisher	lodger wheelchair	lusher
565	lushly	hellishly	oil-shale	owlishly	wellchilled	slouchily
566	ill-judged	all-Jewish	logician	well-judged		
567	latchkey illogical	lodging	logic	lashing	alleging	yellow-jack
568	low-shafted	well-shaven	well-shuffled			
569	awl-shaped	hell-ship	algebra	oil-job	oil-ship	well-shaped

570	laxative locust elixir	laxity low-cost holocaust	legacy log-house	legs likewise	locks lungs	looks elks
571	languid locket elector	liquid lockout electricity	legate lookout hellcat	length low-cut select	locate alley-cat	locked alligator
572	laconic ill-conditioned	lagoon Allegheny	Lackawanna elegance	likeness eloquence	longhand oilcan	well-conditioned silken
573	lagomorph alchemy	legman algometer	legumes illcome	leukemia ill-kempt	ligament welcome	locomotive
574	lacquer logger lucre well-groomed	laggard locker lukewarm well-grown	languor longer lugger	legroom longhair allegorical	linger looker licker	liquor lucrative slugger
575	laical low-calorie oilcloth	legal low-class willingly	likely luckily	local alcohol	locule alkali	long-lived illegal
576	language lockage elocution	languish logjam election	legation luggage sluggish	leakage allegation	lockjaw allocution	loquacious allocation
577	lagging locking	leggings lugging	licking oil-cake	liking	longing	looking
578	lakefront well-covered	lawgiver	liquefy	locofoco	alcove	ill-given
579	legbar look-up	leg-break longboat	leg-pull lugubrious	leucoplast helicopter	likable allocable	lockup

580	laughs life-span olives	layoffs life-size slaves	leaves loaves	levies love-sick	lives lovesome	lifesaver elves
581	laughter livid elevator	lavatory loft ill-fated	lafayette loved slaved	left alleviate solved	lifetime aloft well-fed	lift elevate
582	lavender elephant	liven eleven	live-in elfin	live-one well-founded	love-in slovenly	alphanumeric solvent
583	lavement self-made	leaf-mining	lifeman	lovemaking	alluvium	ill-fame
584	laugher livery hellfire silver	layover loafer illfare slavery	lever lover welfare sulfur	lifer love-arrow well-over	liver louver wolfram	livewire alfresco wolverine
585	lavalava lifelong lovely	lavalieri lifeless alluvial	lawful livelihood alfalfa	leaflet lively olive-oil	level lovelock wallflower	lifeline lovelorn willful
586	lavage wolfish	lavish salvage	leafage salvation	alleviation selfish	elevation	olivaceous
587	layfolk loving	laughing ill-affected	leaving olfactory	living self-confidence	lifeguard well-affected	live-oak
588	laugh-off self-evident	leave-off well-favored	life-force	live-off	Love-wave	ill-favored
589	lavabo live-by	laughable live-up	leafhopper lovable	lifebuoy lovebird	lifeboat love-potion	livable alphabet

590	labs lobbies elopes	laps lobster helps	lapse alabaster wall-base	lips alibis celibacy	loops alps	lopsided ellipse
591	lapidary law-abiding ill-boding	lappet albatross well-paid	leaped albeit whaleboat	libido eloped	lipid allopathy	looped halibut
592	lupine whalebone	albino well-appointed	Albion sleepiness	alpine	hell-bent	olibanum
593	low-beam oil-palm	album	Alabama	albumin	elopement	helpmate
594	labor liberal lubricant wellborn	laboratory liberty elaborate wellbred	lawbreaker Libra elbow-room sleeper	leopard librarian eloper slipper	leap-year looper helper celebrate	leprosy lowbrow ill-bred
595	label lobule hillbilly	lapel tube-oil hullabaloo	liable loophole well-beloved	libel lowbell soluble	lobelia allowable syllable	loblolly helpless
596	libation	lobation	low-budget	lowbush	lowpitched	slipshod
597	lawbook helping	leaping ill-being	lobbying oil-bag	looping well-being	alpaca sleeping	eloping
598	leapfrog	lop-off	all-beef	helpful	wellbehaved	lapful
599	lap-up	leap-up	ale-pub	Ali-Baba	oil-pipe	wallpaper

600	chases joss-house	cheeses shoe-size	choices	jazzist	Jesus	juices
601	chastity geste just suggest	chest gesticulate Jesuit	chestnut gist shoestring	cheese-eater jest showstopper	cheese-head joust adjust	gest justice washstand
602	chasten adjacent	chosen show-scene	geocentric juiciness	jazziness	jacinth	Jason
603	chessman	jasmine	jawsmith	jazzman	chassemaree	
604	chaser	chasseur	chooser	cheesery	jowser	juicer
605	chisel shoe-sale	choiceless wash-sale	jazzily witch-hazel	jostle hashslinger	joyously	juiceless
606	cheese-shop	chess-champion	gestion	gesture	egestion	suggestion
607	chasing joskin	chasse-cafe	chasse-croise	cheesecake	cheesecloth	choosing
608	cheeseflower	Joseph	Josephine	jussive	shows-off	
609	chassepot jazzbow	cheeseparer juice-up	cheeseburger Jezebel	chess-pie shoespoon	chessboard Josup	jasper Shuswap

610	chiteaus shadows	jets sheets	jetsam shots	jettison shouts	Judas geodesy	shades
611	cheated shutdown	jaded shutout	Judith agitate	shaded geodetic	shadowed	shoot-out
612	chatoyant shodden	chutney showdown	jetness shoddiness	jetton shut-in	jitney	shadiness
613	shedman show-time	sheet-home	shittim	shootman	shotmaker	shotman
614	chatter shooter jittery	cheater shouter geotherm	cheddar shudder	chowder shutter	shatter ashtray	shoe-tree watchtower
615	chatelain shadily	chattel shadowland	chatelet shadowly	jetliner shot-hole	shuttle	shadeless
616	chitchat agitation	judiciary	judicious	schottische	shotshell	agiotage
617	chatting sheeting geoduck	cheating shooting watchdog	judicature shotgun Asiatic	shaddock shouting	shading shutting	shadowing jotting
618	shadflower sheetful	shadoof shutoff	sheatfish	she-devil	sheetfed	sheetflood
619	jetbead sheet-block shotbush washed-up	jetport sheathbill shot-put washtub	jodhpur shootable shut-up	shadowbox shootboard chateaubriand	shadbush shoot-up agitable	sheetpiling shotblast hushed-up

620	chance genius shyness	chains genocide	chancellor agency	chanson ginseng	Chinese issuance	genesis oceans
621	chandelier gentle jaundice Shinto	chandler gentry joint shunned	chant genetics Jane-Doe shunt	Chinatown giant John-Doe agenda	gendarme jaunt shanty agent	gender janitor shindig witch-hunt
622	chignon Shenandoah	genuine	Shannon	shenango	shenanigan	shoneen
623	chainman show	chain-method name	Chinaman	chinampa	chunam	genome
624	chinaware January	general joiner	generation junior	generic shiner	generosity	genre
625	chainless oceanology	chainlet shinleaf	channel	chenille	genealogy	genial
626	change gingivitis	chain-shaped agential	chinch jointure	chinchilla	ginger	gingelly
627	chink jonquil shunning	Chinook junk shank	chunk junkie adjunct	gynecologist junction adjoining	johnnycake schnook eugenic	joining shining hygienic
628	Geneva shoe-knife	genuflect	janiform	junefish	juneflower	oceanfront
629	china-boy joinable shinplaster	chinbone Juneberry	chin-up junebud	janapa juniper	johnapple schnapps	johnboat shinbone



630	chemise shames	chimes shamus	chums	gems	James	jams
631	geometry age-mate	jammed	jamwood	jimdandy	jimmyweed	ashamed
632	chimney gymnast hush-money	chow-mein shaman wash-woman	G-man showman watchman	Gemini ashman	geminate hegemony	gymnasium hatchman
633	Jemima	gym-master	jam-maker	show-member		
634	chimer shamrock	chimere shimmer	gemmary shomer	jammer	shamir	shammer
635	chummily shameless	gemlike Ishmael	gemmologist	gemmule	gym-hall	schmaltz
636	gemmieeous	gemmation	gym-shoe	Jamshid	jimjams	shim-sham
637	chiming jamoke	gemming shoemaker	gimcrack watchmaker	gymkhana yashmak	Jamaica	jamming
638	SHAM-FRUIT shameful	CHAMFER sham-feed	gem-fruit chamfron	gemmiferous	shamefaced	shamefast
639	chamber jambeau jumbo	champagne jambalaya jumble	champion jambone jump	champignon jam-pack shambles	chimpanzee jam-up shampoo	chump jamboree

640	chairs jersey	cherries jurist	chores Scheherazade	gyroscope shares	gyrus shears	jars
641	charity chariot shrewd	chard joyride shroud	chart shirt surety	charter short watchword	cheroot shard ushered	cheet shred
642	charnel journal sojourn	churn journey sureness	gerent shrine adjourn	Geronimo shrink assurance	gerund shorn usher-in	geranium shoehorn
643	chairman germinate showroom	charm gerrymander shrimp	charwoman jeremiad washerman	germ juryman washroom	German jurywoman	germane ashram
644	cheerer shirrer	Gerardia shorer	juror surer	sharer assurer	shearer usherer	shearier usurer
645	charlatan schorl usherless	charily sherlock	cheerleader shoreline	Charlie shareholder	cheerless shrill	churlish surely
646	charge shrewish	cherish ushership	church	Churchill	George	gyration
647	charcoal jargon shrug	Cherokee jerrican	gyrocompass shark	Jericho sharing	jerk shirk	jarring shriek
648	chervil shroff	cheerful shrove	sharif surefire	sheriff surefooted	shrift giraffe	shrive
649	charabanc cherub shrapnel	charpoy sharp shrub	cheer-up sharpy	cherry-pie sherbet	chirp shorebird	chirrup showerproof

650	chalice joyless	chills Julius	jalousie shells	jealousy shoelace	jailhouse ageless	jewels socialism
651	child shelter	gelatin shield	gelid shoulder	jilt age-old	jolt agility	shallot
652	challenge jolliness wash-line	chalone julienne	chilliness shalloon	chow-line shallowness	jawline show-line	jillion echelon
653	chalumeau shellman	chillum gelometer	schalmei	schlemiel	shalm	shalom
654	chiller sheller	jailer shalier	jelerang shellier	jewelry shellwork	jollier ashlar	shallower
655	jellyleaf shell-less	jellylike shell-like	jollity agilely	shale-oil shillelagh	shallowly	shell-hole
656	geology	shallowish	shellshake	shell-shock	shilly-shally	hagiology
657	Shalako shellycoat	shealing shilling	shellac Shylock	shellcracker age-long	shell-egg gelignite	shelling hatchling
658	jellify shellflower	jellyfish shell-vault	jollify shelver	shelf	shellfire	shellfish
659	chilblain julep	jailbait shallop	jailbird shellapple	jailbreak shellback	jalopy shellproof	jellybread shilpit

660	cha-chas judges	chiches shojis	chi-chis	cicisbeo	joy-juice	joshes
661	chichituna	jo-jotte	jujitsu	joshed	judged	shushed
662	jejune wishy-washiness	jejunum	Jewishness	shoeshine	Shoshonean	watch-chain
663	judgmatic	judgment	chechem	Chichimec	shisham	hashish-hemp
664	Cheshire	chicharro	joshier	judger	Jewish-rye	ash-shower
665	chachalaca	shashlik	wedge-shell	wishywashily		
666	cha-cha-show	judgeship	hashish-ash			
667	cheechako	joshing	judging	Shoshoko	shushing	
668	Jewish-faith	Jehoshaphat	Cheshvan			
669	Chachapoya shoe-shop	chichipate showshop	chichipe	jojoba	jujube	shoe-shaped

670	checks jockeys watchcase	checkstones jokes	checkstrap shakes	cheeks showcase	chicks Ajax	jackass hedgehogs
671	checked gigot sheikdom shoe-shop	checkout jackdaw shocked showshop	chickadee jacket adjective	Chiquito jagged eject	chickweed shakedown Washington	choked shake-out shoe-shaped
672	cheekiness shaken	checkin shake-hand	chicken ashcan	chicanery	gigantic	jackknife
673	chagoma shaggymane	checkmate	Chickamauga	geochemist	jackhammer	jigamaree
674	chagrin checkwork jaywalker witchcraft	chicory choker joker sugar	checker jaguar geography	checkrein jigger age-group	checkroom jogger hitchhiker	checkwriter jayhawker shaker
675	chagul chuckle jocular shekel	checkless gigolo joggle shingle	checkline jackal juggle washcloth	checklist Jekyll jugular wishing-well	chicle jiggle jungle	chocolate jingle shackle
676	checkage hootchy-kootchy	chokecherry	Chukchi	jackshaft	jigjog	ejection
677	checkhook joking	checking shaking	check-key shocking	Chicago ashcake	chugging jacking	jogging hijacking
678	checkoff jackfruit	check-over jugful	check-weave shakefork	chock-full shake-off	choke-full shake-wave	jackfish shockwave
679	cheekbone check-up shakeup	cheekpiece chick-pea	checkback chockablock	checkbite Jacob	checkbook Jacobin	checkpoint shakeproof

680	chafes jives	chauffeuse shaves	chefs sheaves	chiefs shoves	chives watch-face	geophysics watch-officer
681	chafed shavetail	chiefdom shift	chieftain shoved	cheviot Java-tea	shaft achieved	shaved
682	chaffinch shaven	chiffon ash-oven	chauvinist washfountain	chavender	Japanese	juvenile
683	chief-mate	sheaveman	show-fame	achievement		
684	chafer shaver witch-fire	chaffer shivaree whichever	chaffron shiver Jefferson	chauffeur achiever	chevron ashiver	shofar watch-fire
685	chevalier joyful shuffle	chiefless shaveling ashfall	chiefly sheaflike age-fellow	chivalry shoeflower wishful	javelin shoofly	jovial shovel
686	chief-justice-ship geophagy	chiffchaff	chivage	jewfish	shavish	she-fish
687	chafing jiving	chaffing showfolk	chaffcutter achieving	shaving	shovegroat	shoving
688	chaff-flower	chief-of	shave-off	shove-off		
689	chaffable	chavibetol	achievable	shove-up	watch-fob	

690	chaps gypsy shops	chapstick gypsum showbiz	chips jabs showpiece	chops jobs	chopsuey gyps	chophouse ships
691	chapter ashpit	chopped hashpot	gibbet hotchpot	shipped Egypt	shopped Jupiter	showboat
692	cheapen Japan ashpan	chip-in jawbone hash-pan	Chippendale shabbiness watchband	Chopin sheepnose wishbone	chubbiness sheepnut	chupon shipowner
693	chapman shipment	chapwoman shipmaster	chipmunk shipmate	sheepman shopman	sheepmaster hatch-beam	sheepmint
694	chaparral gypper jeopardize shipyard	chaperon jabber shipper hatch-bar	cheaper jabberwocky shopper washboard	chipper jobber shepherd switchboard	chopper jawbreaker shipwreck	gibber jabiru shipwright
695	chapel shapely ash-blond	chaplain shoeblack washable	Chablis shoebill sociable	giblets showbill	jobless shibboleth	jubilee shoplifter
696	chippage sheepshearer	chop-cherry sheepwash	chop-chop shipshape	jib-o-jib hodgepodge	she-beech Egyptian	sheepish
697	chapping shipping	chipping shoepack	chopping shopping	jabbing shopkeeper	shaping shebang	sheepgate hedgepig
698	chapfallen sheepfoot	chop-off shopful	shapeful	sheepfaced	shipfitter	sheepfold
699	chapbook sheep-pod	chip-blower shipboard	chip-proof shipbuilder	jibboom hushpuppy	shapable	shape-up

700	cases gashouse exhaust	causes kisses exist	cusses axis ecosystem	gases access success	gazes excess	guesses excise
701	cassette custard guest august Occident	cast custom gust ecstasy oxidize	caustic custody gusto excitement	cost gastronome quest exit	costume gazette accident extend	coast ghost acoustics extra
702	casino cuisine acquiescence	cosine gesundheit eccentric	coziness goosander oxen	cousin gooseneck waxen	caisson keeshond	cozen accent
703	casement kismet egoism	chasm axiom quasi-medical	cosmos axman	gasometer exam	gizmo example	keysmith exempt
704	causerie gizzard exhort	casserole guesswork exorbitant	gasser Kaiser waxer	gasworks accuser	gazer exercise	geyser exert
705	cas-elaw gazelle exalt	caseless guzzle exhilarate	castle quasi-legislative exile	causal quisling excel	gaslight axle exhale	gasoline auxiliary
706	caseation exchange	gasogene exchequer	quasi-judicial exigent	quiz-show oxygen	accusation	acquisition
707	cascade gasket exclaim	casing goose-egg exclude	cask kiosk excuse	cassock kissing execute	cossack exact excursion	casket excavate exquisite
708	cohesive gooseflesh	case-phrase kiss-off	gas-fired oxfly	gasiform oxford	gasify quasi-official	goosefoot
709	casaba gazebo except expire	Casbah gooseberry exhibit explain	cup gospel expand explore	cupid gossip expect export	cupidor hocuspocus expend express	gasp accept experience exuberant



710	cats co-eds quits	catsup codicil	catastrophe egotism	coats goddess	caddies godson	codes kites
711	cadet godhead acquitted	cathead guttled hog-tied	cathode quietude	cathedral quotidian	cutout quoted	coded acted
712	cadence giddiness kidney	catnap good-natured kitten	catnip goodness aquatint	codeine guidance acquittance	cotton guidon quietness	Gideon kidnap wickedness
713	catamaran Gotham	catamenia academy	catamount hecatomb	gateman	godmother	good-humored
714	cataract cutter quadrant squadron	catarrh gather quadruped skater	catering guitar actor	caterpillar gutter actress	coder kidder equator	cotter quitter scatter
715	catalog cuddle kettle	catholic cutlery acquittal	cattle cutlet schedule	caudle godly Scotland	coddle goodly scuttle	cotillion goodwill
716	cattish kiddy-show	cottage quotation	godchild	good-show	go-dutch	kaddish
717	catcall cuticle kittiwake skating	catacomb cutting acting	catgut gatecrasher aquatic	catechism goody-goody hectic	coeducational Gothic octagon	coating kidding walkie-talkie
718	cadaver get-off scot-free	catafalque go-devil	catfish godfather	codfish khedive	cutoff active	gadfly octave
719	catapult cutup equitable	catbird getup October	catboat giddap octopus	catbrier guidebook	cutback good-bye	cutiepie Good-Hope

720	cancel concentration consist consume agonize	cancer consent console counsel Kiwanis	coincidence consequence conspire gunhouse	conceal conserve constable gainsay	concede consider constitution gunnysack	conceit consign consul queens
721	candid condition continue country quantity	candle conductor contract gander quaint	candy contact contribute gauntlet account	cant content count keynoter acquaint	canter contest counter kind	condense context county quandary
722	canine gunhand	cannon Queen-Anne	canon quinine	canyon	conundrum	ganoin
723	gunman kinema	gunmetal konimeter	agnomen	economy	equanimity	ignominy
724	canary goner	canard gunner	caner gainer	cannery ignoramus	coiner skinner	coowner
725	canal keenly	gunlayer queenly	gunline acknowledge	gunlock hangnail	gunwale signal	kennel
726	coinage conjurer kinship	coinsurer conscience quench	concha conscientious signature	conjecture conscious	conjugal gunshot	conjunctive gun-shy
727	cannikin conk conquest kink	conclave concrete congratulate	conclude concur cunning	concoct congress eggnog	concussion connect hakenkreuz	concord conquer iconoclast
728	canvas confiscate convention connive	confection conflict convert gainful	confederate conform convey gonfalon	confer confuse convict gunfight	confine convalesce convince gunfire	confirm convenient convoy queenfish
729	canape gunpoint	cannibal gunpowder	canopy queenbee	connubial ignoble	gunboat	gunplay

730	cameos games	chemist gums	comestible	combs	commas	commissary
731	comedian commodity accommodation	comet commodore	commit commuter	comity gamete	committee gamut	commode hook-method
732	commander communist keyman	commence communicate kimono	comment community acumen	common cowman augment	commons cumin	commune gamin
733	Camembert	commemorate	co-member	chamomile	Agamemnon	echomimia
734	camera gamma-ray	comer aquamarine	commerce	commercial	comrade	cummerbund
735	camel comely accumulate	camellia cumulative	Camelot cumulus	camlet gamely	calmly gimlet	chamelion kiimmel
736	camshaft gumshoe	commeasure	commission	commissure	commotion	cumshaw
737	chemical gimmick	coamings gumming	combing kamikaze	comic kumquat	coming kymograph	gaming
738	camphor comfort	camphene gumfield	camphire gumflower	camouflage keymove	come-off	comfit
739	camp company competence comply gamble	campus compare compete component gambit	combat compass complain composer gambol	combine compassion complete compress gumbo	combo compel complex compromise	compact compensate compliment computer

740	caress craze crucifix Christian garrison Greece	coarse crease cruise Christmas grace grocer	correspond crest crust chrysanthemum grasp gross	corsage crass crystal charisma grass accuracy	corset crisis curious chorus graze across	course cross curse garcon grease Aquarius
741	carat cord cradle crowd curtain grade growth keyword yogurt	card cordial crate crude curtsy grate grid quart	cardinal corridor crater curate chord gratify grit quarter	carrot courtesy create curd garden gratis guard accord	cart court credit curt garter great karate accurate	cartoon coward critic curtail gird greet krater egret
742	careen corner crank crooner grand grin green	carnage cornet crayon cranberry granite grind kernel	carnation cornice crony garnet grant ground ocarina	carnival corny crown garnish granny grown quarantine	chronic coronation currant grain greenhorn guarantee hanger-on	corn crane current granary greyhound groan
743	Carmen crime grammar gourmet acrimony	chromium crimson grampus gourmand aquarium	cram crumb grim gremlin agreement	cramp crumble grime Karma sacrament	cream garment groom kermis scream	cremate gram grumble Kremlin skirmish
744	carara coherer agrarian	career corer	careworn crier	cariri curare	carrier grower	courier Gruyere

745	carryall cruel girl aquarelle	careless curl gorilla eggroll	carol cure-all grill squirrel	coral chorale growl scarlet	corral garland gruel	crawl garlic quarrel
746	carriage crouch gracious	carwash crush gurge	courage crutch grudge	crash garage kirsch	cache gorge aggression	creature gorgeous accretion
747	carcass crack cricket crook grog	cargo crackle croak croquet gherkin	caricature crag crock co-worker aggregate	character creak crocket curriculum segregate	cork creek crocodile gargle	correct crick crocus Greek
748	carafe craft graft grief scarf	caravan cravat graffiti groove	careful crave graph grove	carryover crevice grave gruff	carve curfew gravel aggravate	corvette curve gravy sacrifice
749	carabao carpet corroborate crop garbage grub	carbide carry-back crab croup grab	carbine corporal crepe curable grape	carbon corporation creep curb grapple	carboy corpse crib chiropodist grip	carp corpulent cripple chiropractor group

750	calls close glass	calcium closet glaze	callous cluster glissade	clasp colossus gloss	class cholesterol equalize	clause gallows oculist
751	cauldron cold gilt gloat killed escalator	clad collide glad glut kilowatt	cleat colitis glade gold quilt	clod colt glide guild equality	cloth cult glitter guilt occult	cloud geld Goliath kilt wiglet
752	calendar clinch colon glance esculent	call-in clinic cologne gland	clandestine clink colony glean	clean clown coolness glen	clench colin gallant kiln	client colleen gallon ugliness
753	calamity clemency culminate gloom	calumniate climate glamour glum	claim climb gleam acclaim	clammy clump glimmer acclimate	clamor clumsy glimpse kilometer	clamp column gloom schoolmaster
754	caller clarion cooler killer scholar	calorie clear galore Kilroy	chlorite clergy gallery eclair	claret clerk glare heckler	clarify collar glory ocular	clarinet color glowworm ogler
755	Galilean guileless	Galilee keelhaul	clawless echolalia	coalhole ukulele	coaloil uglily	glow-lamp
756	clash coolish killjoy	clutch galosh klatch	collage Gaulish ecology	collation glacier English	college goulash	collision keelage
757	calculator cling collect kilogram	calico cloak colloquy kulak	calling clock cowlick aqualung	clang clog Gaelic	claque colic galling	click colleague goalkeeper
758	cauliflower culvert killifish	clavate clove qualify	cleave gallivant oakleaf	cleft glove skillful	clever golf	cliff gulf
759	calabash club glib gulp eucalyptus	caliber coalpit glob kelp	calliope collaborator gallbladder kelpie	calaboose collapse globe kleptomaniac	calypso culpable goalpost eclipse	clip gallop gullible equilibrium

760	cages gashes	caches gauges	catches gouges	cautious gushes	coaches gauchos	couches sagacious
761	cached gadget	cached gashed	caged gushed	coached actuate	couched	cogitate
762	cash-in auction	catch-on equation	caution occasion	cushion hog-chain	kitchen section	action
763	cashmere	catchman	catchment	coachman	accouchement	Scotchman
764	cashier gasher	catcher gouger	catchword gusher	cochairman kosher	cojuror actuary	gauger hung-jury
765	cageling cudgel	cajole actual	casual eggshell	catchall	catch-letter	catchlight
766	cachucha	cage-shaped	co-judge			
767	caoutchouc gashing	cashing gushing	catching hogchoker	coaching	gauging	gouging
768	cageful	catchfly	catchphrase	cochief		
769	cashbook ketchup	cashboy key-job	cashbox	catchpenny	catchpole	catch-up

770	cakes gags quacks	caucus gangster quickset	coax kicks quickstep	coexist kings	cox quicksand	cooks quicksilver
771	cockatoo cockeyed kingdom	cocotte cooked aquacade	cocowood cookout quick-tempered	cactus coquette quick-witted	cocktail gaycat	cockade go-getter
772	cocaine Cockaigne cognomen	cocona cockney hog-cane	coconut cow-cane	cockiness kuchen	cocoon quickness	cognate cognizance
773	cocomat kingmaker	cogman quagmire	cuckoo-meat hockey-game	cucumber	gingham	kakemono
774	caulker cokery Quaker	cockerel cookery quicker	cockhorse cougar	cockroach gangrene	cocorico go-cart	cograil kicker
775	cackle coequal googol	coagulate coggle kingly	cockle cogwheel quicklime	cocklaird gangland aquaculture	cocklight giggle	cockalorum goggle
776	cockcnafer quackish	cockshut	cockshy	cocksure	coction	cowcatcher
777	caulking kicking	cooking HongKong	cogging quaking	gagging	gawking	go-go-girl
778	cacophony kingfish	cock-feathered	cockfight	cow-calf	cuckooflower	kickoff
779	co-captain cocobolo kickup	cockboat cocopan kakapo	cockpaddle cookbook kingpin	cockpit cuckoo-bee kookaburra	cockup gangplank eggcup	cock-a-hoop kickback



780	cafes coves	calves coveys	cavascopes cuffs	caves gaffs	coffeehouse goofs	coifs kvass
781	caftan coughweed	cavate covet	cavatina gavotte	caveat gift	cavity goofed	coffeeweed aquavit
782	caffeine given	coven give-in	cavendish goofiness	cave-in	coffin	covenant
783	caveman	cavum	coffee-maker			
784	cavern cougher Kafir	caviar gaffer quaver	coiffure giver quiver	coffer gopher hangover	cover goofer	covert governor
785	cavalcade coffeeleaf scaffold	cavalier coeval scuffle	cavalla coffle	cavalry gavel	cavil equivalent	cafe-au-lait wakeful
786	coefficient	hagfish	hogfish	gavage		
787	coughing giving	cavaquinho kaffeeklatsch	caving kavika	cofactors quaffing	goofing equivocal	gaffing
788	coffee-flavored	give-off	goof-off	qui-vive		
789	coffeeberry	coffeebush	coffee-pot	cough-up	give-up	goofball

790	cabs capstone keepsake	caboose capsule hiccups	capacity copious	capes copies	capsize cowboys	capstan gaps
791	capital cop-out	capitol cupid	capitulate kept	captain equipped	captivate sickbed	copied
792	cabana cow-pony occupant	cabin cowpuncher hogpen	cabinet Cuban	capon keypunch	coupon gibbon	cow-pen gaboon
793	cabman	capmint	capomo	equipment	kaboom	cubmaster
794	caper copyreader keyboard	caprice copyright kipper	cooper cooper aquapura	cooperate gabardine skipper	copper gabber	copra keeper
795	cabal cobblestone cubbyhole aquaplane	cable cobalt cueball quibble	capelet copilot cupel	capelin couple gable	Capella copula goblet	cobbler cowbell goblin
796	cabbage capture	cabochon capuchin	capacious kibosh	Cape-ash equipage	caption occupation	captious
797	capcase kapok scapegoat	caping keeping walkback	copycat kopeck	copying hockeypuck	cubic hogback	cupcake hokey-pokey
798	Cape-ivy gabfest	cap-flash	capful	cupful	keep-off	cubiform
799	capable cubeb	cap-a-pie cupbearer	capybara kabob	cobweb keep-up	copybook key-pipe	copyboy

800	faces vases off-season	face-saving vices	fezzes vicissitude	fusses voices	phases half-size	physicist offices
801	facade feast vast avocet	facet festival vest eavesdropper	facedown festoon vestibule heavyset	fast fiesta vestige offset	faucet fist vestry offside	Faust fusty visit offstage
802	face-nail physiognomy off-center	fascinate vasoneurosis waveson	fasten vicenary	fussiness vicinity	fuzziness V-sign	pheasant aficionado
803	facemaking Ophism	faceman	vasomotion	vasomotor	vice-master	effacement
804	facer visor	facework vizier	fossorial officer	fusser	vasoreflex	viceroys
805	faceless fusillade vessel	face-lift fuselage viceless	face-wall foozie voiceless	facility vacillate half-slip	fizzle vaseline half-sole	fossil vassal officeholder
806	facetious	physician	vice-chairman	vice-chamberlain	vice-chancellor	visage
807	facing fussing vice-god	fiasco fuzzing vice-governor	fiscal physic vice-king	fizzing physique effacing	fuscous vesicle	fusing viceconsul
808	face-off voiceful	phosphor effusive	vis-a-vis evasive	visive halfcivilized	Vesuvian	vociferous
809	facepiece vesper	faceplate vice-president	faceup visible	feasible office-boy	fusible offspring	fussbudget

810	fatso footsore votes	fates footstep	feats footstool	feuds photostat	fight vats	fetus vets
811	faded vedette off-duty	fade-out voted	fated phototube	fetid half-tide	fitted half-witted	fuddyduddy heavy-duty
812	fade-in avoidance	fatten evidence	fitness halftone	footnote offtune	photonegative ophidian	photoengraving softness
813	fathom vitamin	fat-man half-dime	fitment halftime	footman offtime	footmark	photomap
814	father fetter footwork aviator	fatter fitter veteran evader	feather fighter veterinarian heavy-water	fedora fodder vetoer	feeder footrest voter	federal footwear after
815	fatal foothill fuddle	fee-tail foothold futile	fettle footlights vital	feudal footlocker vittles	fiddle footloose photoelectric	fidelity footwall half-dollar
816	fattish food-show	fat-chewing photogenic	fat-choy wattage	fetish	fiduciary	footage
817	fading footing	fatigue photograph	feeding voting	feuding vodka	fighting voiding	fitting evading
818	fateful photoflood	faithful photo-offset	fitful vaudeville	footfall votive	photofinishing affidavit	photoflash
819	fatback footpace	fed-up footpath	feedback footprint	football avoidable	footbridge	footpad

820	fancy vainness evinced	fence veins heaviness	fiance vines hyphenize	finesse Venus offense	fines venison waviness	fins venous
821	faint find fountain vaunt affinity	fanatic fond fund vend event	fantastic fondu phantom vendetta have-not	fantail found phonetic vent hyphenated	fend foundation vanity vindicate offend	fiend foundry vantage vintage offhand
822	faineant evenhanded	fanion venenate	Fenian	finance	funniness	phoniness
823	funambulist ovenman	funnyman halfnumb	phenomenon	phoneme	venom	euphonium
824	fawner vineyard	finery evener	funeral heavenward	vanward	veneer	venerable
825	fanlight vanilla	final vainly	finely vinyl	finial heavenly	funnel	phenol
826	finch V-engine	finish avenge	Finnish evangel	vanish eventual	Venetian	vengeance
827	fawning Phoenix avionics	feigning phonic avuncular	finagle phonograph V-neck	finicky vanguard evening	fink vanquish euphonic	funicular vinegar
828	fanfare	fun-filled	viniferous	half-inferior	half-nephew	evenfall
829	fanback oven-baked	finable ovenbird	finback	phenobarbital	evenup	heaven-born

830	fames fumes	fameuse fumous	famous vamoose	famose vomicine	femcee euphemism	foams half-mast
831	famed fumid	foamed vomit	fomites wavemeter	fumatorium half-made	fumed	fumet
832	famine vimana	feminine effeminate	foaminess half-minded	foeman half-monitor	foment half-moon	vehement if-money
833	foam-maker	off-moment	half-memorized			
834	femoral vomer	foamier Ave	femur Maria	foumart ephemeral	fumarole halfmarrow	fumer wavemark
835	family foamlike	fameless fumily	familiar fumulus	famulus half-mile	female	foamless
836	famish	fumagillin	fumagine	fumish	halfmeasure	
837	faming off-mike	femic wave-mechanical	fimicolous	foaming	fumigate	fuming
838	fameflower	fameful	foamflower	save-move	vimful	
839	fimble vimpa	fumble Phomopsis	fimbriate half-implied	vamp	vampire	vambrace

840	farce forsake four-star phrase avarice	fierce forswear forsythia various averse	firehouse freeze furious varsity aphorism	first frost furze veracity aviarist	force foursome frustrate verse overseas	forest foresee Pharisee affairs
841	farthing forte fraud froth vertebra effort overturn	ferret fortify freedom fruit verdict everything	fertile fortress freight further vertigo overdo	firth fourteen fret furtive afford overdue	ford forty Friday fjord afraid overtake	fort fraternal fright variety avert overthrow
842	farina forehand frown effront	fairness France furnace everyone	fern franchise furnish overnight	foreign frantic variance	forename friend varnish	forenoon front veranda
843	farm foreman freemason affirm	ferment former from evermore	fireman formica pharmacy	firm formula vermicelli	form forum vermin	formal frame vermouth
844	farrier forward everywhere sufferer	farer freer overhear	firearm friar over-here	fireworks fryer overwork	forearm furor offerer	forerunner furrier wayfarer
845	fairly foreleg freeloader furlough overwhelm	farewell forlorn freewheeler everlasting virile	firelock frail frill overall	firewall Fraulein frolic overland	ferrule freelancer furl overlay	forehand free-living furlong overlook
846	ferocious fourragere veracious avaricious	forage fragile verge average	forge fresh version aversion	forejudge frigid virgin overcharge	foreshadow frosh virtue overshoe	foreshorten variation voracious
847	farrago fork freckle frug overcoat	firecracker fracas frequent frugal overcome	firing fragrance friction virago overgrow	forego fraction frigate evergreen overkill	forget fragment frock offering	forgive freak frog overact
848	farfetched forefinger forever overflow	far-flung forefoot free-for-all overfreight	far-off forfeit frivolity overview	fervor forfend verify	foreface forehoof verve	forefather forefront effervescent
849	fireball fireplug freeborn overpower	firebox firepower four-poster overburden	fireboat fireproof variable	firebrand forbear verb	firebug forbid everybody	fireplace freebooter overpay

850	fallacy fogies	FALSE philosophy	felicitate valise	fail-safe velocity	fleece avulse	fleas civilize
851	fallout filth float fold violet	falter flat flood philodendron	fault flatter flotsam philatelist	felt fleet fluid valet	field flight flute valid	filter flitter flutter vault
852	feline flint philanderer violence	felon flaunt philanthropist violin	fall-in flounce valence volunteer	flank fluent valentine vulnerable	flannel flounder valiant avalanche	flinch fullness villain
853	fellowman flamboyant folium velum	filament flamenco fulham	film flamingo fulminate	flam flimsy vellum	flame flume velometer	flambeau flummery volume
854	failure florin fuller volar	flair floor phalarope	flare flour philharmonic	filler flower valor	flirt flurry velour	flier follower valerian
855	fallal fuel-oil	filial full-length	flail philologist	flawless valueless	flyleaf	flywheel
856	filch fletch village effulgence	flash flowage violation evolution	flesh fly-ash volition ovalshaped	flush foliage vulture	fellowship foolish affiliation	fledgling valuation avulsion
857	falcon flag flog fulcrum havelock	fallguy flake flock phlegmatic Ivy-League	falling flax fluke phlox	felucca flex flying volcano	filigree flick follicle vulgar	filing fling following afflict
858	fallfish flivver valve half-life	falloff fluvial velvet ivy-leaf	filefish flyover vilify	file-off fluff vulva	flavin fulfill effluvium	flavor fulvous evolve
859	fallible fillip foul-up volplane	flab filibuster fullback voluptuous	flap Filipino full-blooded available	flip flyboy full-blown	flop flypaper valuable	flub followup vulnerable



860	fascist voyages	fatuous vichyssoise	fishes effigies	fish-house officious	vicious savages	vouchsafe
861	fidget fitchet half-sheet	fished fugitive half-shot	fish-day vegetable officiate	fishtail vegetarian offshoot	fishweed vitiate	fishwood vouched
862	fagine Vishnu oafishness	fashion vision officiant	fission aviation offishness	fishiness efficient ovation	fishnet effusion sufficient	fusion evasion
863	fishman	fish-maw	fishmonger	fishmouth	avouchment	
864	feature future savagery	fisher voucher	fishweir voyager	fishworm voyageur	fissure officiary	fudger offshore
865	facial fishwell halfshell	fishhold fudgewheel official	fishily vagile	fishline vetchling	fishoil vigil	fishowl visual
866	fish-joint	vitiation	voyage-charter	fasciation		
867	fetching vouching	fishgig voyaging	fishhawk half-jug	fishhook	fishing	fetching
868	fishfall half-shaved	fish-farming	fishify	fish-flour	fishwife	fish-finder
869	fetch-up fish-bone off-job	fishable fishpond wave-shape	fish-bellied fishpound	fish-blooded fishplate	fishbowl fishy-back	fishberry vouchsafe

870	facsimile fogs vex	fakes folks efficacy	fix fox evokes	figs fucose half-caste	focsle focus offcast	focus vaccine
871	fact fictitious vocative wave-cut	factory fogeater affect	factotum folktale avocado	faggot vacate effect	fagott victim evacuate	fecket victor offcut
872	fecund viscount	fogginess half-cone	afghan safe-conduct	vacant	vagueness	vicuna
873	fagmaster off-camera	figment off-campus	focometer phocomelia	folkmoor	vacuum	offcome
874	faker foggara vicar safeguard	fakir fogger vigor	fiacre foghorn evoker	ficaria folkright half	figure vagrant acre	figwort vaquero safecracker
875	fackeltanz fogle vaguely off-color	faculty fogless vehicle	fecal folkland vocal	feckless folklore aviculture	fickle fugal half-eagle	focal fugleman if-clause
876	faction fogyish avocation	factual folkish efficacious	feature fugacious eviction	fiction vacation	figshell vaguish	foggage vocation
877	fagging evoking	faking havocking	fogging heavy-going	folkcraft offgoing	Viking	half-cock
878	fake-off	feckful	fogfruit	folkfest	halfcovered	ivy-covered
879	fogbank evocable	fogbow half-cap	fogbound huffcap	vagabond safekeeping	vocable	vocabulary

880	fauvism frvestones half-faced	fives fiefs	fivesome fifes	fivesome vavasor	five-spot vivacity	five-star vivisection
881	fifth half-fed	fifty heavy-footed	fifteen hoof-foot	fiefdom	five-day	vivid
882	favonian avifauna	viewfinder	vivente	vivandier	ivy-vine	Vivien
883	five-man	five-minute	feoffment	half-feminine	vivamente	
884	favor fiferail	favorite five-year	fever foofaraw	feoffor viverrine	fifer half-fare	five half-evergreen
885	faveolus half-oval	favilla half-volley	five-leaf half-vowel	fiveling off-flavor	foveal V-value	half-full
886	fifeshire	five-shooter	foveation	vivacious		
887	fifing	five-corners	five-corns	half-vacant	ophiophagous	
888	faviform foveiform	fee-faw-fum vivificate	five-figure vivify	fivefold	five-finger	five-footer
889	fife-player viviparous	five-piece	fivepins	five-ply	fivepence	five-percenter

890	fibs fubsy	fobs phobias	fibster VIPs	fops ovipositor	phoebes halfpace	Phoebus wave-base
891	vapid half-boot	if-bet half-paid	fibbed hoofbeat	fobbed offbeat	fopped Phi-Beta	half-bat V-bottom
892	Fabian half-pint	viewpoint hoofbound	half-bent	half-bound	halfopen	halfpenny
893	fob-maker	half-beam	off-beam	V-bomb		
894	fabric vapor ivyberry	febrile vibrate offprint	February viper	fiber evaporate	fibber halfbreed	foppery hoofprint
895	fable viable V-belt	fabulous affable V-block	feeble half-blooded safe-pledge	fibula half-bull	fipple ivybells	foible off-balance
896	fabaceous ivy-bush	fob-chain	foppish	half-page	halfpitch	off-pitch
897	fibbing halfback phobic	fobbing half-box vapography	fopping half-pack	ephebic half-pike	halfback hoof-pick	half-baked off-peak
898	fabiform	fob-off	half-paved	half-payoff		
899	fob-pocket	half-bib	half-bob	V-bob		

900	paces poses obsess	passes basis	pauses bosses	pieces buses	Pisces apsis	possess abscess
901	abstain bastard bistro opposite pest postillion	abstemious baste boast past pistol upset	abstract beast boisterous paste piston upstairs	apostrophe beside bust pastor positive upstart	base-hit best obstacle pastry post	bast bestow obstruct peseta postiche
902	peasant bison	poison business	baseness absent	basin epicene	bassinet obeisance	bassoon obscene
903	pacemaker besmear opossum	peacemaker besmirch spasm	pessimist besom specimen	baseman bosom	basement aposematic	beseem appeasement
904	pacer buzzer upsurge	passer absorb	piecework absurd	bazaar abuser	bizarre observe	boozer opposer
905	passel absolute	pusillanimous absolve	puzzle apostle	pussywillow epsilon	baseless obsolete	basil upswell
906	passage beseech	pasture besiege	position obsession	possession abscission	posture	bee-sage
907	passkey bascule bisque upswing	passing bask boscage	pesky basket abscond	pussycat bazooka episcopal	base-court bicycle obscure	basic biscuit opposing
908	Pacific abusive	pacifier specific	passive	peaceful	piassava	pussyfoot
909	passable passe-partout possible busybody	passback pass-up baseball upsweep	passband peaceable bespatter	passbook peace-pipe besprinkle	pass-by peace-plan biceps	passport pea-soup busboy

910	patsy batsman boots	peau-de-soie bathhouse hypothesis	pedestal bathyscaphe appetizer	pedestrian beads obtest	poetess beside	pizza bodice
911	padded apathetic hypothetical	petite appetite update	pas-de-deux aptitude uptight	potato epithet up-to-date	beatitude ebbtide	bedtime habitat
912	patent python between uptown	patina badness botany	petunia badinage butane	piton baton button	potency beatnik obedient	put-on bedouin obtain
913	peatman by-time optimist	pitman abdomen September	podium apothegm speedometer	badminton epidemic	betimes epitome	bottom hebdomad
914	patriot poetry batter bidder upturn	patron pother battery bitter	patter potter bedroom bother	pattern powder betray boudoir	petroleum putter better butter	pewter bather betroth obtrusive
915	paddle potluck bodily	padlock puddle bootleg	pedal badly bottle	pitiless battle butler	poodle bedlam aptly	pothole beetle
916	patche potiche bootjack	patagium potsherd habitation	pedogenic potshot optician	petition pottage	potage potty-chair	potash beautician
917	padding petting biting abdicate	paddock pudding boating abduct	patting bathing bodega apothecary	pedicure bedding bodkin heptagon	pedigree bedeck bodyguard optical	petticoat betting boutique uptake
918	pay-TV put-off bedfast	pettifogger baitfish epitaph	pitfall batfish spiteful	pitiful batfowl	pot-aufeu beatify	potful beautiful
919	paid-up bad-boy hospitable	petit-pois batboy	potable beat-up	potbelly bedbug	potpie bedpan	put-up habitable

920	panacea pensive benzine happiness	pans pianist bonus hypnosis	pains pincers bounce	pansy pounce bunnies	pence puns buoyancy	pencil banister abeyance
921	paint penitent pound bend bonito append	panda penthouse pundit beneath bonnet appoint	pant pint band bent bound hypnotist	panther point banter beyond bounty	pendant pond bayonet bind bundle	penetrate pontoon behind bond abandon
922	panhandle pinane bunion	penance pinion open-end	peninsula puniness opinion	penknife banana opponent	pennant benign	pennon bonanza
923	panama benumb	Pan-American bonhomie	panman byname	penman eponym	penumbra open-minded	pinman openmouthed
924	panorama binary opener	peignoir binaural weaponry	penury boner	pioneer abnormal	banner habanera	beanery open-air
925	panel pianola spaniel	penal pinhole	penholder pinwheel	penniless banal	penile hobnail	penult openly
926	panache pinch banish espionage	panjandrum poncho banjo Spanish	pawnshop pongee banshee spinach	penchant punch bench	pension pungent bunch	penuche punish appanage
927	pancake pinkeye bank opening	pancreas Pinkerton banquet	panic pinko bunk	penguin pinnacle bunker	pincushion punctual abnegate	pink punk happening
928	painful pinfall benevolent	panfish pinfeather bonefish	panfried pinfire bonfire	pen-friend pinfish boniface	pianoforte pinfold bowie-knife	pinfore benefit
929	panoply pennyprick pinniped	panpipe pinball pinup	panplane pinbone bonapartist	pawnbroker pineapple bonebreaker	penny-pincher pinpoint hobnob	penny-plain pinprick open-up

930	palmist Bahamas	paymaster beams	poems bemuse	pomace bombs	pomes booms	pumice bums
931	pomade bimetal by-motive	poematic biometrics hop-o-my-thumb	pommetty bombed	beamed bomb-out	beamtrawl boomed	behemoth boomtown
932	payment bemoan hypomania	pieman bimanual	pimento bimonthly	pimiento bowman	Pomona abominable	bemman ape-man
933	palm-marten	baum-marten	boom-man			
934	palmer boomerang	Pomeranian bummer	beamer submarine	bemire	bomber	boomer
935	palm-oil boomless	pimelate boomlet	pomelo	pommel	pomologist	pummel
936	bombshell submission	boomage	beamish	pomaceous	pumiceous	bumptious
937	palming booming	pemmican boomkin	pomegranate bumkin	pumex bumming	beaming	bombing
938	palmification opium-fiend	palmful	pamphlet	pemphigus	pomfret	pomiform
939	pampas pompadour bamboozle bumper	pamper pom-pom bimbo	pimp pompon bimeby	pimpernel pump bombard	pimple Bambi bombast	pomp bamboo bumblebee



940	parasite percentage porcelain presence price purse breeze	parasol persecute porous preserve prison barrister bristle	parcel persist praise president proceed bracelet oppress	Paris person precede press process brass hobbyhorse	parson persuade precise prestige prospect brazen upper-house	perceive pierce prescription presume prosper breast
941	parade pert pretext protest barter board bridle burden operate	paradise pirate pretzel proud beard braid British aboard	pardon port pride prude berth bread broad abroad	part portrait product purity bird breath broth apart	party predict protect bard birdie breed brother apparatus	period pretense protein baritone birth bride brutal Opart
942	parent print boron brandy burn auburn	paranoid pronoun born brawn abhorrent	paranymph prune brain brink apparent	parentheses barn bran bronco apprehend	prank barren branch bronze apprentice	principle baron brand brown apron
943	paramount premier promise brim	paramour prime promote broom	preempt primitive prompt barometer	permanent primo pyramid brome	permeate primrose pyromaniac	permit prominent barmaid
944	pairer prerogative bearer	parer prewar borer	poorer prior borrower	prairie priority brewer	prayer prorated briar	prerequisite barrier uproar

945	parallel parole prelate barley burial	paralyze payroll prelude barrel burlesque	parlay pearl prologue brawl burlap	parley peerless prolong braille apparel	parliament peril prowl beer-hall whippoorwill	parlor poorly purloin broil April
946	parachute Persia prejudice barrage bridge burgeoning appreciate	parchment porch pressure biracial brioche aborigine approach	parish porridge project birch broach abortion operation	peerage portion purchase breach brochure apparition	perch preach purge breeches brooch apportion	perjury precious barge brewage brush aperture
947	park pregnant proxy barracks breakfast brook	paring prick purgatory barricade brick burglar	parquet proclaim purring bearing brig abracadabra	perk prognosis bargain brag bring abrogate	pork program bark brake briquette approximate	practice progress barkeeper break broker uppercut
948	paraffin perfidious pervious preview profile province brief	paraphernalia perforate powerful previous profit provision abbreviate	paraphrase perform prefab privacy proof provocation approve	paravane perfume preface profane prophecy purify	parvenu periphery prefer profession prove barfly	perfect pervert prevent proficiency providence brave
949	parable perpetuate problem proposal barbell approbate	parapet perplex prohibit proprietor barbecue appropriation	parboil porpoise prop purple bourbon apropos	perhaps prepare propeller purpose brob hyperbole	peripatetic probable propter barbarian burp	perpetrate probate proportion barber abrupt

950	palace plaza polestar blaze bluster hapless	pals plaster pollster blessing bolster upholstery	place please pulse bliss bluestocking hopeless	placebo plus ballast blister bylaws	placid police blaspheme blizzard bulls-eye	plasma policy blast blouse applause
951	paladin plait plight ballot blade bolt applaud	pallet plate plot behold bleed build uphold	palliative platform poultry belt bloat bulldog obliterate	pelt platinum polite bewilder blood bullet	pilot plead ballad billet blot bulletin	plaid pleat bald bladder bold ability
952	paleness plant baloney blind bowline	plain plenty beeline blink bullion	plaint plunder bland blonde by-line	plane pollen blank bluenose appliance	plank balance blanket blunt opulent	plankton balloon blend bologna upland
953	palmetto plumb blemish aplomb	palominos plumber blimp sublime	pall-mall plump bloom supplement	playmate polemic bloomers	plum polymer boloman	plume blame bolometer
954	pallor plower blower applier	peeler plural boiler supplier	pillar polar bowler	pillory puller bullring	pliers bailor bulrush	player billiards bulwark
955	palolo boll-hull	playland bullwheel	playlet	pool-hall	balalaika	blue-law
956	pillage belch blush apology	pleasure bleach bulge applejack	pledge bilge bullish oblige	plush blotch ablution whiplash	polish bludgeon abolish splash	pollution bluejay appellation
957	paling plague polyglot black bullock	pelican plaque polygon block bullying	pilgrim playground bailiwick bloke applicant	playing pluck balcony blowgun appealing	placard polecat belong bulk spelling	placate polygamy billycock bull-oak
958	paleface playful belfry bluff bullyhuff	palfrey plover belief bolivar oblivion	palaver pullover beloved boulevard uplift	pelf pulverize billfold bullfight	pelvis bayleaf bullfinch bullfrog	pilaf bailiff bluefish bull-voiced
959	pallbearer pliable bellboy bulb applepie	palpitate plop blip bluebonnet epileptic	pillbox polyp blooper bullpen	playboy pulp blowup bullpup	playpen pulpit blueberry bullwhip	plebe ballplayer bluebird bullyboy

960	pachisi pushes bushes	patches badges Apaches	peaches beaches	pitches beeches	pouches beaugeste	poaches bitches
961	peashooter bewitched upshot	pitch-dark bowshot habituate	pitchout budget	poached bushed	pushed bush-out	beachhead bush-tea
962	pageant potion apogean	passion pudginess option	patient pushiness	pidgin bechnut	pigeon biogenic	pitch-in bitchiness
963	pajamas bigeminal	pitchman bushman	pushmobile bushmaster	beachman bushhammer	beachmaster boojum	bechamel abashment
964	patchwork badger obituary	pejorative batcher	pitcher bushranger	poacher bushrope	pochard butcher	pusher abjure
965	patchouli bitchily habitual	petulance bushel	pitchhole bushland	pugilist bushleague	bachelor special	Beaujolais speechless
966	beach-shoe	pushchair	habituation			
967	patching beachcomber object	paycheck bushcraft upcheck	pishogue bushgrass upchuck	pitching bush-hook subject	pushing bushing	pushcart abject
968	pitch-faced bushveld	pitchfork by-Jove	pushful upshift	pushover	bashful	bushfighter
969	page-boy pushball bush-pea	patch-up push-button bushpig	peach-pie push-up heebie-jeebies	pishposh bishop hobby-shop	pie-shape bushberry	pitchblende bushboy

970	packs pixie because boxer	pax pox bequest abacus	PX Bacchus bogs apex	Picasso backs bogus epics	pikes bags books epoxy	pigskin bangs box
971	packet bacteria buckwheat	pact beget bugout	pagoda bequeath hepcat	picket big-idea ubiquitous	pigtail bigot aspect	pocket bucket spectator
972	pagan pignut begonia epigone	pecan bacchanal beguine hypochondria	pecuniary bacon big-name	picayune beacon bigness	pickaninny beckon bugginess	piquant begin bygone
973	pigment bigamy bookmobile	pygmy bigmouth buggyman	Pygmalion boogeyman hippocampus	bakemeat bookmaker	becalm bookmark	become book-match
974	packer pucker bigger epigram	picaroon backer biography hypocrite	picker backward bicarbonate Hippocratic	pickerel baker buck-ram	piker beggar Apocrypha	poker beaker epicure
975	peculiar backlog bogland golly	piccalilli bagel booklet apiculture	piccolo beagle buckle	pickle becloud bugle	picklock biweekly bugloss	backlash beguile by
976	package big-jaw buckjump	picture bocaccio buckshot	backwash bookish	baggage bookshelf	bakeshop bookshop	baksheesh buckish
977	peacock backache bookcase	packing background bookkeeper	pecking backing bugging	pegging begging buckwagon	picking bigwig	poking boogie-woogie
978	peccavi bagful	pickoff big-if	pigfish bogfern	backfield bugfish	backfire	back-formation
979	peekaboo backboard bookbinder buckpot	pickup backbone bugaboo buck-up	pickpocket back-pay bugbane hubcap	piggyback back-up bugbear upkeep	pigpen bagpipe bugbite	backbencher beekeeper buckplate

980	paves beefsteak	pavestone beehives	payoffs behaves	peeves obfuscate	puffs obvious	beefs
981	paved beef-tea befuddle	pavid beeftongue behaved	pivot befit abaft	puffed buffet obviate	beefeater buff-tip webfoot	beefheaded buvette
982	pavane buffoon	puffin Epiphany	puffiness hopvine	bovine	bouffant	bowfin
983	pavement	bivium				
984	paver before boyfriend	pay-for befriend buffer	poverty behavior obverse	puffer beverage	beaver biform	beefier bowfront
985	pavilion beeflower bivalve	piffle bee-fly buffalo	baffle befool bufflehead	B-flat bevel hopeful	befall bifold upflow	beefless bivalence
986	pavane	peevish	bifacial	bufagin		
987	paving bivouac	puffing buffcoat	beefcake buffing	beef-cow by-effect	behaving aboveground	bifocals
988	puff-off	puff-fish				
989	puffball buffable	puffbird buffbar	puff-up aboveboard	beefburger	beef-pie	beef-up

990	papacy PPS	papistry babies	papoose biopsy	pip-squeak bobbysoxer	poppies bobsled	puppies bypass
991	pipe-die babyhood hippopotamus	pipit baptism upbeat	pipette biped	Poppy-Day bobtail	puppet booby-trap	babbitt bypath
992	peppiriess bobbinet	pipe-in hipbone	pippin	popinjay	baboon	bobbin
993	Papiamento	pipeman	bee-balm	baby-minder		
994	paper piper	paprika popery	pauper potpourri	peeper puberty	pepper by-product	peppermint bipartisan
995	papal pipeline publisher bobolink	payable poplin pupil bubble	pebble poplar Pueblo byplay	peephole populace babble apoplexy	people popular Bible	piebald public biplane
996	pea-patch babushka	peep-show babyish	pipage baby-show	popish booby-hatch	poppy-ash	poppy-show
997	payback pipkin	paybook popcorn	pipecoline popgun	pipe-clay poppycock	pipe-key babying	piping bobcat
998	papaver poppyfish	pepful baby-faced	pipefish bobfly	pipeful bubby-flower	pop-off pupfish	popover pupiform
999	pep-up baby-boy	pipable baobab	pipe-band bebop	pipe-opener bubbybush	poppy-bee	pop-up
1000	dioceses	diseases	disuses			

## 16.2 Picture Words from John D. Cook

I added these to the master tables above. Many come from contemporary science fiction.

Adidas	Aquinas	Bilbo			
Bones	bump	cabasa	Chekhov	Chewbacca	chimp
cobra	Cupid	Darth	dashiki		
Douthat (Ross)	Dudley	Ents	floss		
Frodo	Gimli	Gollum	Gorn	Han Solo	
Harry Mudd	Icarus	Jabba (the) Hutt	jacks	Kirk	Lando
Linus	Lysol				
parrot	Pepsi	phaser	Pluto	possum	
Sauron	sawzall	sax	Scottie	Shelob	shofar
socks	Spock	sweets			
Vader	wheelbarrow				