

Babcock Dozenal Primer

Counting in Twelves for Curious Normies

by Michael Babcock - dozenalprimer.org

You already know how to count in twelves. You just don't know it yet.

You know a dozen eggs. You've likely heard of buying items by the gross. You know eleven and twelve don't follow the same rules as thirteen and fourteen. These aren't accidents — they're survivors of an older, more elegant way of counting that never quite disappeared from the English language.

This primer picks up where those survivors left off.

Why Twelves?

Twelve is a remarkably useful number. Unlike ten, which is only divisible by 1, 2, 5 and 10, twelve divides evenly by 1, 2, 3, 4, 6 and 12. That means a dozen splits cleanly into halves, thirds, quarters and sixths without a remainder. Ten can't do that.

This isn't a coincidence. Twelve shows up everywhere humans have found it useful — twelve hours, twelve months, twelve inches in a foot, twelve in a dozen, twelve musical semitones. These aren't arbitrary traditions. They're the fingerprints of a counting culture that understood something our decimal system quietly gave up.

Dozenal is simply the name for counting in duodecimal rather than decimal (base twelve versus base ten). And as you're about to see — you're already halfway there.

The Digits

Counting in twelves works exactly like counting in tens, with one difference — we need two extra digits. Decimal has ten digits: 0 through 9. Dozenal (duodecimal) needs twelve:

0 through 9 plus two more.

We call them **dek** (pronounced *deck*) and **el** (pronounced like the letter *L*).

They represent the quantities you know as ten and eleven. But in dozenal they are single digits in their own right — as fundamental to dozenal as 7 or 9 is to decimal. We write them as **X** and **E**.

Numeral	Name
0	zero
1	one
2	two
3	three
4	four
5	five
6	six
7	seven
8	eight
9	nine
X	dek
E	el
10	doh / dozen

Where decimal counts ...eight, nine, ten — dozenal counts ...eight, nine, dek, el, doh.

doh (pronounced *doe*, rhymes with *go*) is the name for twelve — the base itself. You'll also hear it called **dozen**, which you already know. Both are correct. Both are useful.

Using Your Fingers

Don't worry you can still use your fingers to count in dozenal. In fact, you can count much higher on your fingers in dozenal than in decimal. The concept is simple. You have three segments per finger with four fingers per hand. That's twelve segments on each hand.

Use your thumb to point to one segment at a time on your right hand as you count up, one, two, three, next finger, four, five, six, and so on. Use your left hand to track how many times you've counted to twelve. Once you've counted to twelve, twelve times (all your finger segments), you've counted to a gross! A gross is 100 in dozenal, or 144 in the decimal system.

Counting in Twelves for Fringe Anarchists

You've mastered the beginner step into the large numerical world of dozenal. You're ready to level up, and you don't care what society thinks about the way you count. If your numbers are ungovernable by the decimal system, then this next segment is for you.

Counting Higher

Now that we have our twelve digits, counting in dozenal follows the same logic as counting in decimal — just with a bigger set of single digit values before we roll over to the next place.

After dozen comes dozen-one, dozen-two, dozen-three and so on. But rather than saying dozen every time, dozenal can use a natural contraction — similar to how counting in tens turns three-ten into thirteen or four-ten into fourteen. In dozenal we can use **doz-** as a prefix, giving us cleaner and more transparent contractions than their decimal equivalents:

Numeral	Name
10	doh / dozen
11	dozone
12	doztwo
13	dozthree
14	dozfour
15	dozfive
16	dozsix
17	dozseven
18	dozeight

Numeral	Name
19	doznine
1X	dozdek
1E	dozel
20	twenzy

Notice that **dozthree** tells you exactly what it is — a dozen and three. Compare that to **thirteen**, a contraction so worn down by centuries of use it tells you almost nothing. In this respect dozenal counting is actually more transparent than the decimal system you grew up with.

At **twenzy** we step up to two dozen. Which brings us to our next shorthand.

The -zy Shorthand

Just as **doz-** can contract the dozen-plus-something range, dozenal has a natural shorthand for the multiples of dozen themselves — the dozens place. In decimal, *four tens* becomes *forty* and *six tens* becomes *sixty*, replacing the word tens with *-ty*. The **-zy** suffix, borrowing the "z" in dozen, can do the same work:

Numeral	Name
20	twenzy
30	thirzy
40	forzy
50	fifzy
60	sixzy
70	sevenzy
80	eightzy
90	ninezy
X0	dekzy
E0	elzy
100	gross

Again these are natural contractions rather than requirements. Saying *three dozen* and *thirzy* mean exactly the same thing. But just as nobody says *six tens* when they mean sixty, you may find the **-zy** forms come naturally with use.

At **gross** we step up to the next level entirely — a dozen dozens is one hundred in duodecimal, or one hundred and forty four in decimal. Gross as a unit of quantity is a word that has quietly survived in English for centuries, waiting for this moment.

Gross

Gross is a word you may already know — it has been used in English for centuries to mean a quantity of one hundred and forty four, typically when buying or selling items in bulk. In dozenal it earns its place as a proper number name.

In dozenal, gross is written **100** — a dozen dozens. Clean, round, elegant. Exactly the kind of number duodecimal does best.

Counting up from gross works exactly as you'd expect:

Numeral	Name
100	gross
101	gross one
102	gross two
103	gross three
10X	gross dek
10E	gross el
110	gross dozen
120	gross twenzy
130	gross thirzy
140	gross forzy
148	gross forzy eight
150	gross fifzy
1E0	gross elzy
1EE	gross elzy el

Numeral	Name
200	two gross
300	three gross
E00	el gross
EEE	el gross elzy el

Notice how **gross forzy eight** tells you exactly what it is — one gross, four dozen, and eight. No ambiguity, no irregular forms. Just the structure of the number spoken plainly. It almost sounds like a dialect from a nearby region.

At **el gross elzy el** we reach the last number before the next great step up.

Counting in Twelves for Deep Hermits of Lore

You've made it as far as you can, a rebel with a cause that counts. You're not satisfied with walking the path less trodden. You want to become one with dozenal, ascend beyond the known, become a shaman of doh, pushing deep into the dozenth dimension. Then this next segment is for you.

Grossand

A dozen gross has traditionally been called a **great gross** — a term that has existed in English almost as long as gross itself. It represents the third power of twelve, written in duodecimal (base twelve) as **1,000**, equal to one thousand seven hundred and twenty eight in decimal (base ten).

The word **grossand** draws on the same linguistic roots that gave English so many of its number words. **Gross** arrived through Old French and Italian trading culture, while the **-and** ending echoes the Germanic and Latin *grand* and *grande* — both meaning great or large. Grossand is therefore not an invented word so much as a natural contraction of *gross* and *grand* — a great gross, compressed into a single fluid term the way languages naturally compress things they use often. It sits comfortably alongside *thousand*, which is itself a Germanic compound that nobody thinks twice about.

While *great gross* is charmingly old fashioned, saying it fluidly inside a larger number gets unwieldy fast. **Grossand** keeps the heritage intact while making it comfortable to say in everyday speech — in the same spirit that **doz-** and **-zy** streamline the smaller numbers.

Numeral	Name
1,000	grossand
1,001	grossand one
1,002	grossand two
1,00X	grossand dek
1,010	grossand dozen
1,020	grossand twenzy
1,040	grossand forzy
1,048	grossand forzy eight
1,100	grossand gross
1,200	grossand two gross
1,E00	grossand el gross
2,000	two grossand
5,000	five grossand
E,000	el grossand
E,EEE	el grossand el gross and elzy el

That last number — **el grossand el gross and elzy el** — is the largest four digit dozenal number. Say it out loud. It reads like a number. Not a formula, not a code. Just a number.

Dozen Grossand and Gross Grossand

When counting past a grossand the same natural pattern continues — the familiar dozen and -zy shorthands scale up effortlessly before stepping up to the next named unit:

Numeral	Name
1,000	grossand
2,000	two grossand

Numeral	Name
3,000	three grossand
X,000	dek grossand
E,000	el grossand
10,000	dozen grossand
20,000	twenzy grossand
30,000	thirzy grossand
50,000	fifzy grossand
X0,000	dekzy grossand
100,000	gross grossand
200,000	two gross grossand
500,000	five gross grossand
E00,000	el gross grossand
EEE,EEE	el gross elzy el grossand el gross and elzy el

Notice the pattern is identical to what came before — the same dozen and gross machinery that counts within grossand now scales up to count multiples of grossand itself. No new rules to learn.

That last number — **el gross elzy el grossand el gross and elzy el** — is the largest six digit base twelve number. Compare it to its nearest base ten equivalent:

Duodecimal: el gross elzy el grossand el gross and elzy el

Decimal: nine hundred ninety nine thousand nine hundred and ninety nine

Same scale of number. Every dozenal word is doing transparent work — no irregular forms, no meaning worn smooth by centuries of use until it tells you nothing. The decimal version may sound more familiar, but use dozenal for a spell and it will sound just as ordinary to your ear.

At this point we have reached the edge of what grossand can describe. The next step up needs a new name entirely — and that is where the language makes its most elegant leap.

Mizen

A grossand of grossands. The sixth power of twelve. A number that in everyday decimal would simply be called *about three million*.

In base twelve it is written **1,000,000** and can be called a **mizen**.

Mizen follows the same linguistic family as the large number names that follow it — the **-zen** suffix is no accident. Just as **doz-** and **-zy** carry the echo of dozen, so does the **-zen** ending in all the large number names. Dozen runs through the entire system. The large number names are, at their root, an extension of the same word the whole system is built on.

Counting with mizen follows the now familiar pattern:

Numeral	Name
1,000,000	mizen
2,000,000	two mizen
10,000,000	dozen mizen
20,000,000	twenzy mizen
100,000,000	gross mizen
500,000,000	five gross mizen
E00,000,000	el gross mizen
1,000,000,000	bizen

No new rules. The same dozen, gross and grossand machinery that has carried you this far now counts multiples of mizen just as naturally.

And at **bizen** the pattern steps up again — a dozen of mizens waiting to be counted.

The Large Number Names

Every sixth power of twelve can receive a new name. The pattern is identical at every level — dozen, gross and grossand count within each tier before stepping up to the next:

Name	Numeral
mizen	1,000,000
bizen	1,000,000,000
trizen	1,000,000,000,000
quadzen	1,000,000,000,000,000
quinzen	1,000,000,000,000,000,000
sextzen	1,000,000,000,000,000,000,000
septzen	1,000,000,000,000,000,000,000,000
octzen	1,000,000,000,000,000,000,000,000,000
novzen	1,000,000,000,000,000,000,000,000,000,000
dekzen	1,000,000,000,000,000,000,000,000,000,000,000
elzen	1,000,000,000,000,000,000,000,000,000,000,000,000
dohzen	1,000,000,000,000,000,000,000,000,000,000,000,000,000

The names follow the same roots as the digits themselves — mi, bi, tri, quad, quin, sext, sept, oct, nov, dek, el, doh — capped with **-zen**, the echo of dozen that runs through the entire system. A speaker who knows the digits already knows the large number names. They just haven't met them yet.

And at **dohzen** the system completes its circle — the doventh large number name carries the name of the base itself. The whole language of dozenal counting, from the first digit to the largest named unit, is built from the same twelve roots.

Proof of Concept

Here is a large dozenal number:

1,300,020,40E

Spoken aloud:

one bizen, three gross mizen, twenzy grossand, four gross and dozel

That is not a formula. It is not a code. It does not require specialist knowledge or membership in any society.

It sounds like a number, because it is a number. Enjoy your new, improved, dozenal life.

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This system is designed for wide adoption and ease of understanding. It is compatible with existing dozenal conventions and does not seek to replace any existing proposal. It is offered as an accessible on-ramp for newcomers to dozenal counting.

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