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Meet the Human Calculator. It thinks about numbers like you do—only better.



Eatoni breathes life into the common calculating machine with an innovative word-based app.

What is the Human Calculator?

From time to time, anyone may have to work with very big or very small numbers, if only to understand world events, buy a house or plan for retirement.

The Human Calculator displays numbers using a combination of digits and words, as in everyday speech, giving it expressive power. It's where mathematics meets language. It's a calculator for the rest of us—students or non-scientists who haven't used scientific notation since high school.

To enter the number 300 million, for example, just type "3 hundred million", and to divide that by 7 billion, then type " \div 7 billion =" The result shown, 4.29 hundredths, is roughly the fraction of the world's population living in the United States. Easy.

It's also handy for common calculations. If you need to compute a tax, a tip, or a currency conversion, the Human Calculator has built-in functions that will do that for you, making it indispensable for a trip around the world or just down to your local restaurant. Exchange rates are updated daily.

The Human Calculator runs on all iOS devices, iOS version 6.0 or greater. It costs \$0.99.

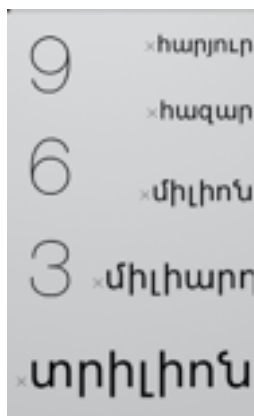
“The Human Calculator is a valuable tool for finance professionals, journalists, lawyers, high school students and anyone else who needs to make sense of big numbers.”

- Eatoni



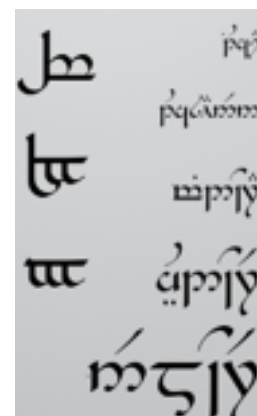
The calculator that speaks your language

Nelson Mandela said: “If you talk to a man in a language he understands, that goes to his head. If you talk to him in his language, that goes to his heart.”



Armenian

We agree, and have therefore developed dedicated versions in 162 languages. The set includes all the major international languages, of course, but also mid-sized national languages such as Armenian, all of the 11 national languages of South Africa, 12 of the national languages of India, and many small languages such as Faroese. Even cult languages such as Klingon (Qo’noS), Dothraki (Essos) and Quenya (Middle Earth) are supported. Eatoni is particularly excited to offer this product in numerous threatened or endangered languages such as Inuktitut and Breton.

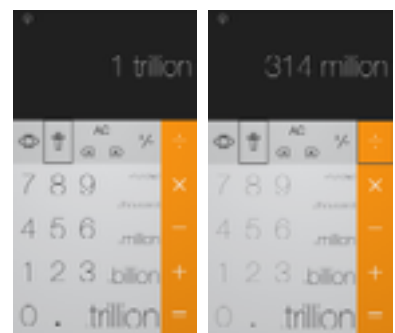


Quenya (Middle Earth)

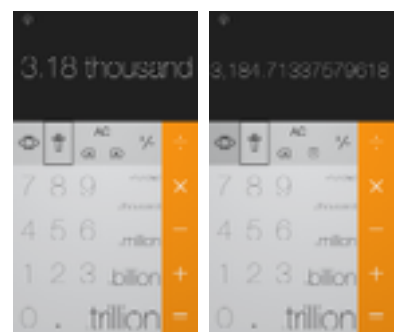
Origins

Our CEO's nephew was complaining about having to learn scientific notation in high school. "How could I ever need that in real life?" The CEO resisted. "You read in the newspaper that the federal budget is a trillion dollars. Do you understand what that means? How much is that per person in the US? How can you make informed political judgments if you can't answer simple questions like that? And how do you plan to deal with big numbers without scientific notation?" Eventually he acknowledged that the kid was right. You don't need scientific notation to deal with numbers you encounter in real life, even if real life involves terabyte hard disks, countries with billions of people and other quantities unfathomably vast. You do need something, though. You need what became the Human Calculator.

At the same time, Eatoni was continuing to work on its predictive text keyboards for the world's languages. Having developed a Twitter client and an email client for African languages written in the N'ko script, Eatoni polled its N'ko users to find out what app they should make next. The most popular response: our students need a calculator in N'ko script. So the English-language version of the Human Calculator was created, followed by Human Calculator: N'ko, and then many others.



1 trillion ÷ 314 million =



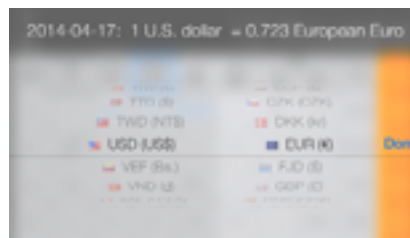
human non-human

Who needs the Human Calculator?

- Anyone who regularly or even occasionally computes with big numbers (anything bigger than a thousand). Human mode is ideal for everyday ball-park computation. If higher precision is needed, it is easy to switch out of human mode to standard calculator mode.
- Finance professionals, such as venture capitalists and investment bankers, and anyone—lawyers, for example—who works with them. This is all about working with big numbers, approximately, quickly and with insight.
- Journalists, especially those who write about science, business, or government. The Human Calculator provides “copy ready” formatting for numbers discussed in their articles. Anyone

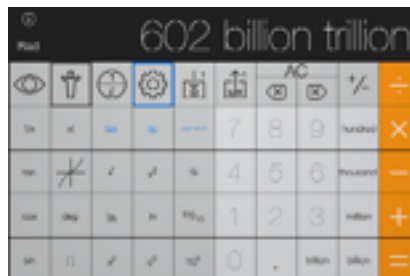
writing for the general public, whose remit occasionally involves big numbers, including scientists.

- Travelers, thanks to the built in tax, tip, and currency conversion functions.



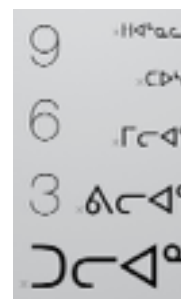
Currency conversion

- Students learning about scientific notation. The Human Calculator features a “peek” function which lets users quickly see what a number in scientific notation looks like expressed in words, or vice versa. This helps students develop a feel for how scientific notation operates.



Avagadro's Number

- Speakers of minority, threatened or endangered languages that are typically ignored by large technology providers. For the first time, these people can use a calculator in the language that is a source of pride and personal identity.



Inuktitut

Sample calculations

A house is for sale for \$500,000. It's 1,700 square feet. How much is it per square foot?

Type: 5, hundred, thousand, ÷, 1, 7, hundred =. Answer: \$294/sq ft.

Everybody knows that a googol is 1 followed by a hundred zeros, but how much is that really?

In landscape orientation, type hundred, 10^x. In human mode that shows as 10 thousand trillion⁸ (10 thousand trillion trillion trillion trillion trillion trillion trillion).

The richest man in the world is worth 72 billion dollars. If everybody else also had that much money, what would be the total wealth of the planet, in cents?



72 hundred billion x 7 billion = 50.4 billion trillion cents. That's about 5 million-trillion-trillion-trillion-trillion-trillion-trillion-trillionths of a googol.

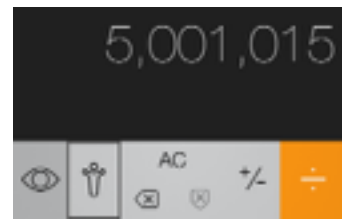
What's that in scientific notation?

Hold down the peek button. 50.4 billion trillion is 5.04×10^{22} .

FAQs

But how do I enter something like 5 million 1 thousand fifteen?

The human mode is primarily for working with “ball park” numbers; it's not “check-writing mode”. Unless you're a scientist or an engineer, or writing a check for \$5,001,015, you don't need all those figures to get the answer you want. It's rare to know a big number that precisely; to the average human, that's 5 million, give or take. If you do need all those digits, then either a) exit human mode by holding down “peek” (the eyeball button) or tapping the human mode button (the little man) and then type your number in regular calculator mode, or b) type 5 million + 1 thousand + 15.



peek button held down

How about just a 4-digit number like 79.95?

Hold down peek to enter the 5, or for all of 79.95 if you prefer, then release peek. It might help you to think of human mode as an auto-formatter in a word processor, or the automatic shift on a car. Most of the time you can stay in automatic and it will do the right thing. In this case, the right thing is to format the number for easy understanding. That's what human mode does for you. Occasionally you'll want more manual control, if only for a moment, and you can get that immediately and easily.

The shortcuts for entering thousand, million, etc are great, but I just want to see all the digits in the display, not the words. How do I do that?

Turn off human mode (using the little man key). You can still use the thousand, million, ... keys (“transdigit keys”). You might ease into the human way of thinking by staying in non-human mode at first—just peeking at human format from time to time—until you find that usually it really is the best thing.

You say you have 162 languages available, but I'm not able to find all the languages I want on the app store. What gives?

To be permitted distribution via the app store of very many individual apps, we very carefully targeted each language to the region where it is most likely to be spoken. To give users a good out-of-the-box experience, with no configuration needed, we felt that it was essential to make it one language per app. The upshot is that they are all out there, somewhere, but maybe not in your local app store. See below for a list linking each language to at least one regional app store.

Isn't supporting a new language just a matter of translating the labels on some of the keys?



Japanese

Languages differ not only by having different names for numbers, but using different logic for expressing numbers; that is, different ways of combining number words together to form new numbers, different ways of combining words with digits, and so on. As a small example, where in English we count big numbers in increments of a thousand (a million is a thousand thousand, a billion is a thousand thousand thousand), some Asian languages count in increments of 10,000. Indic languages express big numbers in multiples of 100,000 and 10,000,000. Making the Human Calculator involved a large chunk of linguistic research to catalog this diversity. Especially for some small, obscure languages, even the experts aren't sure on the details. We're not certain that everything is perfect and expect to hear from users where we got things wrong.

About Eatoni

Eatoni has been designing predictive text software and keyboards since 1998. Its industrial clients have included cordless and cellular phone manufacturers such as Siemens, Panasonic, and Iridium. In recent years it has been focusing on apps for iOS, including its Triage® app for email. With the Human Calculator, Eatoni turns its attention to keyboards for number rather than text entry and finds, yet again, that language plays a critical role in speed, utility and ease of use.



Media

Eatoni's Human Calculator has a [Facebook page](#). There exists a Facebook users group for Eatoni's [N'ko products](#). [Eatoni's website](#). Images related to this document can be downloaded from [Dropbox](#).

Acholi (Lwo) [Uganda](#)
Adyghe (Адыгэбзэ) [Russia](#) [Turkey](#)
Afrikaans (Afrikaans) [Namibia](#) [South Africa](#)
Albanian (Shqip) [Albania](#) [Macedonia](#), [The Former Yugoslav Republic Of](#)
Amharic (አማርኛ) [Israel](#)
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Armenian (Հայերեն) [Armenia](#)
Aymara (Aymar) [Argentina](#) [Bolivia](#) [Peru](#)
Azerbaijani (Azərbaycan) [Azerbaijan](#)
Balinese [Indonesia](#)
Basque (Euskara) [France](#) [Spain](#)
Belorussian (Беларуская) [Belarus](#)
Bengali (বাংলা) [India](#)
Bombay Hindi (बम्बईया हिंदी) [India](#)
Breton (Brezhoneg) [France](#)
Buginese (Basa Ugi) [Indonesia](#)
Bulgarian (Български) [Bulgaria](#)
Buryat (буряад хэлэн) [Russia](#)
Catalan (Català) [France](#) [Spain](#)
Chakma (ᱠᱟᱱᱵᱟᱫᱽ) [India](#)
Cham [Cambodia](#) [Vietnam](#)
Chechen (Нохчийн) [Russia](#)
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Esperanto (Esperanto) [Brazil](#) [United States](#)
Estonian (Eesti keel) [Estonia](#)
Ewe (Èʋegbe) [Ghana](#)
Ewellic [United States](#)
Faroese (Føroyskt) [Denmark](#)
Finnish (Suomi) [Finland](#) [Sweden](#)
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Friulian (Furlan) [Italy](#)
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Glaitha-A [United States](#)
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Hindi (हिन्दी) [Fiji](#) [India](#)
Hungarian (Magyar) [Hungary](#) [Romania](#)
Icelandic (íslenska) [Iceland](#)
Indonesian (Indonesian) [Indonesia](#)
Interlingua (Interlingua) [United States](#)
Inuktitut (ᐃᓄᐅᐅᐅᐅ) [Canada](#)
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Shan (ရှမ်းတို့) [Thailand](#)
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Uzbek (O'zbek) [Tajikistan](#) [Uzbekistan](#)
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Venda (TshiVenda) [South Africa](#) [Zimbabwe](#)
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Welsh (Cymraeg) [United Kingdom](#)
West Frisian (Frysk) [Netherlands](#)
Wolof (Wolof) [Gambia](#) [Senegal](#)
Xhosa (isiXhosa) [South Africa](#)
Yiddish (ייִדיש) [Israel](#) [Ukraine](#) [United States](#)
Yiddish-Roman (Yiddish) [Argentina](#) [United States](#)
Zulu (isiZulu) [South Africa](#)