

## Maya Hieroglyphs



### [Palenque glyphs](#)

Maya hieroglyphs are a type of pictorial writing that the ancient Maya people used from the 3<sup>rd</sup> century BCE to the 16<sup>th</sup> century CE. They include approximately 800 signs or glyphs consisting of whole-word symbols and syllables. Found all over the Maya world, parts of present day Mexico, Belize, Guatemala, Honduras and El Salvador, these hieroglyphs are written on or carved onto stone buildings, stelae (stone slabs), pottery and codices (accordion folded books).

Included with the language glyphs are a numbering system as well. Maya numbers are written as a series of dots and bars and a shell for zero and have a base unit of 20 – a vigesimal system. The Arabic number system is a decimal system, with a base unit of ten. Therefore, Maya number place values increase by a factor of 20 from bottom to top. Arabic number place values increase by a factor of 10 to the left. The Maya were one of the first cultures to use the number zero, making calculations of very large numbers possible. The use of zero was essential in the development of the Maya solar (Haab) and Long Count (Tzolk'in) calendars.

## Try your hand at writing with Maya hieroglyphs and calculating with Maya numbers!

### Make your own codex

Materials needed:

1. Printed worksheet below
2. Crayons, markers or colored pencils
3. Scissors
4. Glue, staples or tape

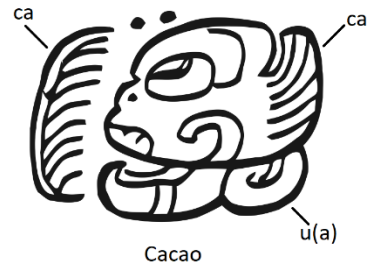


Instructions:

#### [Dresden Codex](#)

1. To make a larger codex, print off the worksheet below on ledger sized (11" x 17") paper.
2. Don't have a large format printer? Make a smaller version printed on standard sized (8.5" x 11") paper. Or make your own codex using any large paper you have. Recycled paper grocery bags are a great option!
3. Using the simplified syllabary and numbers chart below, write the glyphs for each word above the English spelling. Each glyph in the syllabary contains a consonant letter sound linked with a vowel sound. Find the letter/sound pairings needed to write each word. You can draw the syllables next to each other, or connect them side-by-side and below like the example here.

When reading the syllables, use the following vowel sounds:  
"a" as in father  
"e" as in set  
"i" like the ee in see  
"o" as in hold  
"u" like the oo in zoo  
Vowels in parentheses are silent.



4. Next, fill in the numbers to write your phone number and birthdate, and complete the math problems. Don't forget to write your name on your codex in hieroglyphs!
5. Cut along the lines under the words and numbers and set the remaining project aside for the next activity.
6. Arrange the two strips back-to-back, with printed side out and glue, staple or tape each side together.
7. Fold in half lengthwise and fold in half again so that the cover page with your name faces out.
8. Your codex is complete!



For more math fun, try this activity to calculate large numbers using Maya numbers.

[Maya Math](#) – Multiverse- Space Sciences Laboratory, UC Berkeley

Discover the glyphs for your Gregorian calendar birthdate written in the Maya Long Count calendar using this [Maya Calendar Converter](#).

## Decorate a drinking vessel the Maya way

Materials needed:

1. Strip from worksheet below
2. Crayons, markers or colored pencils
3. Scissors
4. Sticky Velcro, glue, staples or tape

Instructions:

1. Add your name in hieroglyphs to the end of the drinking vessel strip.
2. Cut it out along the dotted lines and laminate it. Don't have laminate? Use clear packaging tape if possible.
3. Wrap this strip around your favorite mug or water bottle and attach it to itself with sticky Velcro, glue, staples or tape.
4. Your drinking vessel is complete and marked as your own!

Learn more about how a [drinking cup of a classic Maya noble](#) such as the one pictured above was used to make delicious chocolate!



Cylindrical Vessel

Draw the syllables for the following words.

Ha  
(water)

Ba - la - m(a)  
(jaguar)

Ku - k(u)  
(quetzal[bird])

I - xe - l(e)  
(moon goddess)

Maya numbers

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Write your phone number using Maya numbers.

\_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Write your birth date using Maya numbers.

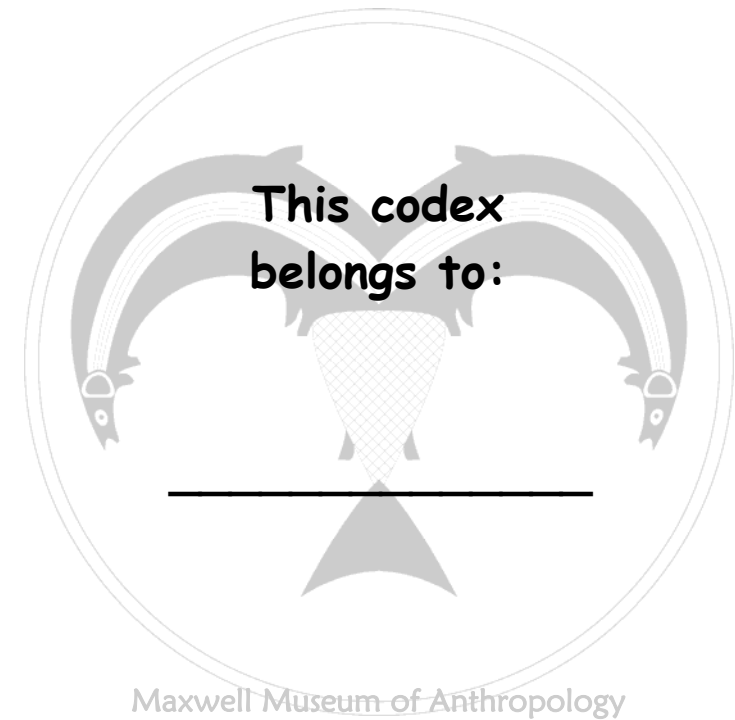
Solve these math problems using Maya numbers.

1. 

2. 

3. 

4. 



Here is a standard sequence of Maya hieroglyphs found on ancient pottery that tells who's pottery it is and what the pottery was used for. Add your name in Maya hieroglyphs to the end, cut it out along the dotted lines and laminate it. Attach it to itself with some Velcro and wrap it around a mug or water bottle that you have at home to claim that drinking vessel as your own!













	B (V)	CH	H	K (Q,C)	L	M	N	P	S	T	TZ (Z)	W	X (SH)	Y (G, J)
A														
E														
I														
O														
U														

## Maya Numbers


## Maya Arithmetic

400's									
20's		$20 \times 1 = 20$		$20 \times 2 = 40$		$20 \times 10 = 200$		$400 \times 2 = 800$	
1's		$1 \times 0 = 0$		$1 \times 3 = 3$		$1 \times 3 = 3$		$1 \times 11 = 11$	
		=20		=43		=203		=811	

## Primary Standard Sequence – Ch’olti and English translation

Salutation		“his paint” = Name Tag		“his drinking vessel”	?	?	Cocoa
Initial Glyph	Deity Head	U-Tsib	-naj	Yu-kib	Ta-sih (?)	Te’-el (?)	Ka- kaw
							

Simplified translation: How do you do - - This is the name tag for (owner’s name) cocoa drinking vessel

The language of Classic Maya texts is an early form of Ch’olti’ and Ch’orti’ from the Ch’olan Maya linguistic family. Today this language is called “Classic Mayan” by some epigraphists (those who decipher glyphs). It was a literary language used for reading and writing, rather than for everyday speech, much like Sumerian in Mesopotamia, Latin in Medieval Europe, Sanskrit in India or Literary Chinese in China<sup>1</sup>.

<sup>1</sup>Coe, Michael D. and Mark Van Stone. 2005. Reading the Maya Glyphs, Thames & Hudson, Second Edition. Pp. 15.

## **Maya hieroglyphs and mathematics resources**

[https://www.youtube.com/watch?v=Ybvb7oy\\_WV0&feature=emb\\_logo](https://www.youtube.com/watch?v=Ybvb7oy_WV0&feature=emb_logo)

Maya math explained!

<http://maya.nmai.si.edu/maya-sun/maya-math-game>

Maya math game and activities from the National Museum of the American Indian

[https://www.exploratorium.edu/ancientobs/chichen/docs/Mayan\\_Math.pdf](https://www.exploratorium.edu/ancientobs/chichen/docs/Mayan_Math.pdf)

Breaking the Mayan Code Mayan Math lesson plan from Exploratorium

<https://www.cincymuseum.org/maya/>

Maya-The Exhibition from the Cincinnati Museum Center. Includes exhibition objects, video and drinking vessel activity.

<https://www.nisenet.org/catalog/gum-and-chocolate>

Gum and Chocolate (both products from resources in the Mesoamerican rain forest) chemistry experiment from NISE-National Informal STEM Education Network

<http://maxwellmuseum.unm.edu/sites/default/files/public/Ancient%20Egypt.pdf>

Egyptian hieroglyphs activity for comparative study.

<http://maxwellmuseum.unm.edu/sites/default/files/public/Using%20symbols.pdf>

Primer on symbols.



**Lulu enjoying a cup of hot cacao!**