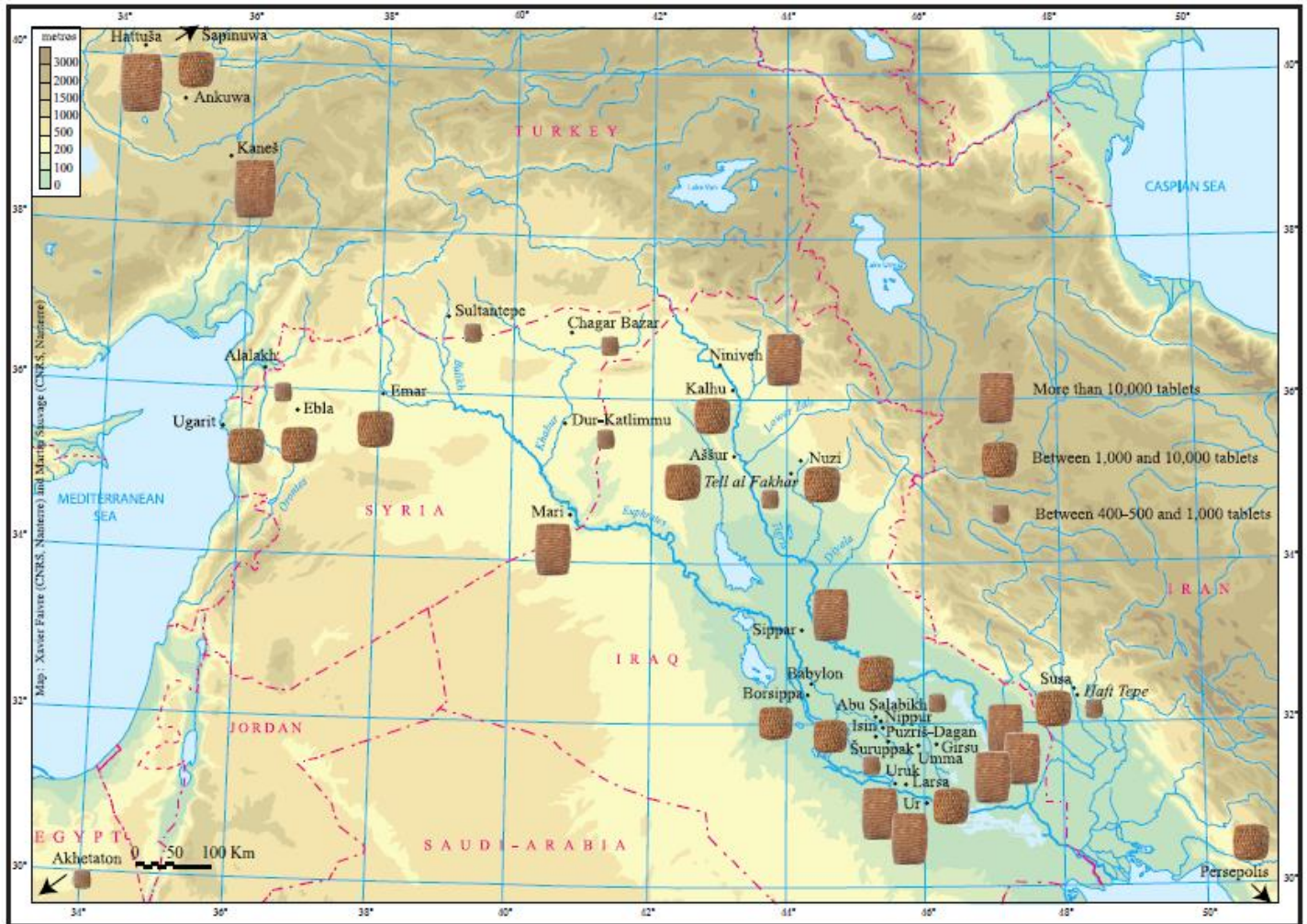




Mesopotamian scribal school: Writing and counting in cuneiform

Cuneiform script written on fresh clay has been the main script used for more than three millennia (ca. 3400 BCE – 75 CE) in a very large area covering the whole Near East. Between half a million and a million of cuneiform clay tablets have been unearthed, mainly in Iraq, Syria, Iran and Turkey.



Discoveries of cuneiform tablets in the Near East:

large tablet > 10,000 tablets – medium tablet : 1,000 to 10,000 tablets – small tablet : 500 to 1,000 tablets.

The cuneiform writing was used for a dozen of different languages according to various systems : logographic, *i.e.* a sign for a word or an idea (Sumerian), syllabic, *i.e.* a sign for a syllable (Akkadian, Hittite, Elamite, Hurrian, etc.), alphabetic (Ugaritic, Old Persian).

Cuneiform writing was presumably invented by the Sumerians in the middle of the 4th millennium BC. In the beginning, signs were resembled drawings and therefore we call them “pictographic signs”. Since it is difficult to draw curves on fresh clay, main medium for cuneiform, which is abundant in this area, curves were transformed into line segments, and the writing took this edgy aspect. It was called cuneiform because the strokes are in the shape of wedges (latin *cuneus*); signs are made of combinations of several wedges.



Cuneiform sign: sag - ta - ak (Sumerian) sa - an - ta - ak - kum (Akkadian)

Sumerian logograms

First signs	evolved signs	meaning	logogram
		man	LÚ
		woman	MÍ
		head	SAG
		bird	MUŠEN
		fish	KU ₆
		ear (of grain)	ŠE
		mountain	KUR

A population speaking Akkadian, a Semitic language, arrived in Mesopotamia in the middle of the 3rd millennium BC. Akkadians had no writing; they adapted cuneiform writing to their own language. They broke their words into syllables and used the sound of the Sumerian signs to note each syllable: *awilum* = man in Akkadian.

A + WI + LU + UM

Such a system used fewer signs than in Sumerian, since it only required as many signs as there were syllables. However, they also borrowed Sumerian logograms to go faster.

Writing exercise:

Write your name on a tablet using the Old Babylonian syllabary.

Write this small text on clay (capital = Sumerian logograms; italics = Akkadian syllables)

MU 1 *me-at* 60.KAM 160th year KAM

ša sa-an-ta-ak-ku since cuneiform writing

ú-ta-ad-du has been deciphered (revealed)



Cuneiform sign: sag - ta - ak (Sumerian) sa - an - ta - ak - kum (Akkadian)

Numbers

There are only two signs to express all the numbers: 1 (𐎠) and 10 (𐎡). No sign for "0".

There are 59 « numbers ». These numbers are written by repeating the 1 and the 10 as many times as necessary.

Example: = 59

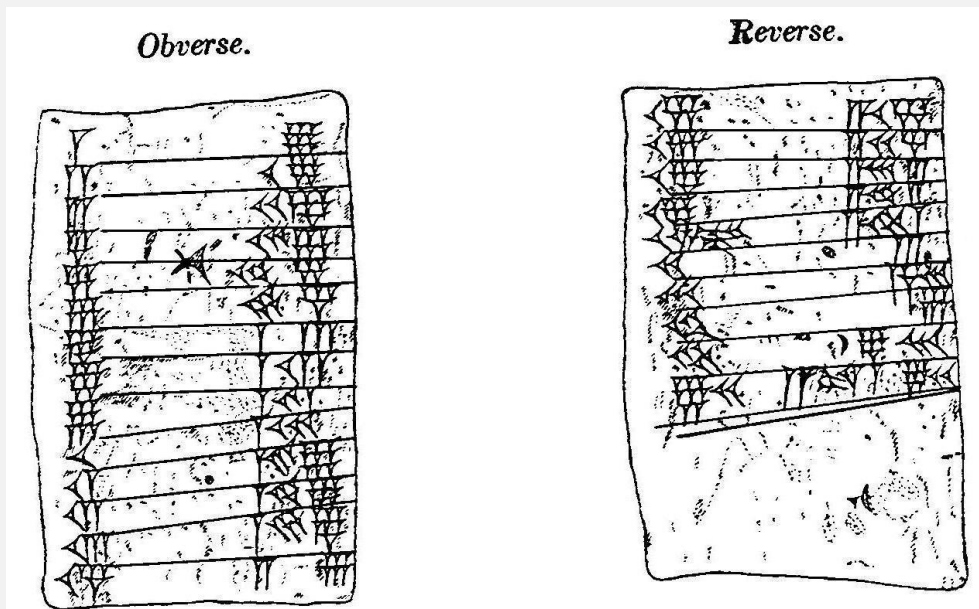
Numeration is positional and sexagesimal: the 1 (𐎠) of each position equals sixty times more than the previous position (right). The sign 𐎠 can be read 1, or 60, or 1/60, etc.

Examples: = 1:3 (1 sixty and 3 units, thus 63 in our decimal system)
 = 2:15 (2 sixties and 15 units, thus 135 in our system)

The sexagesimal system used by Mesopotamian scribes is at the origin of our way of counting time, as well as measuring angles in degrees, minutes and seconds.

Exercise:

Decipher this table of multiplication:



Write on clay a table of multiplication by 15





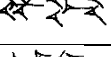




















See the movie on internet: *Cuneiform script: Writing and calculating*
<http://iaassyriology.org/cuneiform-script-writing-and-calculating/>






































Cuneiform sign: sag - ta - ak (Sumerian) sa - an - ta - ak - kum (Akkadian)

Extract of the Old Babylonian syllabary (18th century BC) for practicing cuneiform writing

š = sh ; ʃ = ts ; e = [è]

a	
ab, ap	
ad, at, aṭ	
ag, ak, aq	
ah, eh, ih, uh	
al	
am	
an	
ar	
ás, áš, áš, áz	
ba	
bi, bé, pí, pé	
bu, pu	
da, ṭa	
di, de, ṭi, ṭe	
du, ṭù	
e	
ed, id, et, it eṭ, iṭ	
el, il ₅	
en	
ez, iz, es, is eš, iš	
ga, qá	
gi, ge qì, qè	
gu, qù	
ha	

hi, he	
hu	
i	
ia, ya, yi, yu	
ib, eb, ip, ep	
ig, eg, ik, ek iq, eq	
il, él	
im, em	
in	
ir, er	
iš, eš ₁₅ , mil ís, íš, íz	
ki, ke, qí, qé	
ku, qú	
la	
li, le	
lu	
ma	
me, mi	
mu	
na	
ni, né, ì, lí, ia	
nu	
pa	
qa	
ra	

ri, re, tal, ṭal	
ru	
ša, za, sà	
ša	
si, se	
šar	
ši, še ₂₀ , lim	
šu	
ta, ṭá	
te, ṭe ₄	
ti, ṭi	
tu, ṭú	
ú	
u, eš ₄ , 10	
ub, up	
ud, ut, uṭ, tam, u ₄	
ug, uk, uq	
ul	
um	
un	
ur, lig, lik, liq taš	
uš, ús, úš, úz	
wa, wi, we, wu, pi, pe, am ₇	
ia, ya, yi, yu	
zi, ze ší, sé, sí, sé	
zu, šú, sú	



Cuneiform sign: sag - ta - ak (Sumerian) sa - an - ta - ak - kum (Akkadian)