













BABYLONIAN NUMBER SYSTEM

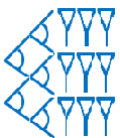
2000-323 BC

The Base 60 System

- They had only two figures;  and 
- They did use a place value system so where the number is affects its value
- To write any numbers they had to use a combination of the above figures in columns for example:

 = 2  = 3  = 4  = 5  = 6  = 7

 = 8  = 9  = 10  = 11 and so on....

up until  = 59.

The Base 60 System

To make larger numbers than 59 you must use the place value system:

Consider this number:



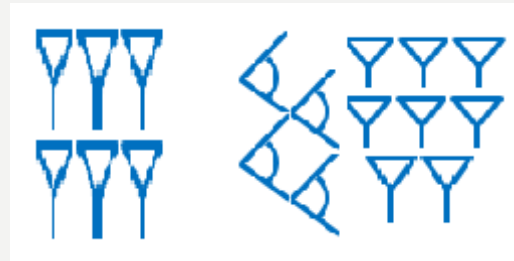
$$\text{Therefore this is: } 1 \times 60 + 46 = 106$$

In the base 60 system the first column from the left represents the digits 1-59 (beginning 60^0), therefore the second column represents.....**60 - 3599**

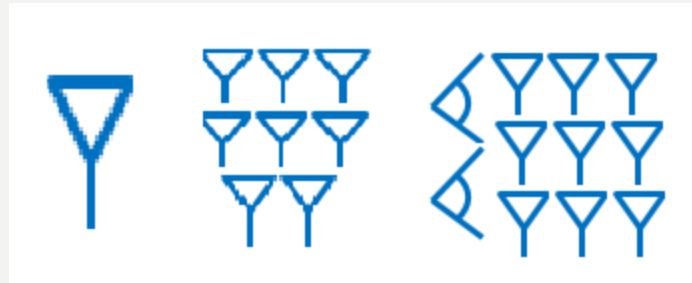
Column 4	Column 3	Column 2	Column 1
60^3	60^2	60^1	60^0
216,000-12,959,999	3,600-215,999	60-3,599	0 - 59

The Base 60 System

How about these?



$$6 \times 60 + 48 = 408$$



$$1 \times 60^2 + 8 \times 60 + 29 = 4109$$

SOUNDS DIFFICULT?

Believe it or not but you use this system every day!

How many seconds are there in:

2 hours 35 minutes and 45 seconds

$$\boxed{2 \times 60 \times 60} + \boxed{35 \times 60} + \boxed{45}$$

$$= 9345$$

Babylonian Mathematics

It is from the Babylonians that we have derived the modern day usage of 60 seconds in a minute, 60 minutes in an hour, and 360 (60×6) degrees in a circle.

ROLLING DICE (APPLYING THE CONCEPT TO MAYAN AND BABYLONIAN NUMERATION)

- (1) [MAYAN] Roll two dice. Assign the larger number to the 20's place value and the smaller number to the 1's place value. For example: 5 and 2 are 102 because $(5 \times 20) + (2 \times 1) = 102$. CHALLENGE: Try this with three dice!
- (2) [BABYLONIAN] Roll two dice. Assign the larger number to the 60's place value and the smaller number to the 1's place value. For example: 5 and 2 are 102 because $(5 \times 60) + (2 \times 1) = 302$. CHALLENGE: Try this with three dice!