





















Lesson on Mayan Mathematics

The Mayan civilization existed in Mexico around the 16th century.

- 1) Which of these dates is considered to be part of the 16th century?
- a) 1650
 - b) 1540
 - c) 16 BC

GO TO <http://www.hanksville.org/yucatan/mayamath.html>

Study the Mayan number system:

				
0	1	2	3	4
				
5	6	7	8	9
				
10	11	12	13	14
				
15	16	17	18	19

graphic source: <http://www.hansville.org/yucatan/mayamath.html>

Read carefully the description of the Mayan number system and answer these questions:

- 2) What are some similarities between our number system and the Mayan number system?

3) What are some differences between our number system and the Mayan number system?

4) Write the powers of 10 below:

$$10 \text{ or } 10^1 = \underline{\hspace{2cm}}$$

$$10 \times 10 \text{ or } 10^2 = \underline{\hspace{2cm}}$$

$$10 \times 10 \times 10 \text{ or } 10^3 = \underline{\hspace{2cm}}$$

$$10 \times 10 \times 10 \times 10 \text{ or } 10^4 = \underline{\hspace{2cm}}$$

Complete the next line:

$$\underline{\hspace{2cm}} \text{ or } \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

5) Our number system is based on base 10 so it is called the _____ system. The Mayan number system uses base 20 and it is called the _____ system.

6) Here is how base 20 works:

$$20 \text{ or } 20^1 = \underline{\hspace{2cm}}$$

$$20 \times 20 \text{ or } 20^2 = \underline{\hspace{2cm}}$$

$$20 \times 20 \times 20 \text{ or } 20^3 = \underline{\hspace{2cm}}$$

$$20 \times 20 \times 20 \times 20 \text{ or } \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

7) Use what you have learned so far to write these numbers using Mayan numerals:

a) 3

d) 10

b) 5

e) 0

c) 19

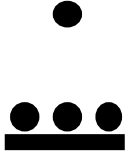
f) 20

8) What numbers are these?

a) One place value:



b) Two place values:



c) Three place values:



9) The Mayas used a calendar that had 18 months of 20 days each plus a short month of five days. This last month of five days was thought to be an unlucky month. How many days are there in total in the Mayan year? _____

10) Why do you think that the Mayan people used based 20? There may be more than one reason:

Want to play some Mayan Games?

GO TO <http://www.ccnet.com/~laplaza/maya/maya.htm>

PLEASE TURN THE MUSIC OFF BY PRESSING MUSIC OFF.

Try playing one or more of the Mayan games.

11) The Mayas were one of the first few civilizations that invented a symbol for zero. Why is the invention of a symbol for ZERO so important? Write here what YOU think:

12) Where did the Mayan civilization take place? See below for a map.

Background: The Mayan Astronomy Page

GO TO <http://www.michielb.nl/maya/astro.html>