

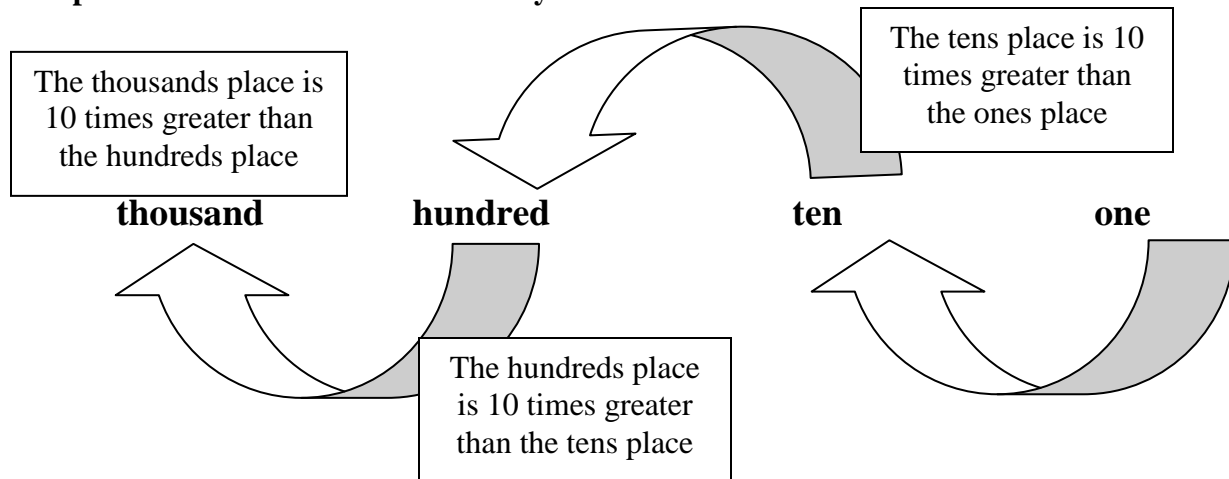
# Binary Project

Computer programmers must write computer code in binary, the “language” used by computers. In Math terms binary is the same as the Base-2 system which uses ONLY the digits one and zero to represent numbers. Notice the word "binary" has the prefix bi-, meaning two, like a bicycle has two wheels. The Base-10 system, which is what you are used to, uses the digits 0 through 9 with each place value TEN times greater than the previous. For example, the tens place is 10 times greater than the ones place, the hundreds place ten times greater than the tens place, and so on. In binary, or the Base-2 system, each place value is TWO times greater than the previous.

I have provided you with the first five numbers of the binary language and their Base-10 equivalents. In order to receive full credit, you must not only accurately complete the rest of the chart but also be able to thoroughly explain your work. You **WILL NOT** receive credit if you cannot explain your work. **You must then choose another base from 3 through 9 and rewrite the base-10 numbers 1-100 in that base,** Be prepared to explain your work. It is **STRONGLY** encouraged that you set up a table similar to the one for the binary numbers.

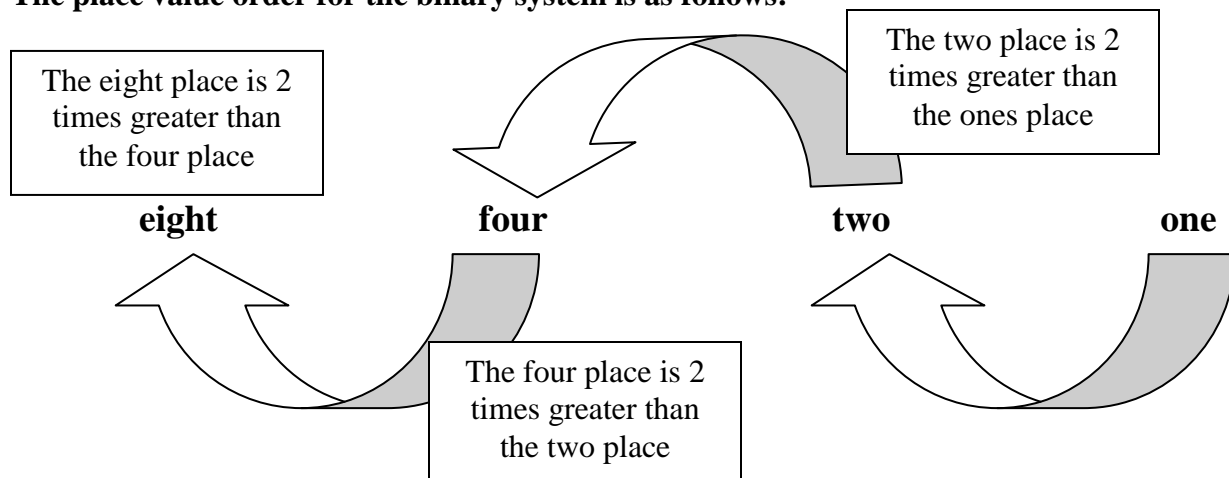
## Base-10 System

The place value form for the Base-10 system is as follows:



## Binary System

The place value order for the binary system is as follows:



Base 10	Binary	Base 10	Binary	Base 10	Binary	Base 10	Binary
1	1	26		51		76	
2	10	27		52		77	
3	11	28		53		78	
4	100	29		54		79	
5	101	30		55		80	
6	110	31		56		81	
7		32		57		82	
8		33		58		83	
9		34		59		84	
10		35		60		85	
11		36		61		86	
12		37		62		87	
13		38		63		88	
14		39		64		89	
15		40		65		90	
16		41		66		91	
17		42		67		92	
18		43		68		93	
19		44		69		94	
20		45		70		95	
21		46		71		96	
22		47		72		97	
23		48		73		98	
24		49		74		99	
25		50		75		100	