Modern computers are made up of billions of switches.

Computers use the binary number system, which only has two symbols: ones and zeros

Each binary digit is called a bit.

A one is a bit that is turned on.

A zero is a bit that is turned off.

Each bit is worth twice the amount of the bit before it, starting from the right.

We add the values for each bit that is turned "on" to calculate the decimal value.

Binary Number	0	1	0	1	0	0	0	1	
Values for each bit	128	64	32	16	8	4	2	1	
"On" Values		64	+	16		+		1	
Decimal equivalent								= 81	
ASCII character equivalent								= Q	

	Binary							Dec.
0 1								Cut out this section
128	64	32	16	8	4	2	1	
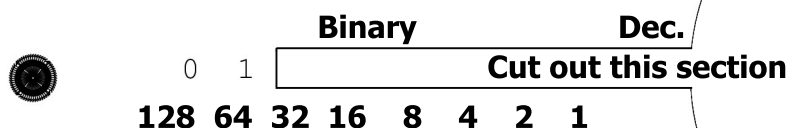
Find the character @ and number 64 to see the binary numbers increase.

When we group eight digits (bits) together, we call this piece of information a "byte".

Most text displayed on computers is encoded in ASCII, the American Standard Code for Information Interchange. Languages that do not use the Latin alphabet, such as Russian, Greek, Japanese, Chinese, etc., may use more than one byte to represent each character.

We use bits to measure the speed at which we transmit and record information.

We use bytes to measure computer storage and memory.

1 bit = a single binary digit (a single one or zero)
1 byte = 8 bits (one character or a number from 0 to 255)
1 kilobyte = 1024 bytes (a half of a page of text)
1 megabyte = 1024 KB, one million bytes (one 500 page novel)
1 gigabyte = 1024 MB, one billion bytes (two hours of compressed TV quality video)
1 terabyte = 1024 GB, one trillion bytes (1/10th of Library of Congress print collection)