



Course Information Technology
Section: Cybersecurity/Cisco



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Write an Encoded Message

What You Will Do

Write a message in binary code.

Materials You Will Need

- Paper
- Pencil
- Worksheet

What is Binary Code?

- **Binary code** is the fundamental language of computing, representing data and instructions using only two digits: 0 and 1 (bits).
- A **bit** is the smallest unit of information represented as a 0 (off) or 1 (on). This is called a digit. It controls the electrical signal moving through a computer circuit board by turning it on or off.
- A **byte** is a string of 8 digits or bits. Each byte represents a character such as a letter, number, or symbol.
- **Binary system** is a Base 2 system. That means that information is communicated with only two states (on or off). Morse code, used in the days of telegraphs, is a Base 3 or ternary system. Like binary, it relies on turning an electrical signal on or off. However, Morse code also uses spacing, or a pause between digits, as a third digit. In contrast, the Decimal system is a Base 10 number system that we use every day (0-9).

Write a Secret Message

1. Use the included worksheet to translate a message into binary code.
2. Have a friend use the chart on the worksheet to translate your secret message.

Letter

Binary Code

This image shows a full page of primary-ruled notebook paper. It features ten vertical red margin lines that divide the page into eleven equal-width columns. There are twenty horizontal blue lines spaced evenly across the page, creating rows for writing. The paper has a light cream or off-white background.

Example:

$$\frac{R}{0} \quad \frac{0}{0} \quad \frac{1}{1} \quad \frac{0}{0} \quad \frac{1}{1} \quad \frac{0}{0} \quad \frac{1}{1}$$

Character	Binary Code	Character	Binary Code	Character	Binary Code
A	01000001	a	01100001	!	00100001
B	01000010	b	01100010	"	00100010
C	01000011	c	01100011	#	00100011
D	01000100	d	01100100	\$	00100100
E	01000101	e	01100101	%	00100101
F	01000110	f	01100110	&	00100110
G	01000111	g	01100111	'	00100111
H	01001000	h	01101000	(	00101000
I	01001001	i	01101001	)	00101001
J	01001010	j	01101010	*	00101010
K	01001011	k	01101011	+	00101011
L	01001100	l	01101100	,	00101100
M	01001101	m	01101101	-	00101101
N	01001110	n	01101110	.	00101110
O	01001111	o	01101111	/	00101111
P	01010000	p	01110000	0	00110000
Q	01010001	q	01110001	1	00110001
R	01010010	r	01110010	2	00110010
S	01010011	s	01110011	3	00110011
T	01010100	t	01110100	4	00110100
U	01010101	u	01110101	5	00110101
V	01010110	v	01110110	6	00110110
W	01010111	w	01110111	7	00110111
X	01011000	x	01111000	8	00111000
Y	01011001	y	01111001	9	00111001
Z	01011010	z	01111010	?	00111111
				@	01000000

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