

VEX CODE VR

Activities



Encoded Message

128	0	0	0	0	0
64	1	1	1	0	0
32	0	0	0	0	0
16	1	0	1	0	0
8	0	0	1	0	0
4	1	1	0	0	0
2	1	0	0	0	0
1	0	1	0	0	0
A					

Playground: Encoded Message

Challenges:

Level 1: Program the VR Robot to drive forward for 1 grid square and detect if a blue or green surface is located in the grid square by using the Down Eye Sensor. Store the results from the Down Eye Sensor as a '1' if the grid square is green, and a '0' if the grid square is blue. Repeat these actions for each of the 8 segments in the first grid column. At the end of the project, print the results to the Print Console as a binary value.

Level 2: Building from the Level 1 project, create an algorithm to convert the stored 8 binary segments (individual bits) into a 1 byte decimal value. Print the results to the Print Console as a both a binary and decimal value. Use the ASCII lookup table below in order to validate your answer and determine the corresponding character to the 1 byte value.

Level 3: Building from the Level 2 project, extend your project to drive the VR Robot around the Playground to determine the decimal values from each of the 5 grid columns. Print the results to the Print Console as a both a binary and decimal value for each column. Use the ASCII lookup table below in order to validate your answer and decode the hidden message.

Level 4 (Python only): Building from the Level 3 project, explore different Python library commands to automate the conversion from binary to decimal, and then decimal to character values. The Python project should print the results to the Print Console as both a binary and decimal value for each column, and then finally print the hidden message as a string.

Helpful Hints:

- To choose a puzzle, select the Starting Location button.



- The solution can be found using the Reveal Answer button after the VR Robot has driven over every colored grid square in the Playground.



- An ASCII lookup table containing binary, decimal, and character conversions is provided for quick reference.

Binary	Decimal	Character
01000001	65	A
01000010	66	B
01000011	67	C
01000100	68	D
01000101	69	E
01000110	70	F
01000111	71	G
01001000	72	H
01001001	73	I
01001010	74	J
01001011	75	K
01001100	76	L
01001101	77	M
01001110	78	N
01001111	79	O
01010000	80	P
01010001	81	Q
01010010	82	R
01010011	83	S
01010100	84	T
01010101	85	U
01010110	86	V
01010111	87	W
01011000	88	X
01011001	89	Y
01011010	90	Z

Binary	Decimal	Character
01100001	97	a
01100010	98	b
01100011	99	c
01100100	100	d
01100101	101	e
01100110	102	f
01100111	103	g
01101000	104	h
01101001	105	i
01101010	106	j
01101011	107	k
01101100	108	l
01101101	109	m
01101110	110	n
01101111	111	o
01110000	112	p
01110001	113	q
01110010	114	r
01110011	115	s
01110100	116	t
01110101	117	u
01110110	118	v
01110111	119	w
01111000	120	x
01111001	121	y
01111010	122	z