

AP CSP Python with CodeX Binary Numbers Activity Guide		Name:	
Warm Up How many ways can you represent “7”?			
Answers could include: math equations like 1 + 6, words like seven in English and different languages, circles or shapes, fingers on hands, hash marks, Roman numerals, etc.			
Activity #1 Watch the video: Secret Coders video			
Activity #2A Get the Activity 2 Form and pennies. Use them to convert a number to binary.		Activity #2B Get the Activity 2 Form and pennies. Use them to convert binary to a decimal number.	
Decimal Number	Binary	Binary	Decimal Number
1	0001	0010	2
4	0100	0110	6
8	1000	1001	9
13	1101	1110	14
Activity #3 Get a flippy-do. Use it to convert a binary to decimal, and a decimal to binary.			
Binary	Decimal	Decimal	Binary
0000 1010	10	5	0000 0101
0001 1100	28	12	0000 1100
0010 0000	32	30	0001 1110
1010 0001	161	100	0110 0100
0011 0110	54	153	1001 1001
Wrap Up: Match the binary number with the correct decimal number. Decimal numbers to match: 14, 85, 12, 170, 0, 255, 24, 19			
00001100	12	00011000	24
00000000	0	00010011	19
00001110	14	10101010	170
01010101	85	11111111	255

For extra practice, try this game: <https://studio.code.org/projects/applab/iukLbcDnzqgoxuu810unLw>