

Binary - Hex - Decimal Practice

I always start out by creating a master chart of the number system values:

Binary (base 2)

0, 1

Decimal (base 10)

0,1,2,3,4,5,6,7,8,9

Hexadecimal (base 16)

- Remember that you can only have 16 digits - 0 through 15, so once you reach 9 the values are represented by letters:

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F

Converting from Binary to Hex:

Each Hex digit represents 4 bits - so we look at a binary number (right to left) and substitute one hex for each 4 bits...

0 0 1 0 1 1 1 1 (base 2)
| |
2 F

0 0 1 0 1 1 1 1 (base 2) = 2F (base 16) = 47 (base 10)

Let's look at a few more examples:

<u>Decimal</u>	<u>Binary</u>	<u>Hex</u>
4	0 1 0 0	4
12	1 1 0 0	C
25	0 0 0 1 1 0 0 1	19

Try these out:

Decimal

Binary

Hex

8

11

54

3

43

111