Girls' Programming Network gpn

Binary Numbers

Computers don't store numbers like we do because they don't have the symbols 0-9 to represent them, they only have 1's and 0's.
Humans write 1101 it means one thousand one hundred and one. But to a computer it means thirteen. But how??

Humans write numbers like this (Base 10):

Thousands	Hundreds	Tens	Ones
1	1	0	1

1 thousand + 1 hundred + 1 one =
One thousand one hundred and one

Computers use base 2, Binary numbers!

Eight	Four	Two	One
1	1	0	1

Add up the columns that have 1's in them
Eight + four + one = thirteen

Lucky humans have all the digits between 0 and 9. Computers have to make do with only 0 and 1!
This is a problem when we want to make a number like 5, computers don't have that number.

Let's make the number 5 in binary

Eight	Four	Two	One
0	1	0	1

Four + One = Five

Now try converting your apple coordinates from Binary to Decimal!