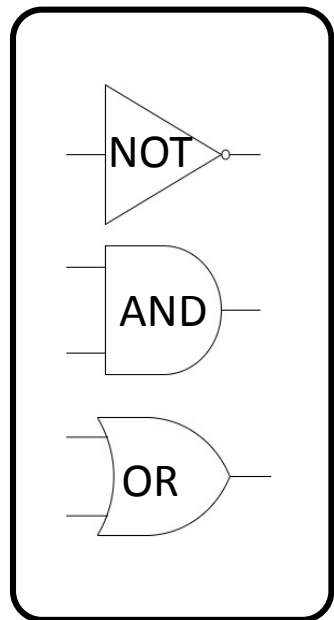


Binary	0	1								
Denary	0	1	2	3	4	5	6	7	8	9

### Character Sets

Character Set	Number of Bits used	Number of Characters Represented	Uses
ASCII	7	128	English Alphabet, numbers, punctuation
Extended ASCII	8	256	European languages and extra characters
Unicode	16/32	Over 64,000	All languages in the world, Emojis

Logic Gates



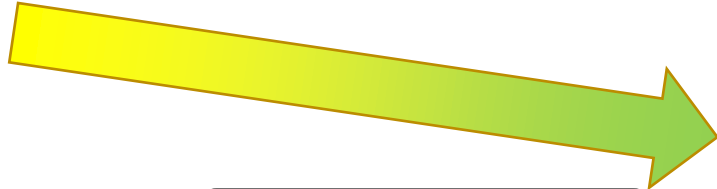
- ### Numbers
- Binary – base 2.
  - Denary – base 10.
  - Converting from binary to denary.
  - Converting from denary to binary.
  - Adding binary numbers.
    - Overflow error
  - Units.
    - Nibble
    - Byte
    - Kilobyte
    - Megabyte
    - Gigabyte
    - Terabyte
    - Petabyte

Numbers

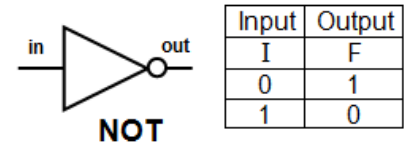


Binary

# Data Representation



Truth Tables

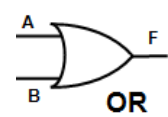


Binary place values – Remember your 2x table!

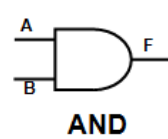
128	64	32	16	8	4	2	1
-----	----	----	----	---	---	---	---

### Binary addition rules

	Denary	Binary
0 + 0 =	0	0
0 + 1 =	1	1
1 + 0 =	1	1
1 + 1 =	2	10
1 + 1 + 1 =	3	11



Inputs		Output
A	B	F
0	0	0
1	0	1
0	1	1
1	1	1



Inputs		Output
A	B	F
0	0	0
1	0	0
0	1	0
1	1	1

### Binary to Denary steps

1. Write the place values
2. Write in the 0s and 1s
3. Add the 1s to get the denary value

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

= 166