

KNOWLEDGE ORGANISER :: LOGIC

KEY VOCABULARY

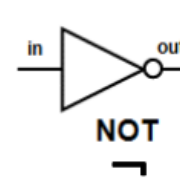
Logic	A system designed to perform a task according to string principles and rules
Logic Gate	The physical switches inside an electronic device which are able to perform calculations
Logic Circuit	A series of logic gates combined to perform a specific task
Truth Table	A table used to plan the inputs and outputs from a logic circuit
Boolean	True or False
Operator	A mathematical symbol used in computing
+	Addition
-	Subtraction
/	Division
*	Multiplication
**	Exponent (Power Of)
MOD	Modulus Division Divide one number by another and return the remainder
DIV	Integer Division Divide one number by another and return the whole number value

TRUTH TABLES

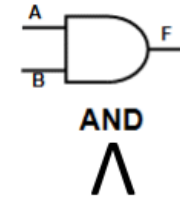
Truth Tables are used to plan the different inputs for a logic gate or logic circuit and show the different outputs

LOGIC GATES

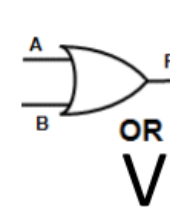
Logic Gates take an input (labelled A, B or C) and provide a single output



Input	Output
I	F
0	1
1	0



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

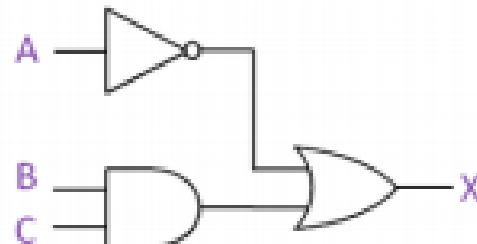


Inputs		Output
A	B	F
0	0	0
1	0	1
0	1	1
1	1	1

LOGIC CIRCUITS

A **Logic Circuit** is a combination of different logic gates. Logic gates can be combined in any order to solve computational problems. In the CPU, the transistors are the logic gates.

(NOT A) OR (B AND C)



A	B	C	NOT A	B AND C	X = (NOT A) OR (B AND C)
0	0	0	1	0	1
0	0	1	1	0	1
0	1	0	1	0	1
0	1	1	1	1	1
1	0	0	0	0	0
1	0	1	0	0	0
1	1	0	0	0	0
1	1	1	0	1	1