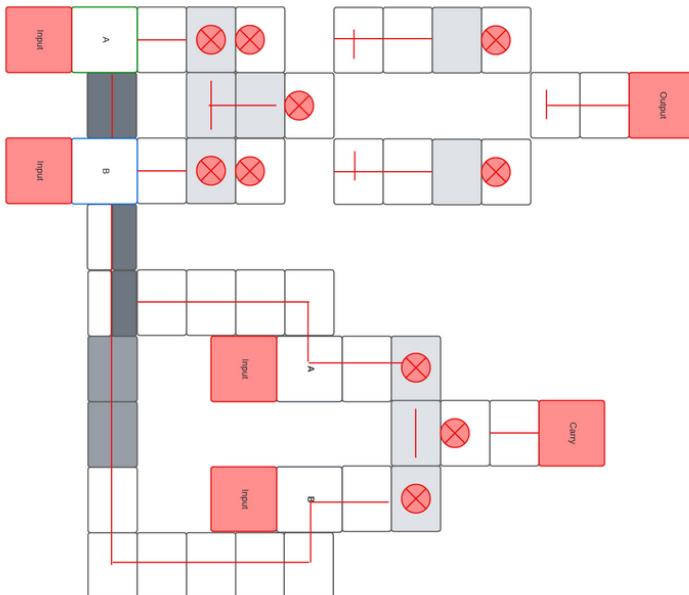
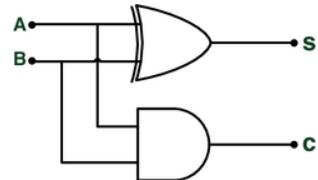


Half-Adder



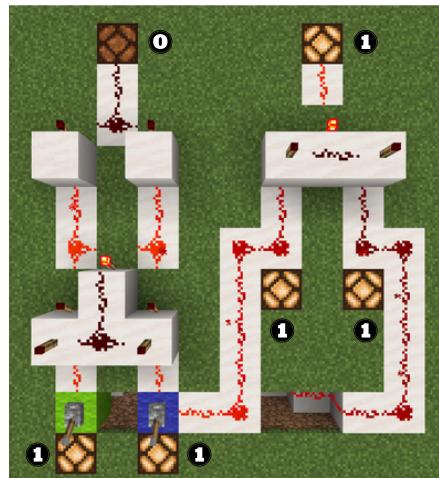
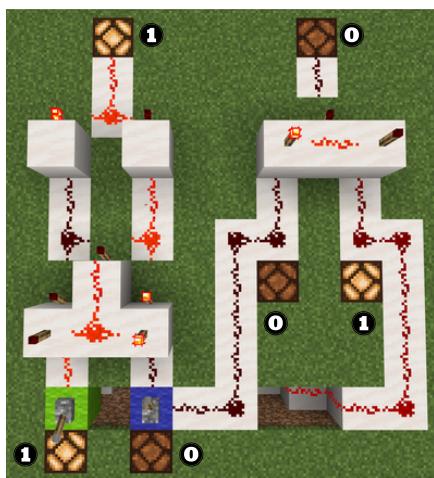
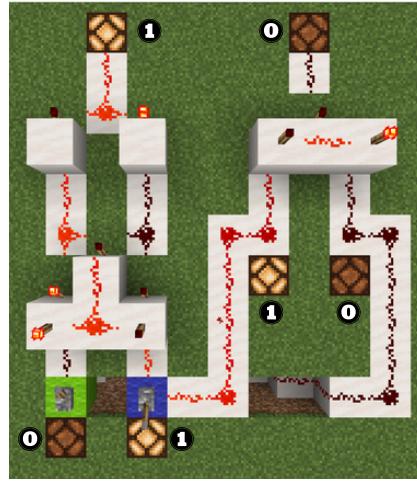
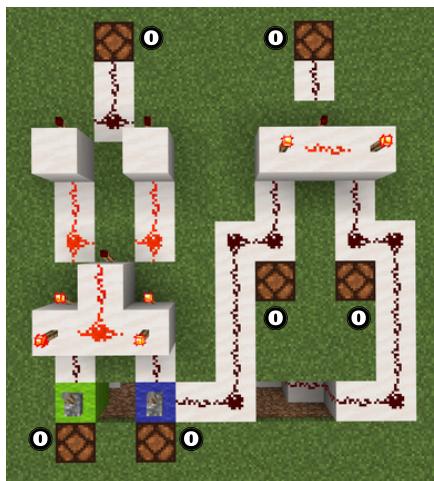
Green: input A (lever)
 Blue: input B (lever)
 - : redstone powder
 ● : redstone torch
 ○ : redstone lamp
 ☐ : one quartz block
 ☑ : two quartz blocks
 ☒ : three quartz blocks
 ☓ : one quartz block on top and - three quartz blocks under



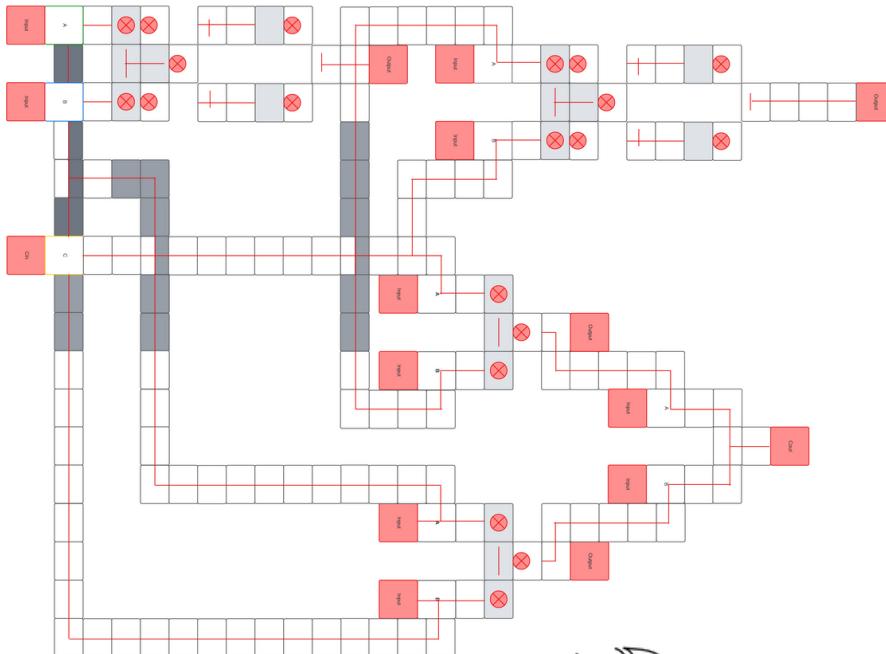
Inputs		Outputs	
A	B	Sum	Carry
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1

https://www.researchgate.net/figure/Half-adder-circuit-diagram_fig1_272015389
<https://www.javatpoint.com/half-adder-in-digital-electronics>

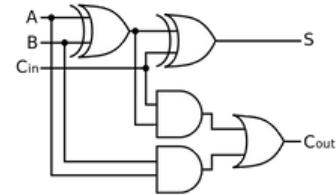
Minecraft implementation



Full-Adder



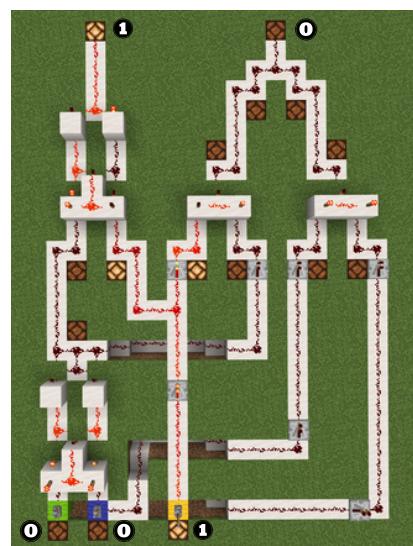
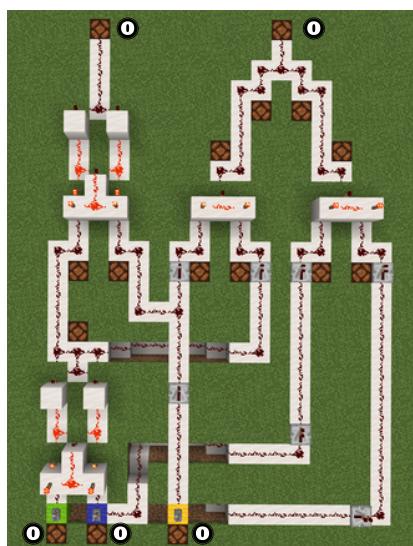
Green: input A (lever)
 Blue: input B (lever)
 Yellow: Cin C (lever)
 — : redstone powder
 ● : redstone torch
 ○ : redstone lamp
 □ : one quartz block
 ▨ : two quartz blocks
 ■ : - two quartz blocks
 ▓ : - three quartz blocks
 ▔ : one quartz block on top and - two quartz blocks under
 ▕ : one quartz block on top and - three quartz blocks under
 ▏ : repeater



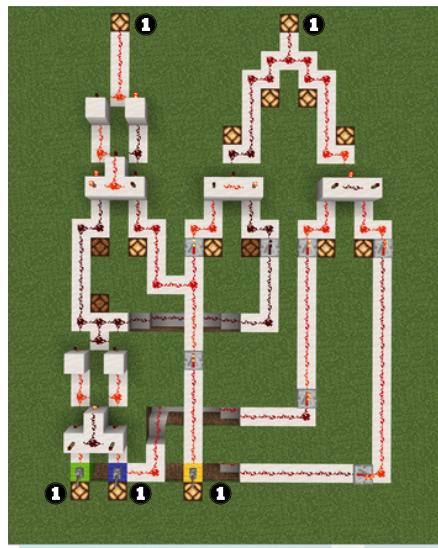
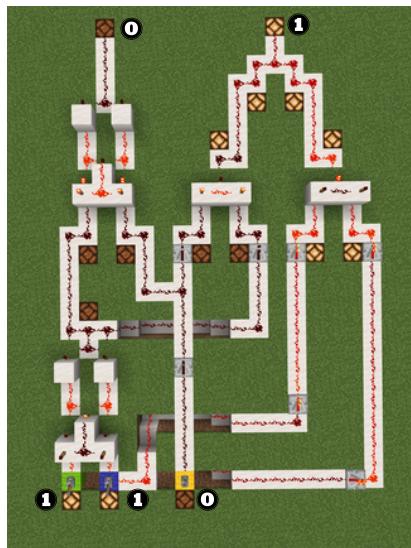
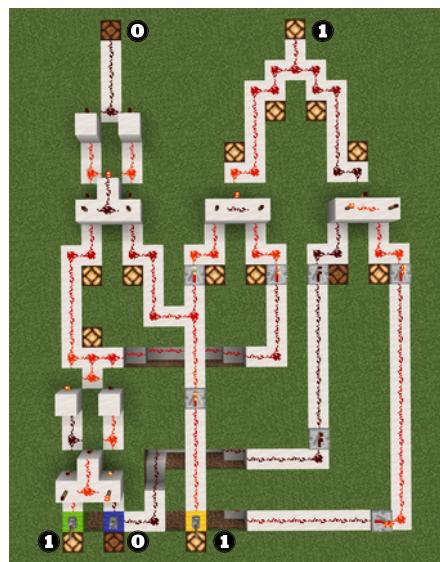
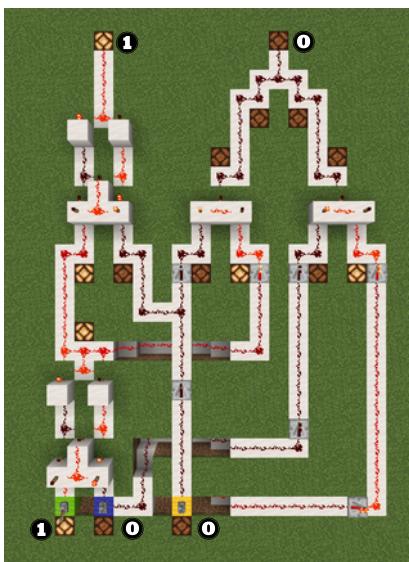
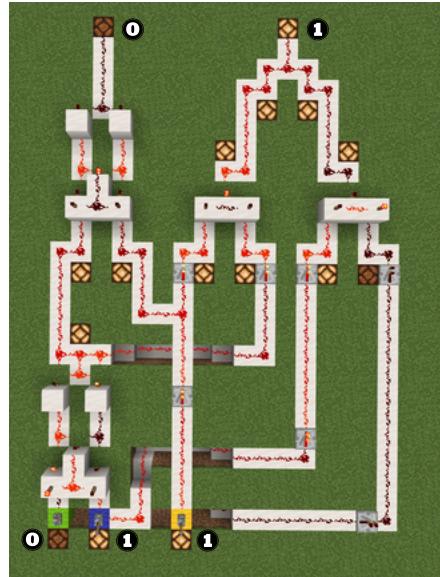
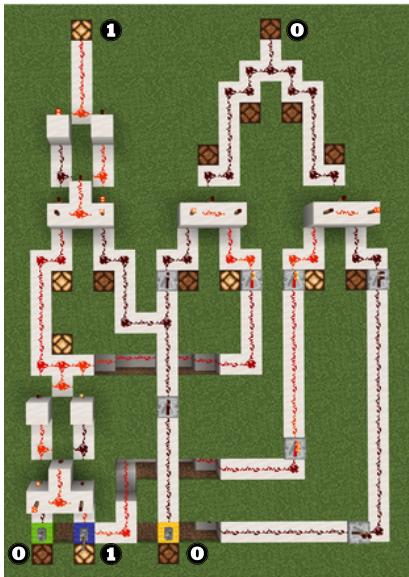
Inputs			Outputs	
A	B	Cin	Sum	Carry
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1

[\(https://commons.wikimedia.org/wiki/File:Full-adder.svg\)](https://commons.wikimedia.org/wiki/File:Full-adder.svg)
<https://www.javatpoint.com/full-adder-in-digital-electronics>

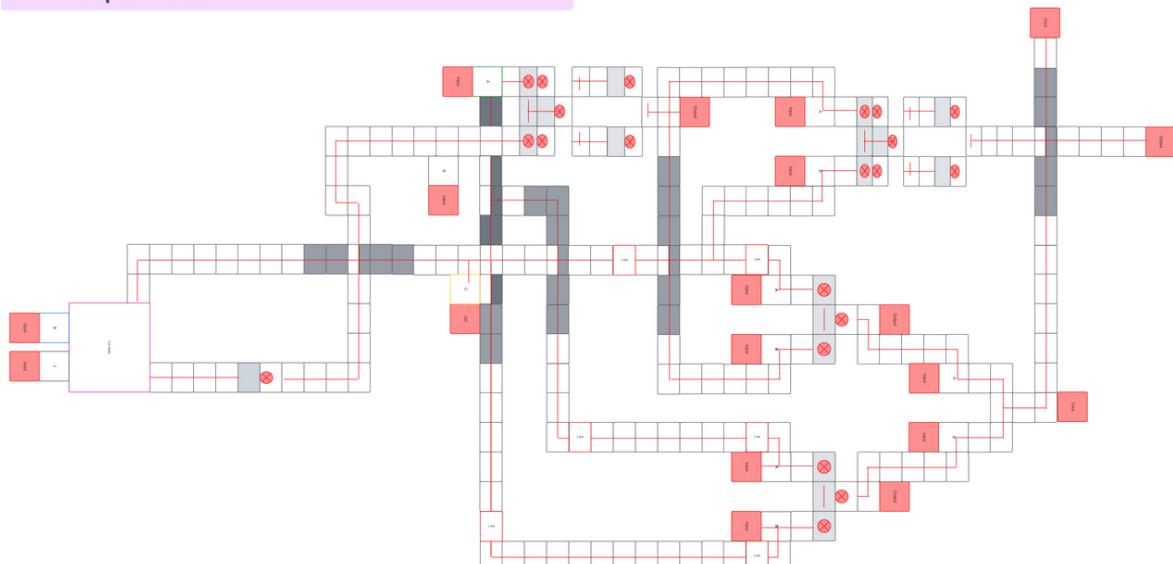
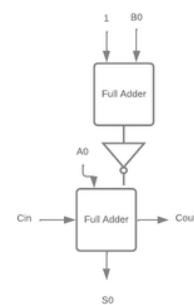
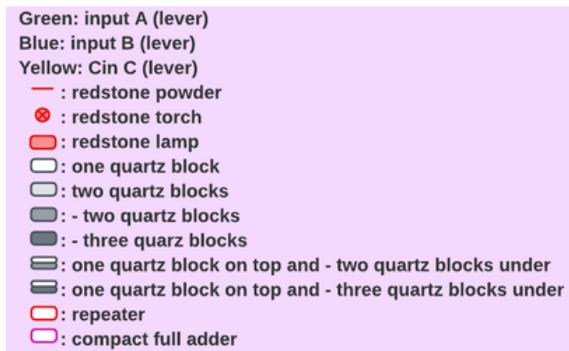
Minecraft implementation



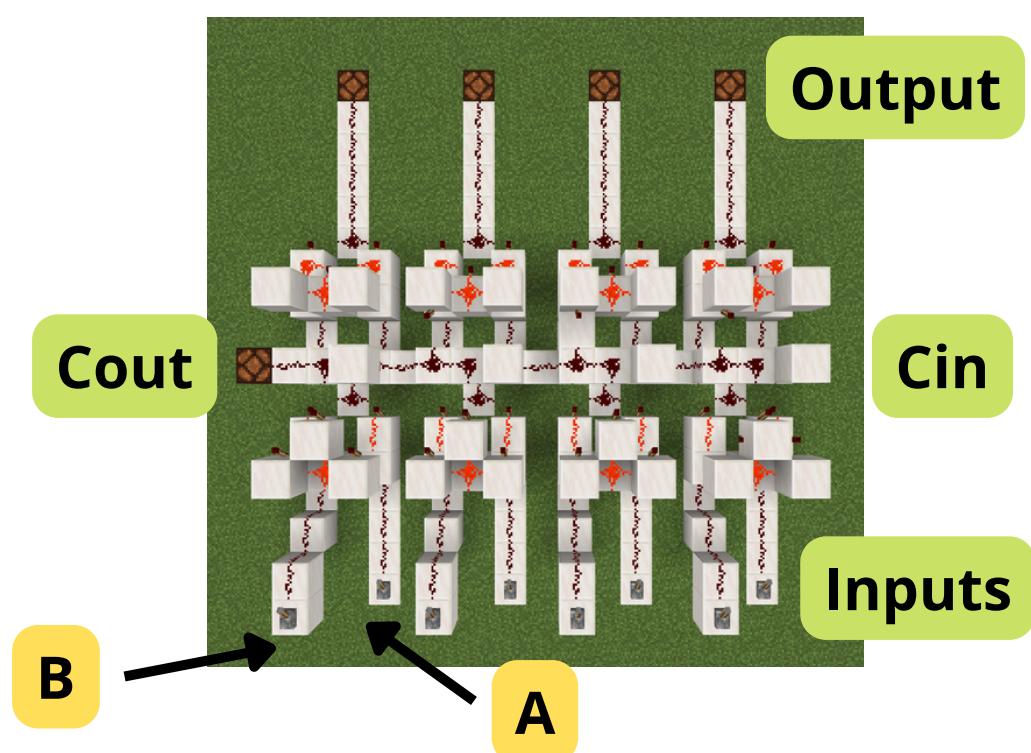
Minecraft implementation



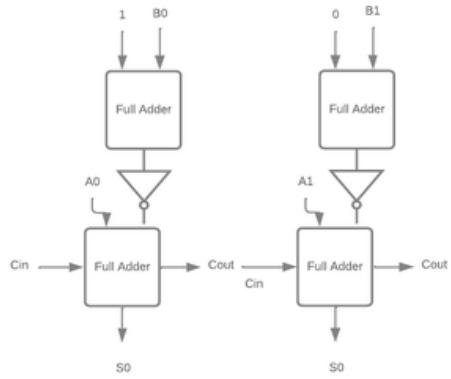
Full Adder/Subtractor



Minecraft implementation (compact full adder)



Full Adder/Subtractor (2 bits)



Green: input A (lever)

Blue: input B (lever)

Yellow: Cin C (lever)

— : redstone powder

⊗ : redstone torch

█ : redstone lamp

□ : one quartz block

□ : two quartz blocks

■ : - two quartz blocks

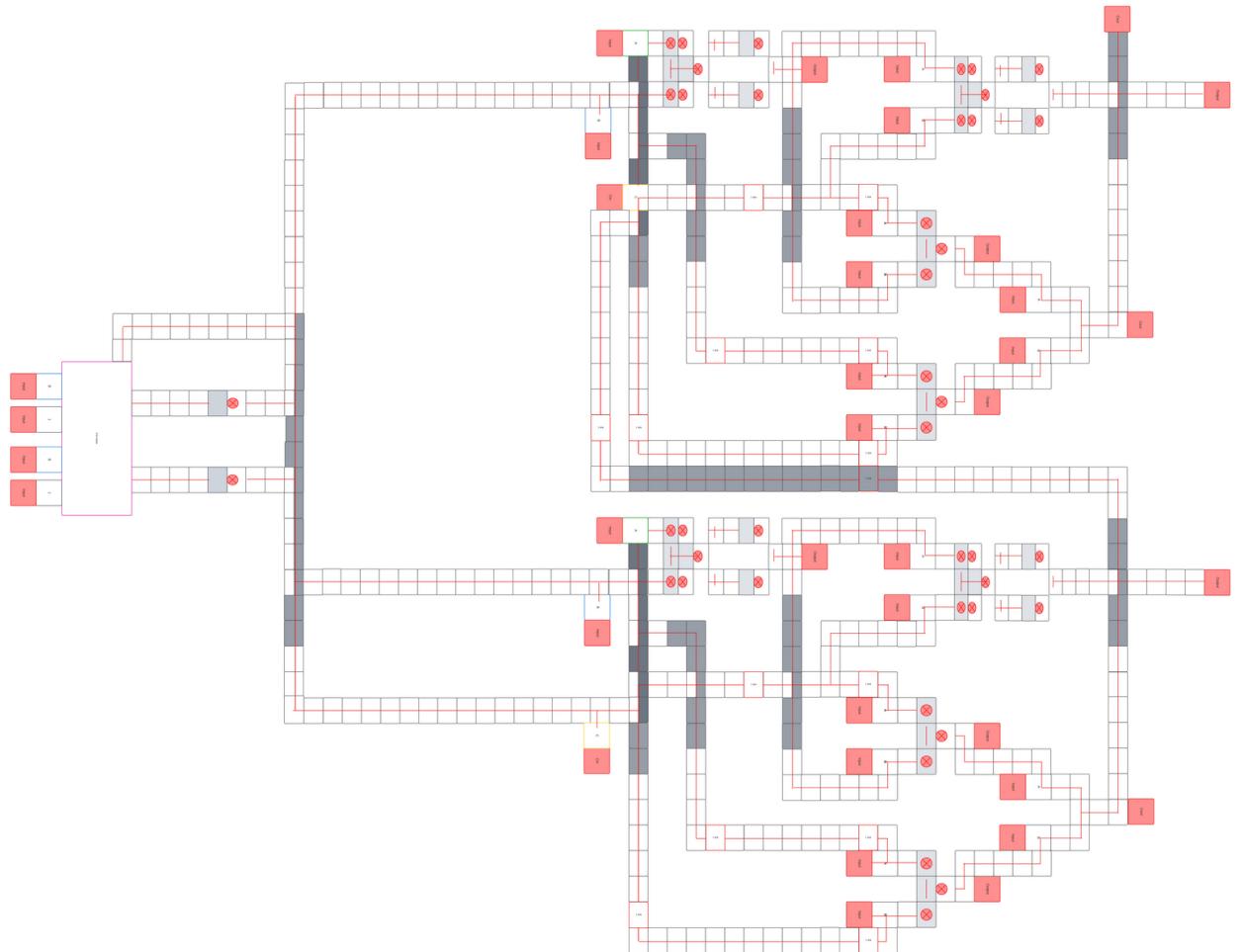
■ : - three quartz blocks

■ : one quartz block on top and - two quartz blocks under

■ : one quartz block on top and - three quartz blocks under

█ : repeater

□ : compact full adder



Minecraft implementation

