

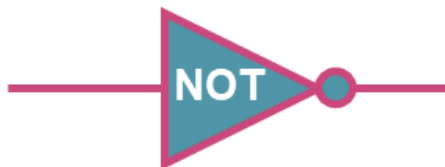


In this lesson we will build the circuit of basic logic gates.

**AFTER THIS LESSON, THE STUDENT SHOULD BE ABLE TO DO THE FOLLOWING:**

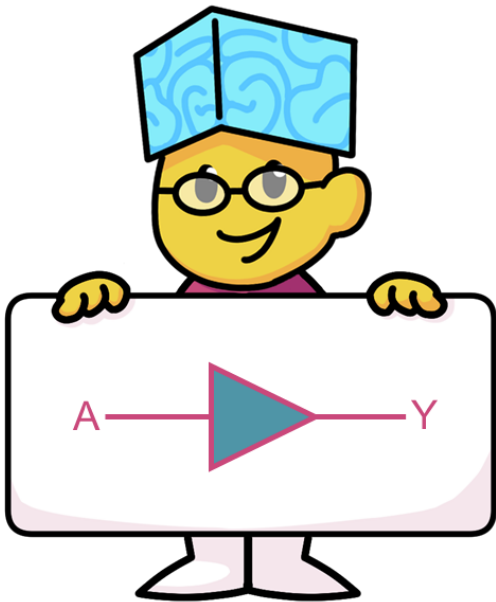
## Building Logic Gates

1. Construct logic gates using breadboards and electrical components to demonstrate logical operations.

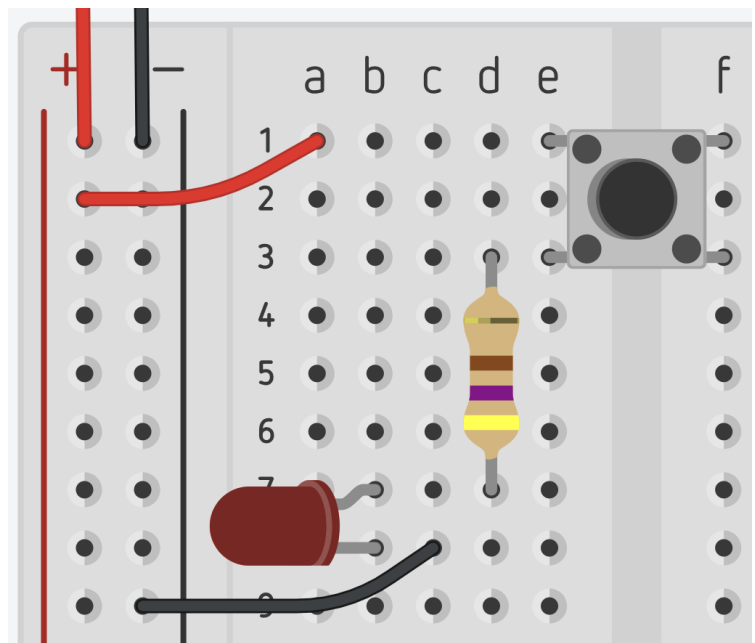
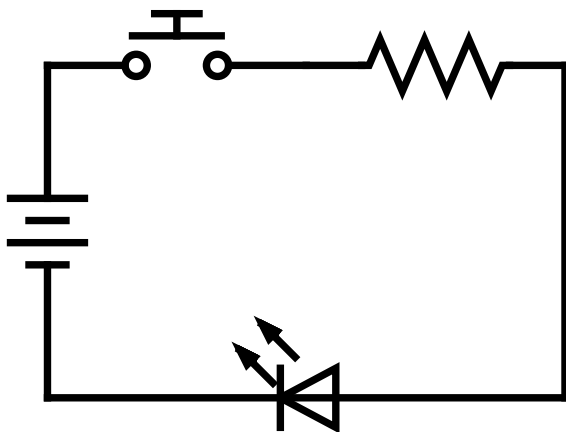


## TRY THIS!

Build and demonstrate the circuit for a **YES Gate**.

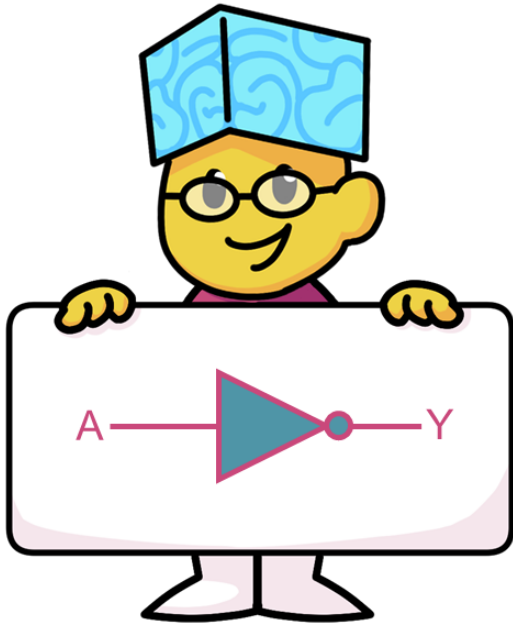


YES Gate	
Input	Output
<b>Push Button Switch (A)</b>	<b>LED (Y)</b>
Not Pressed 0	Light Off 0
Pressed 1	Light ON 1

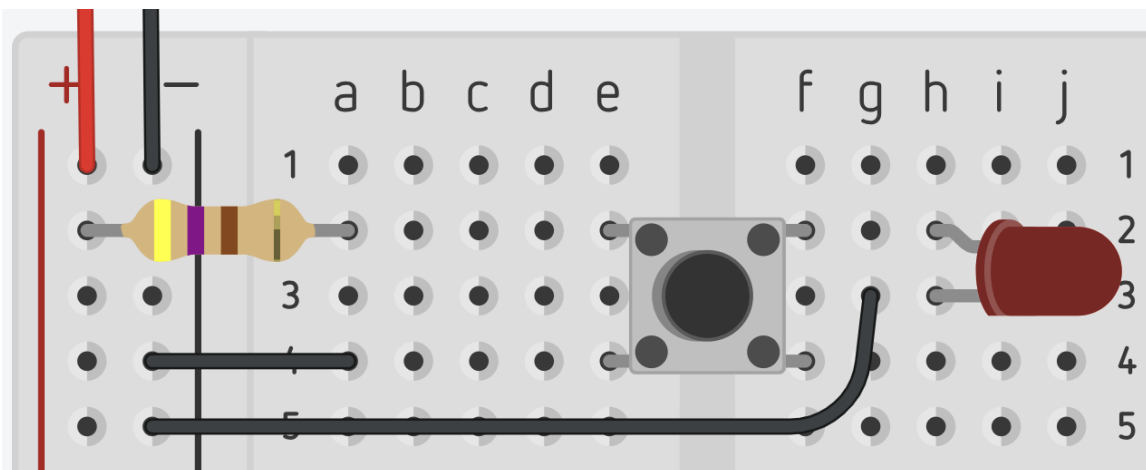
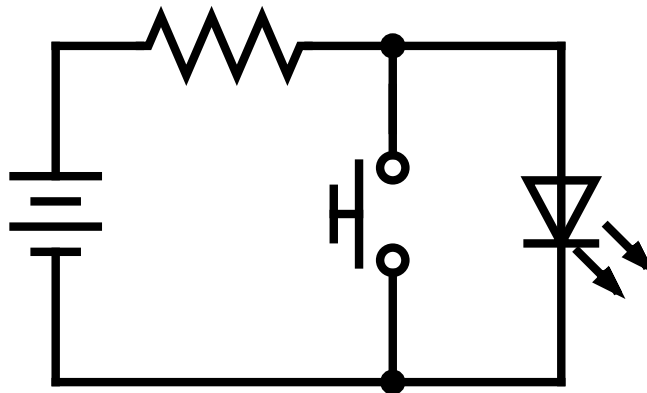


## TRY THIS!

Build and demonstrate the circuit for a **NOT Gate**.

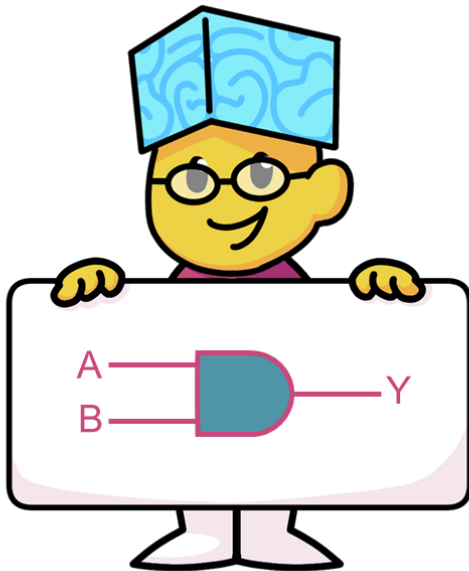


NOT Gate	
Input	Output
Push Button Switch (A)	LED (Y)
Not Pressed 0	Light ON 1
Pressed 1	Light Off 0

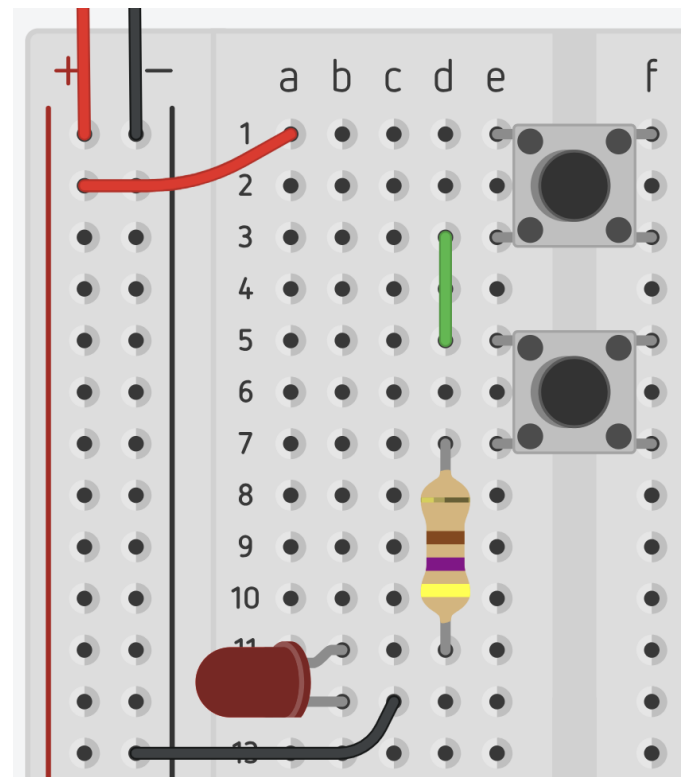
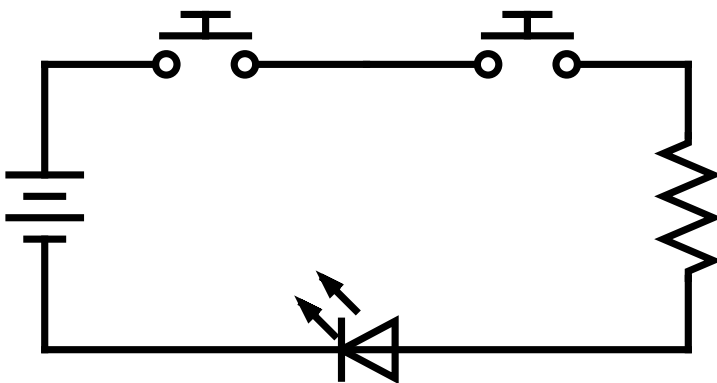


## TRY THIS!

Build and demonstrate the circuit for an **AND Gate**.

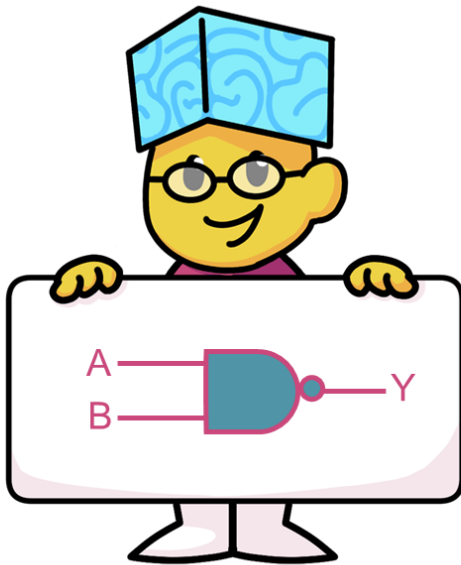


AND Gate		
Input		Output
Push Button Switch (A)	Push Button Switch (B)	LED (Y)
Not Pressed 0	Not Pressed 0	Light Off 0
Not Pressed 0	Pressed 1	Light Off 0
Pressed 1	Not Pressed 0	Light Off 0
Pressed 1	Pressed 1	Light ON 1

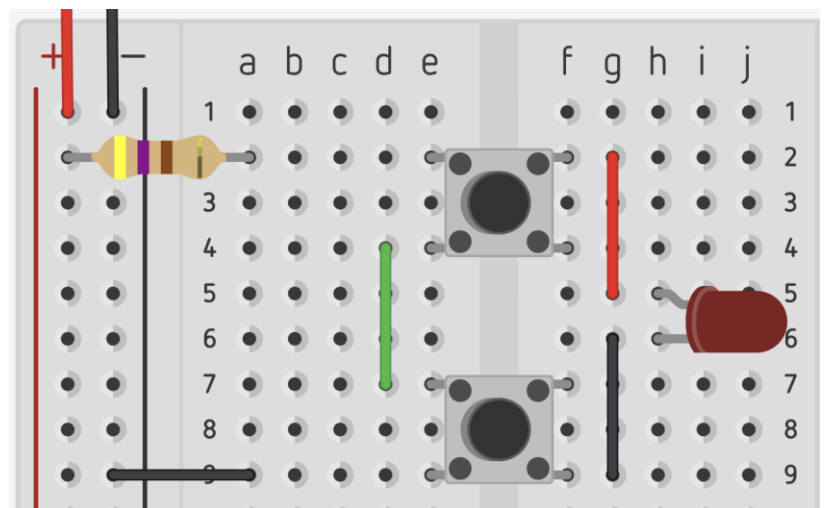
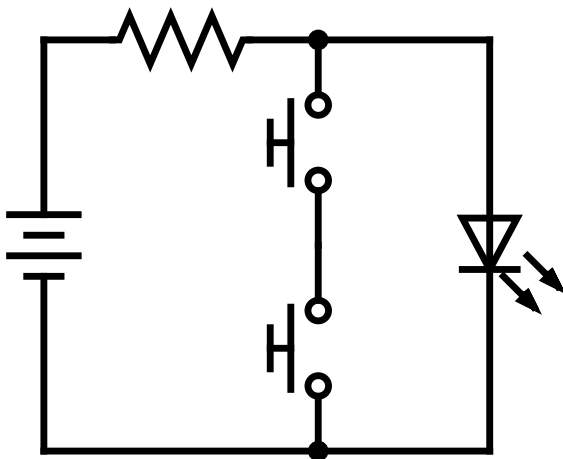


## TRY THIS!

Build and demonstrate the circuit for a **NAND Gate**.

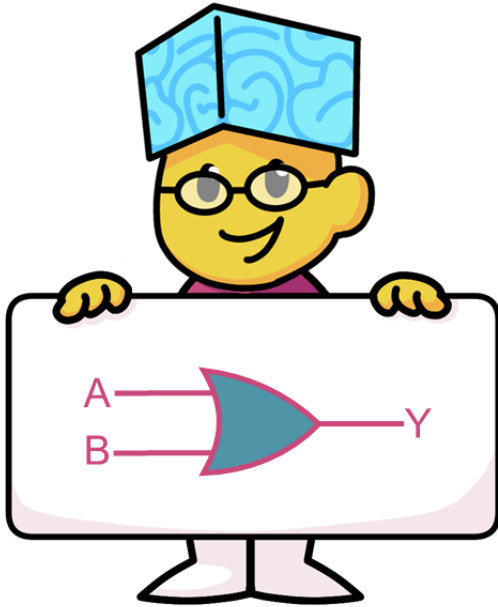


NAND Gate		
Input		Output
Push Button Switch (A)	Push Button Switch (B)	LED (Y)
Not Pressed 0	Not Pressed 0	Light ON 1
Not Pressed 0	Pressed 1	Light ON 1
Pressed 1	Not Pressed 0	Light ON 1
Pressed 1	Pressed 1	Light Off 0

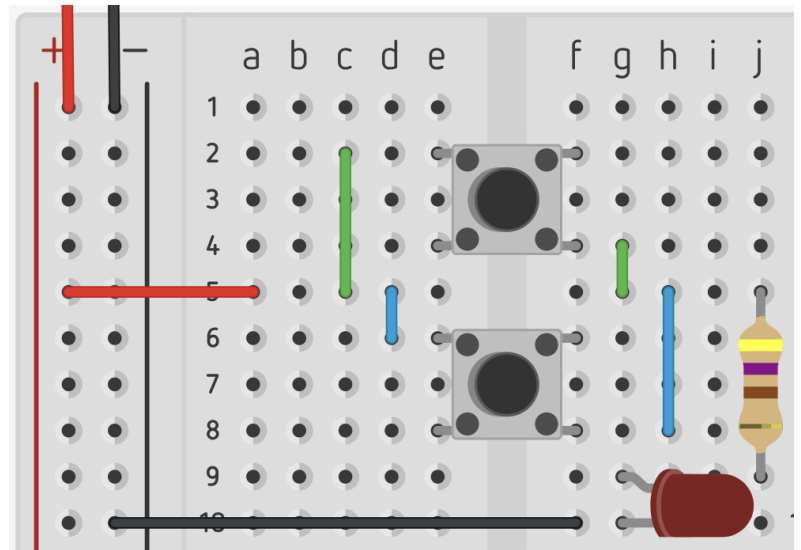
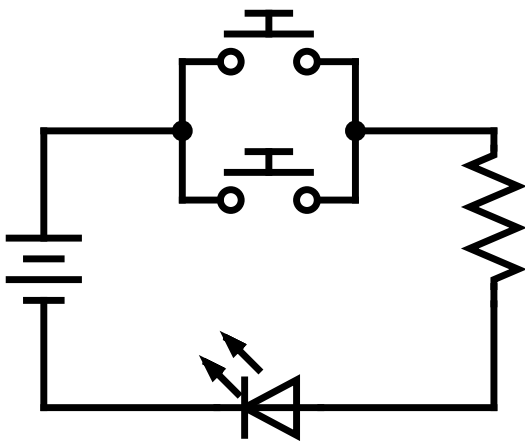


## TRY THIS!

Build and demonstrate the circuit for a **OR Gate**.

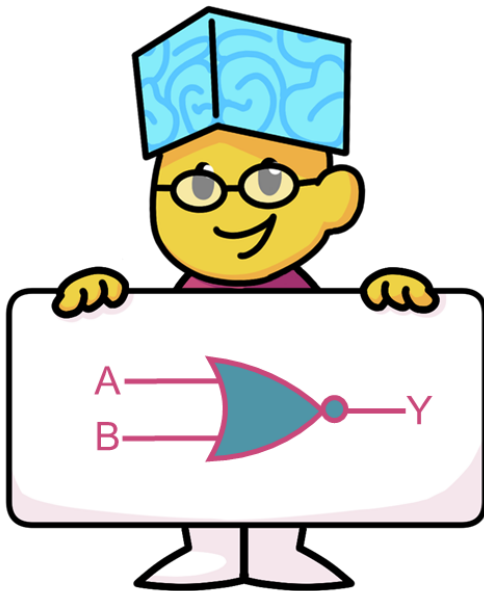


OR Gate		
Input		Output
Push Button Switch (A)	Push Button Switch (B)	LED (Y)
Not Pressed 0	Not Pressed 0	Light Off 0
Not Pressed 0	Pressed 1	Light ON 1
Pressed 1	Not Pressed 0	Light ON 1
Pressed 1	Pressed 1	Light ON 1



## TRY THIS!

Build and demonstrate the circuit for a **NOR Gate**.



NOR Gate		
Input		Output
Push Button Switch (A)	Push Button Switch (B)	LED (Y)
Not Pressed 0	Not Pressed 0	Light ON 1
Not Pressed 0	Pressed 1	Light Off 0
Pressed 1	Not Pressed 0	Light Off 0
Pressed 1	Pressed 1	Light Off 0

