

# Relay Module

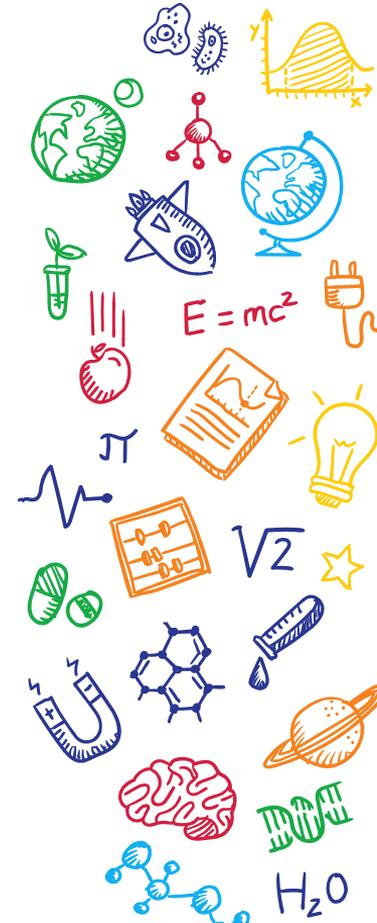
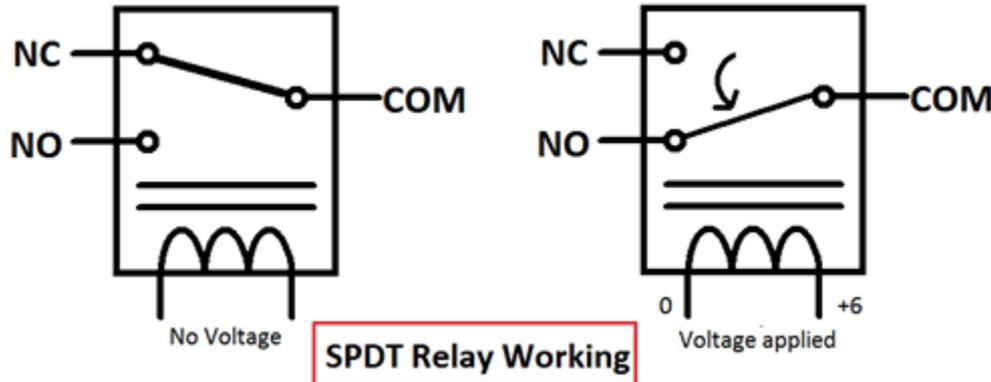


# What is Relay?

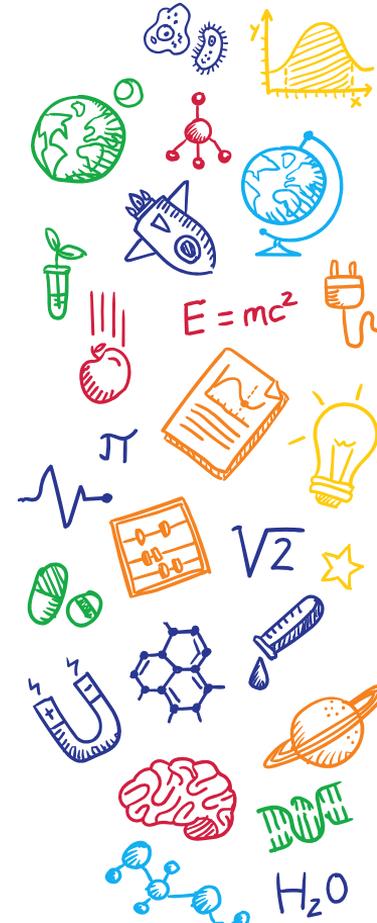
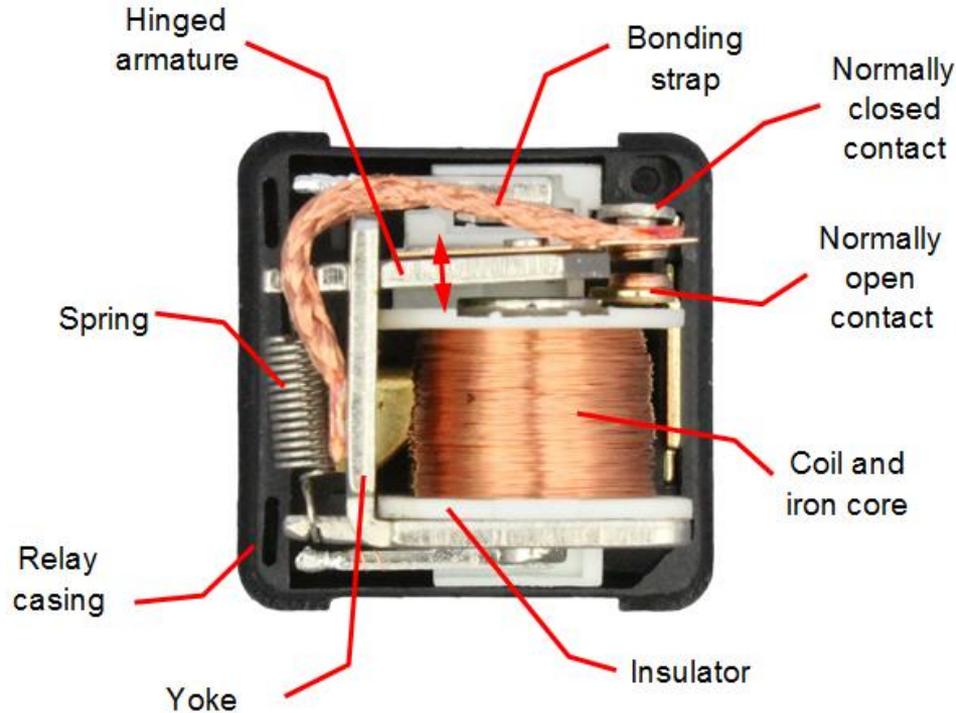


# Working of electromagnetic relays

- A relay consists of an electromagnetic coil and a Single pole double throw switch (SPDT).
- An SPDT switch has one input and two outputs. As seen in the image there is a part in the symbol with marking NO, NC, and COM on it, that is an SPDT switch.

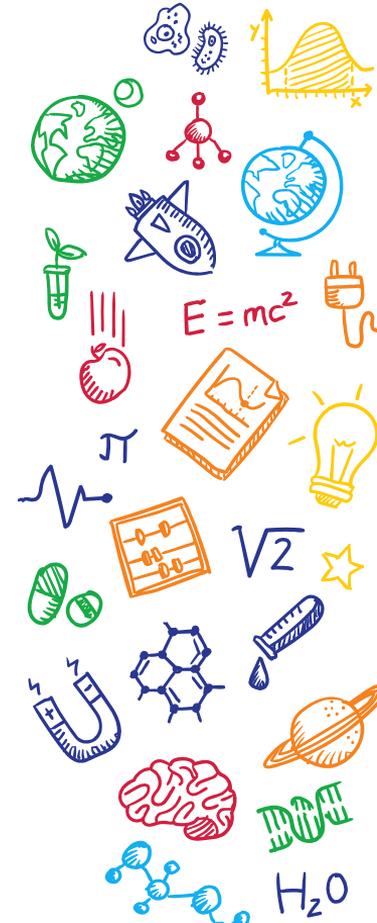
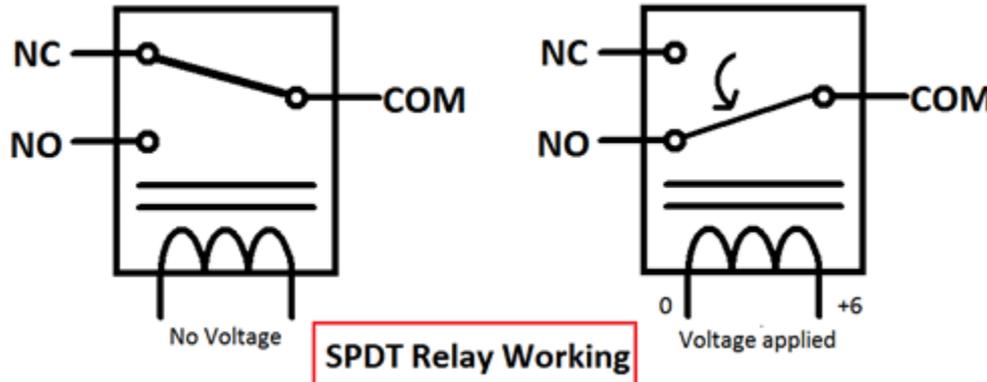


# Working of electromagnetic relays



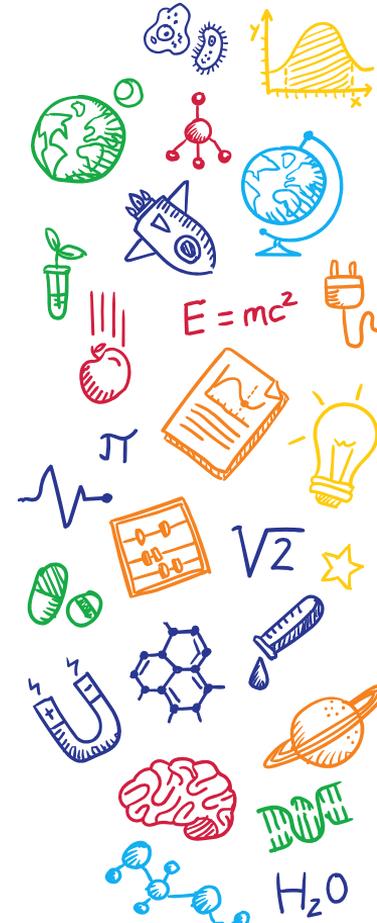
# Working of electromagnetic relays

- In this COM is the input of the switch, NC means normally closed and NO means normally open. Both NC and NO are outputs of SPDT switch. The contact that connects the output to input in SPDT is called **pole**.
- The spring-like structure symbolizes an electromagnetic coil which act as magnet when current passes through it.



# Working of electromagnetic relays

- When the coil is not energized NC and COM remains connected in SPDT.
- As soon as the coil is energized NO and COM gets connected.
- When the coil is energized magnetic field is generated around it, the pole gets attracted towards this field and it shifts itself from NC to NO. Hence NO and COM get connected.
- As soon as coil gets de-energized coil loses its magnetic field and pole moves back to original position and NC and COM gets connected again.

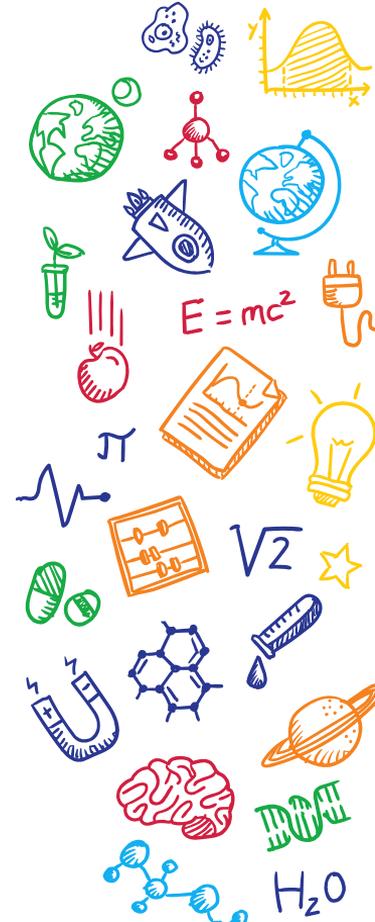
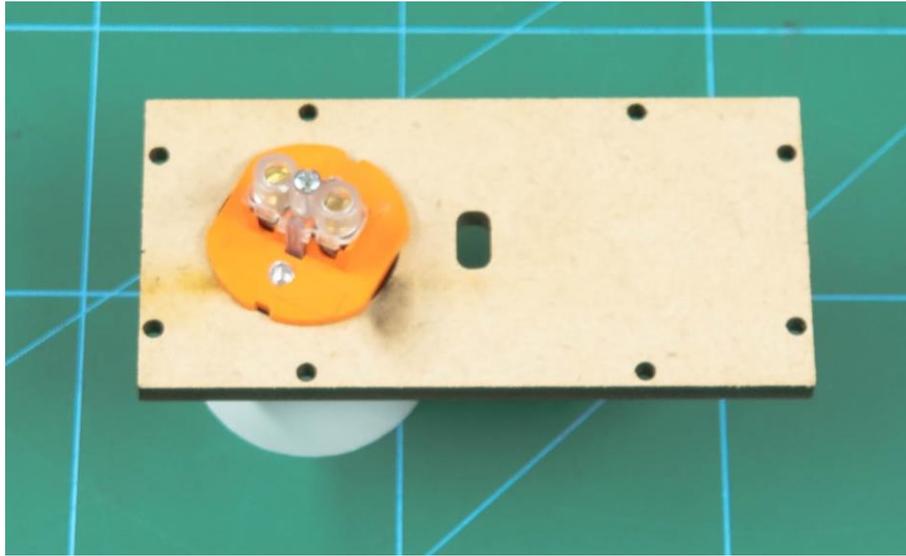


# Activity

## Controlling Light Bulb using Relay and evive

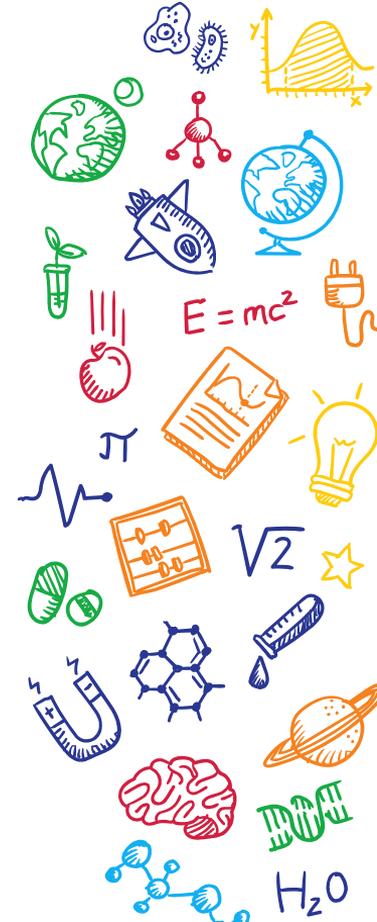
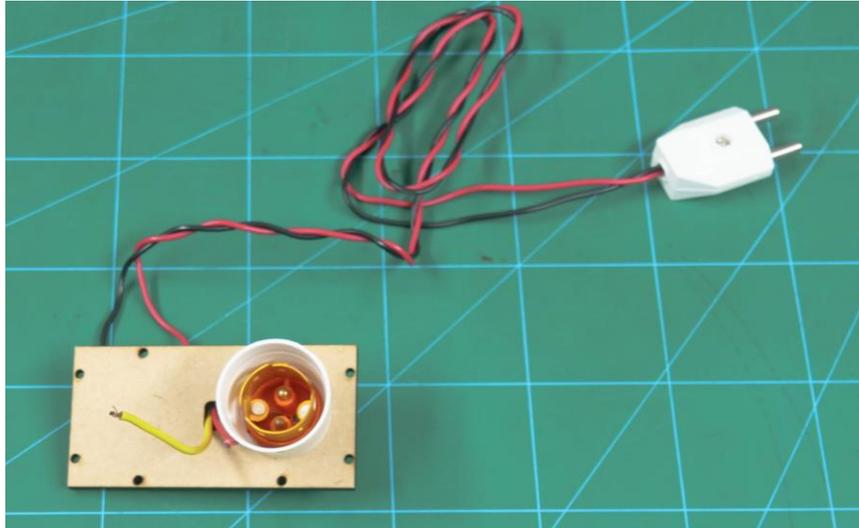
# Assembly of Bulb Circuit

- Fix the bulb holder into the upper plate by removing the outer cap from the bulb holder assembly.



# Assembly of Bulb Circuit

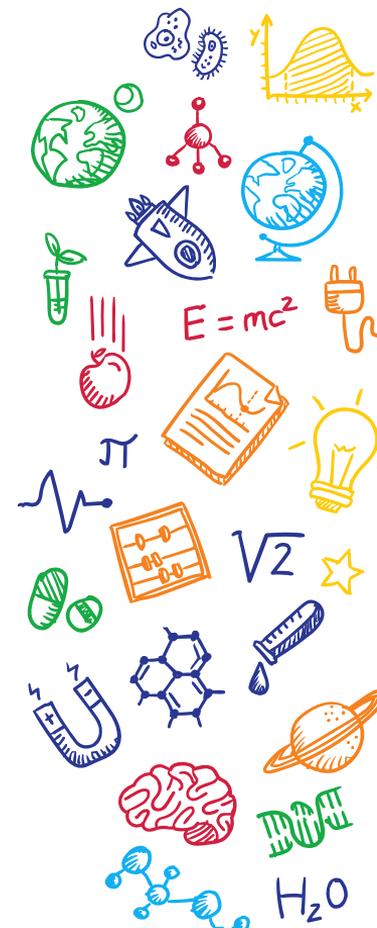
- Take a small piece of electrical wire and attach it to one of the two outlets of the bulb holder.
- Take the electrical wires which have a plug attached. Attach anyone to the other outlet of the bulb holder.





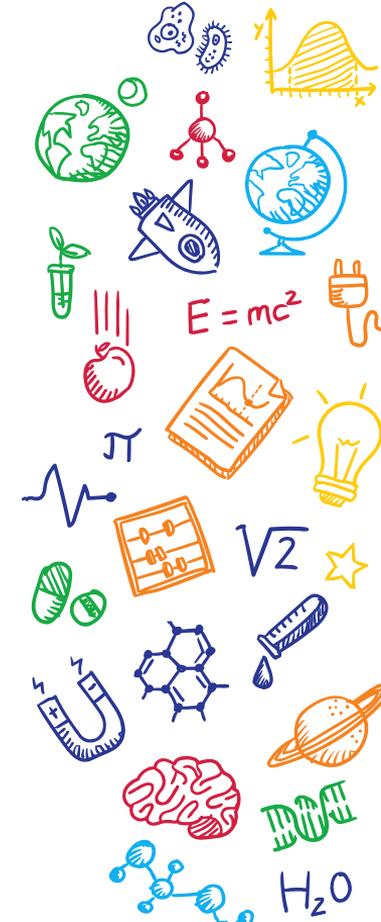
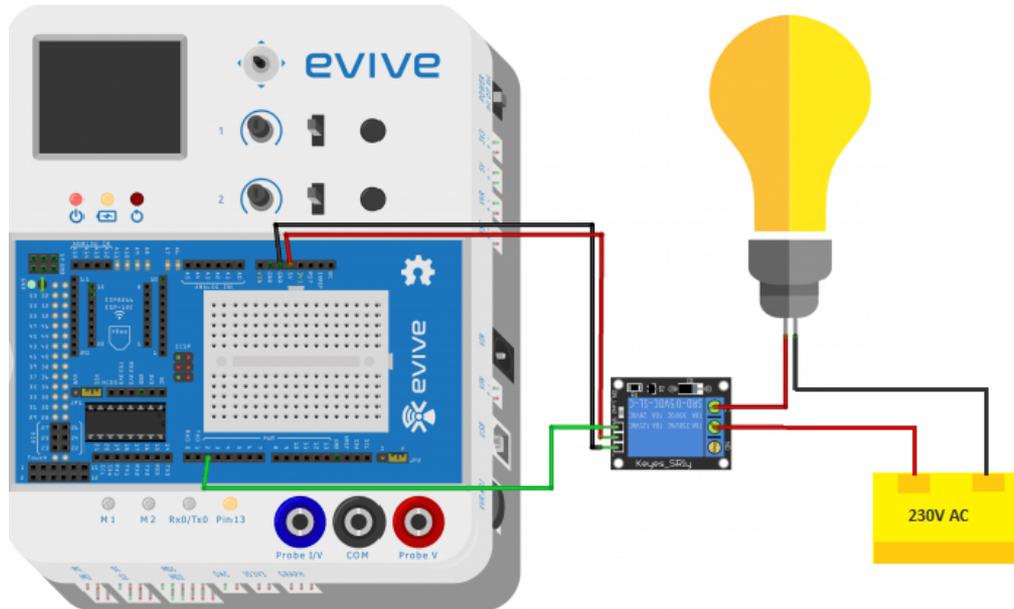
# Assembly of Bulb Circuit

- Attach all the four sides, i.e. front, back, left, and right to the top plate using M3 nuts and bolts.
- Before fixing the bottom side of the box, make sure that you pass the wires through one of the holes given at the bottom. Attach the bottom plate using M3 nuts and bolts.



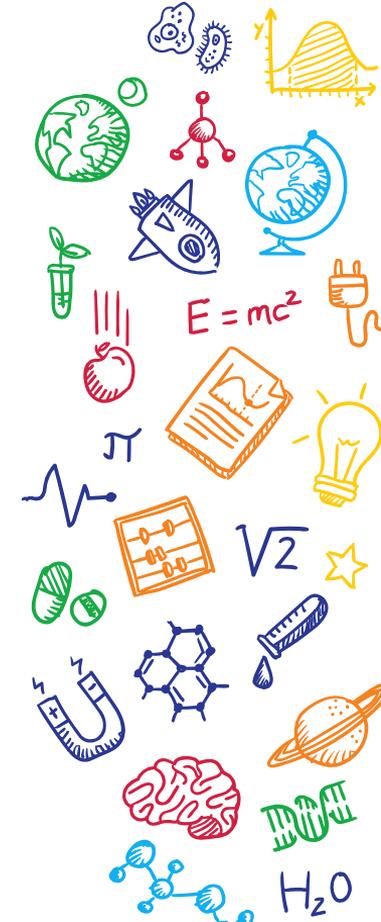
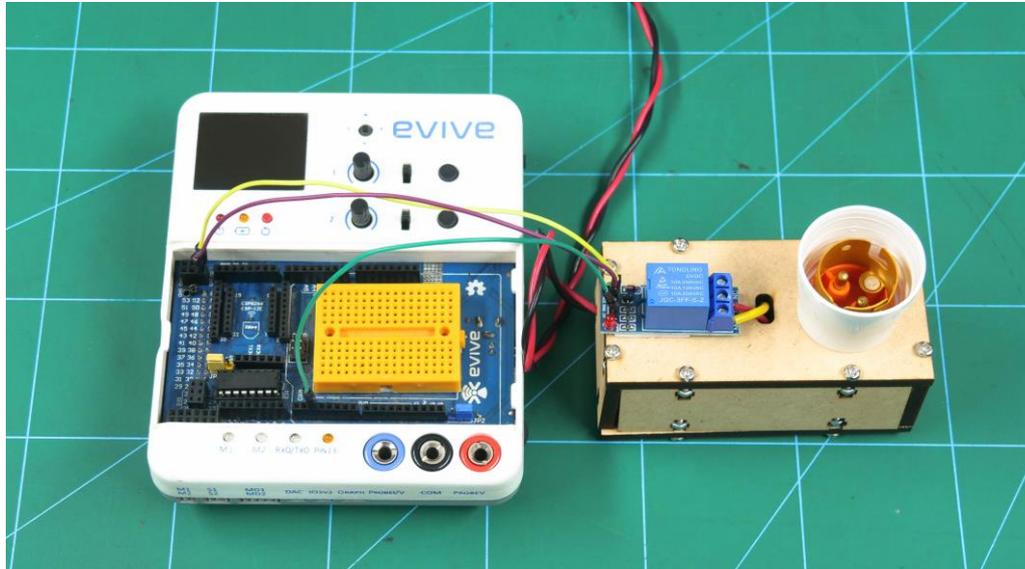
# Circuit Diagram

- VCC and GND of the relay are connected to 5V and GND of evive respectively and Signal pin is connected to digital pin 2 on evive.



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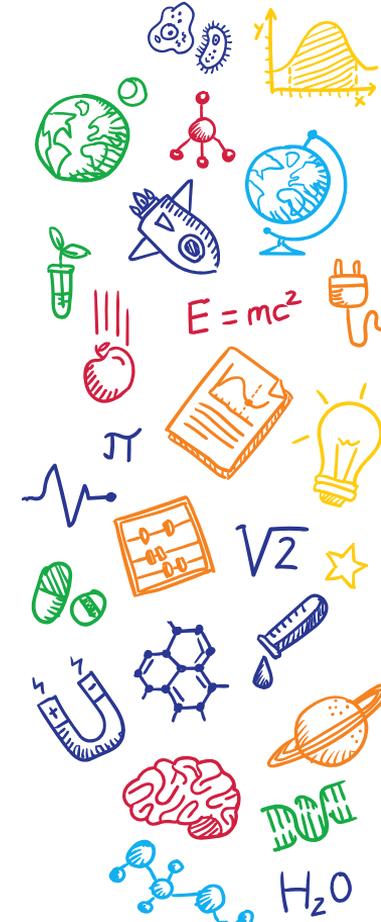
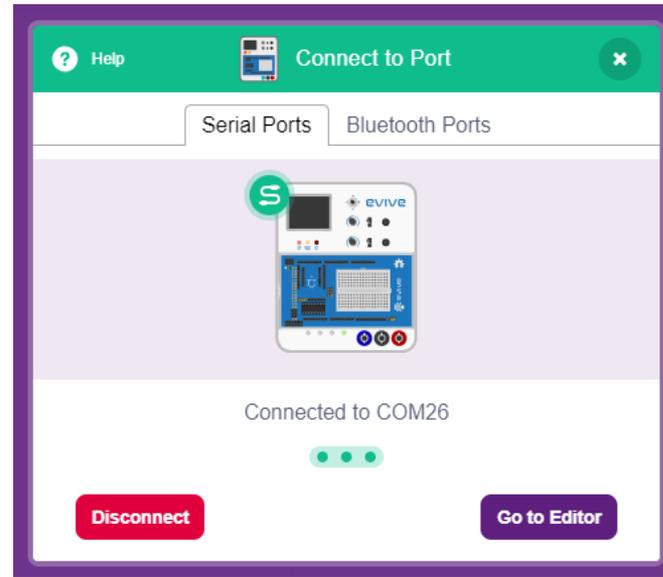
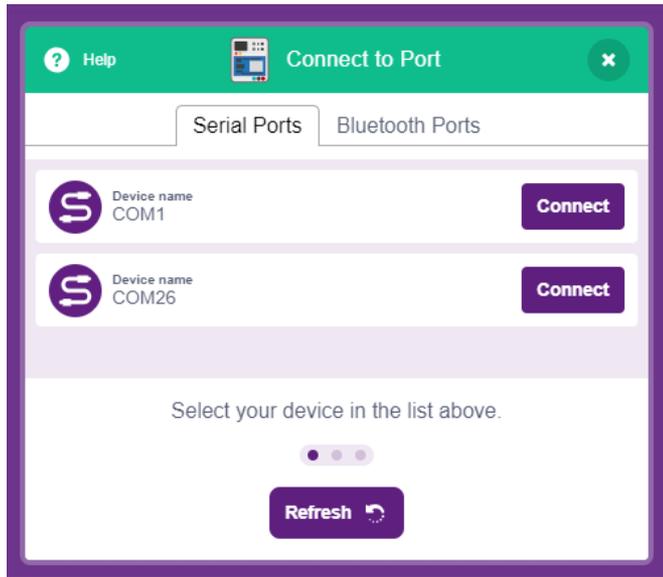






# Interfacing evive with PictoBlox

- Once you've selected the board, click on the Connect tab and connect the board.





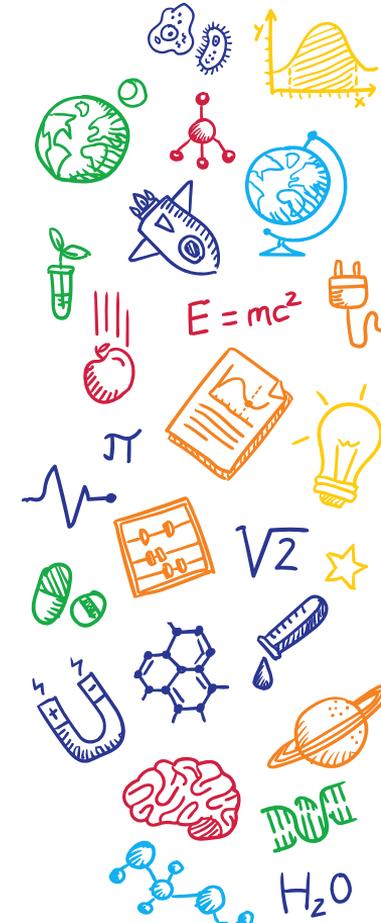
# PictoBlox Script

- Upload the code onto evive by clicking on the Upload Code Button:

```
Mode Stage Upload    Login
```

```
</>  Upload Code
```

```
1 #include <evive.h>
2 void _setup() {
3 }
4
5 void _loop() {
6 }
7
8 void setup() {
9   _setup();
10 }
11
12 void loop() {
13   _loop();
14 }
15
16
```





THANK  
YOU

