

Soil Moisture Sensor





What is Soil Moisture Sensor?

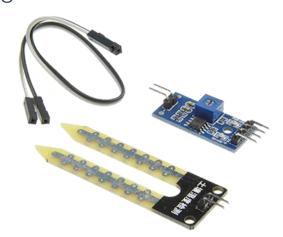




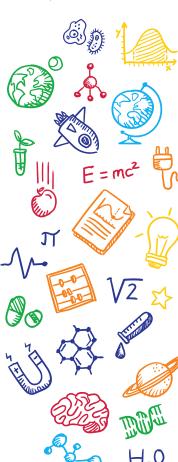


Soil Moisture Sensor

- **Soil moisture sensors** measure the volumetric water content in the soil or the moisture.
- The two probes of the moisture sensor are connected to LM293 comparator. This sensor uses the two probes to pass current through the soil, and then it reads that resistance to get the moisture level.





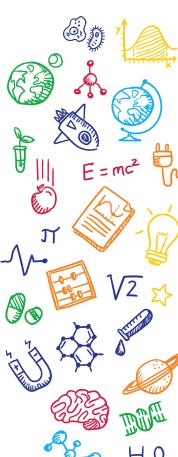


How does soil moisture sensor work?

- The Soil Moisture Sensor uses capacitance to measure the water content of soil. The output from the sensor is an analog voltage value between 0 to 5V, which is linearly proportional to the moisture percentage of the soil.
- Moisture Percentage = (Analog voltage * 100) / 1023 %









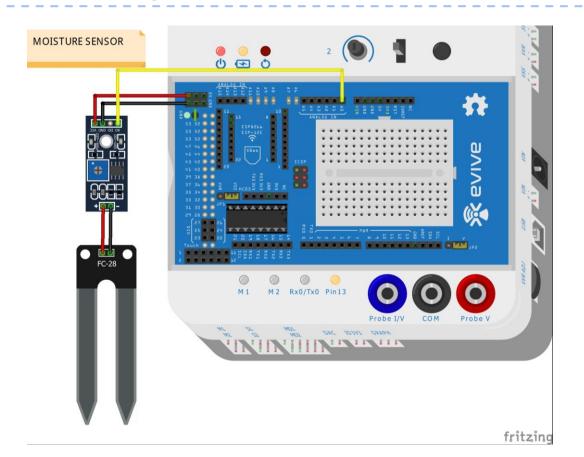
Activity Measuring Soil Moisture using evive





Circuit Diagram

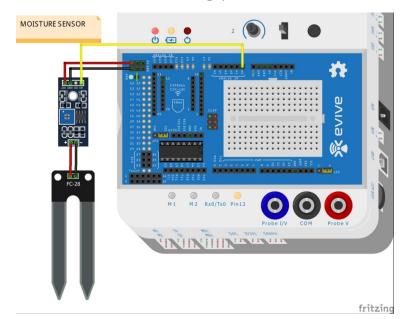






Circuit Diagram

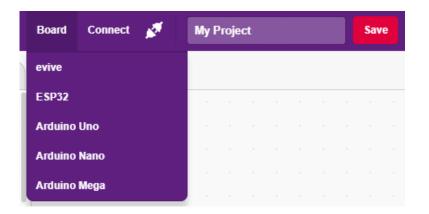
- STEMpedia
- + pin of the comparator is connected to the 5V pin of the evive board.
- - pin of the comparator is connected to GND pin of the evive board.
- A0 pin is connected to the analog pin of the evive board.



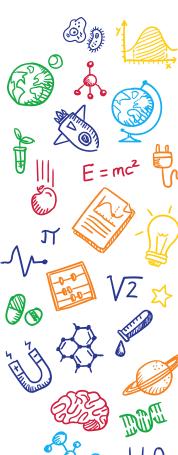


Interfacing evive with PictoBlox

- Connect evive to your laptop/PC and open PictoBlox.
- In PictoBlox, go to the menu and click on the Boards Select the evive.

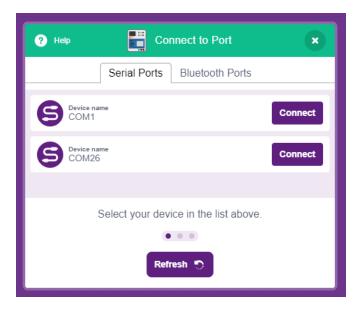


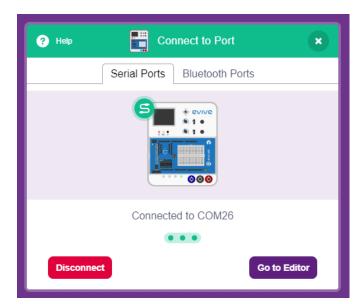




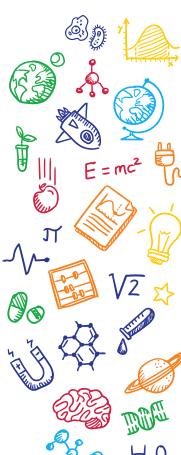
Interfacing evive with PictoBlox

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



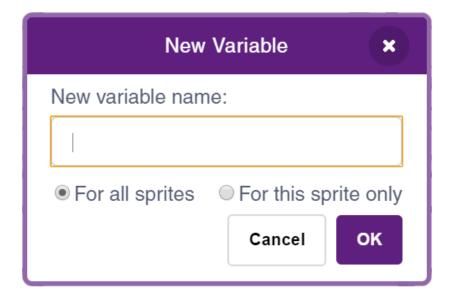




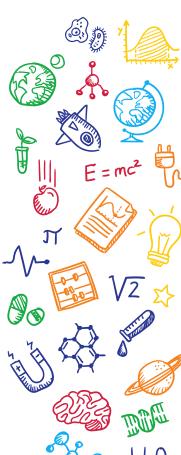


PictoBlox Script

 Make two variable to store the Sensor Value to store sensor reading and Moisture Percentage to store the moisture percentage:



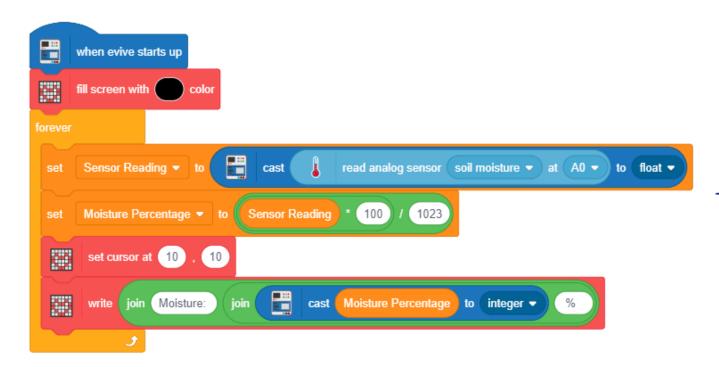




PictoBlox Script

STEMpedia

Create the following script using when evive starts up block:





PictoBlox Script



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

```
Upload
            Mode
                   Stage
        Upload Code
    #include <evive.h>
    void _setup() {
    void _loop() {
    void setup() {
      setup();
11
    void loop() {
     _loop();
14
15
16
```



Testing

• Put the sensor in the soil or water to test the reading.





