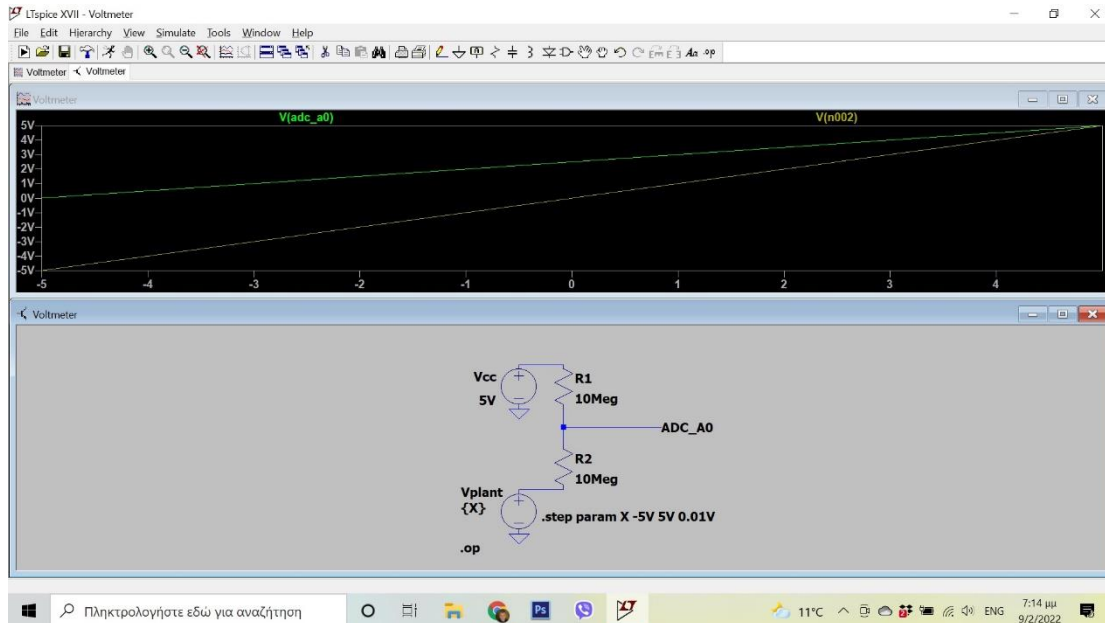(Picture 1)

Arduino_Voltmeter

(A voltmeter using the above voltage divider (Picture 1), connected to an Analog pin. This voltmeter is capable of measuring voltages ranging from -5 V to +5 V (see Picture 2 for connections and simulation)).
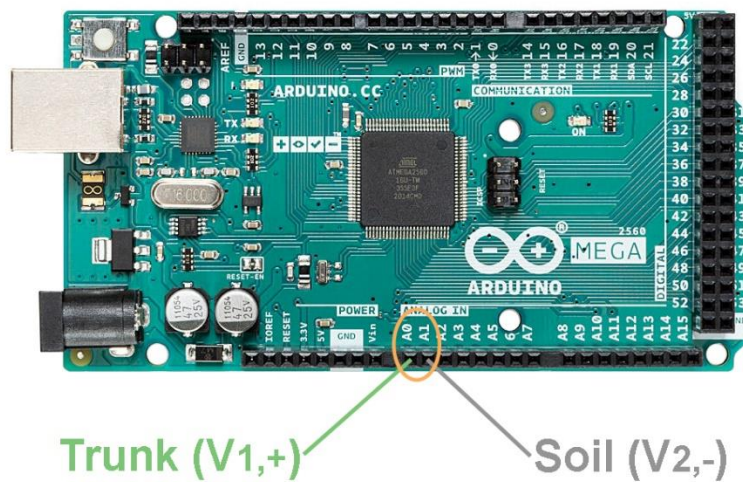
Adopt_A_Tree

(A data logger as described in "Building a Green Guard" video. Limitation in accuracy: Arduino uses its own ground point (GND) as a reference point for voltage measurement between the plant trunk and the soil while there is always a small voltage between this ground point (GND) and the soil not taken into account. Nevertheless, only voltage changes and not absolute values really matter to the scope of this teaching unit).

Adopt_A_Tree_nano

(A data logger as described in "Building a Green Guard" video with added Sleep mode for battery power saving)

(Picture 2)

Trunk (V1,+)   Soil (V2,-)

(Picture 3)

Voltmeter_Mega_2560

(A voltmeter using the built-in differential Analog to Digital Converter (ADC), in analog pins A0 and A1 (Picture 3), for improved voltage measurement accuracy).

Adopt_A_Tree_Mega_2560

(A data logger using the built-in differential Analog to Digital Converter (ADC) for better voltage measurement accuracy and added Sleep mode for battery power saving).

Adopt_A_Tree_Mega_2560_with_display

(A data logger using the built-in differential Analog to Digital Converter (ADC) for better voltage measurement accuracy with LCD 4 X 20 display and added Sleep mode for battery power saving. This unit is intended for indoors use only (classroom etc) and the 3D printing files for prototyping are also provided).