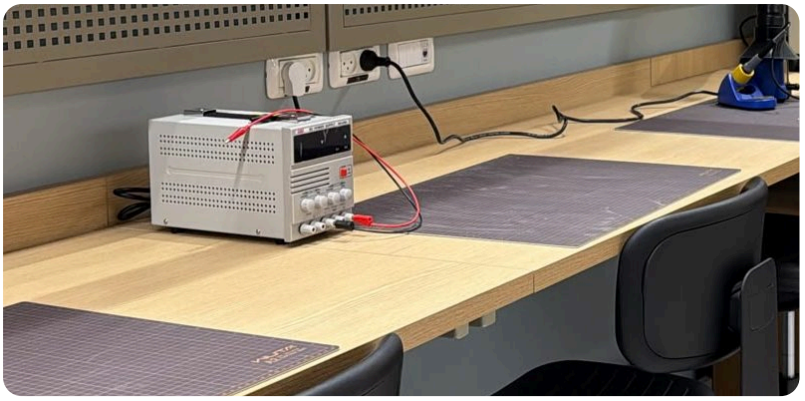
Bench power supplies and meters

Electronics bench



A bench power supply



Multimeters and scales

Power supply	Adjustable DC supply with two displays: volts and amps
Knobs	Voltage, coarse and fine. Current limit, coarse and fine
Terminals	Red is plus, black is minus, green is earth
Also here	Digital multimeters, compact scales and electronics kits, in the cabinets

Power a circuit

1. Switch the supply on with nothing connected. Turn the voltage knobs until the volts display shows what your circuit needs.
2. Set the current limit. Turn the current knobs right down, touch the two output leads together, and raise the current knob until the amps display shows your limit. Separate the leads.
3. Choose a limit a little above what your circuit should draw. If you don’t know, start at 0.1 A.
4. Switch the supply off. Connect red to the plus of your circuit and black to the minus.
5. Switch on and watch the amps display.
6. If the current jumps to your limit and the voltage drops, the supply is protecting your circuit. Switch off and look for a short or a part fitted backwards.
7. When you finish, switch off, disconnect and coil the leads.

Measure with a multimeter

To measure	Leads	Dial	How
DC voltage	Black in COM, red in V	V with a straight line	Probes across the part, circuit powered
Resistance, continuity	Black in COM, red in V/Ω	Ω or the beeper	Circuit switched off
Current	Black in COM, red in mA or A	A with a straight line	Meter in series with the circuit. Move the red lead back to V afterwards

- If you don’t know how large a value is, start on the highest range and work down.
- A reading of “OL” or “1” on the left means the value is beyond the range, or the circuit is open.

Weigh with the scales

1. Put the scale on a flat part of the bench and switch it on.

2. Put your container on it and press TARE to zero the display.
3. Add the part or material and read the weight.

When you finish

- Switch off the supply and the meters. Put meters, leads and scales back in the cabinet.
- Return kit parts to their boxes, so the next person finds a complete kit.