

Breadboards and Jump Wires

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Electronics & Prototyping

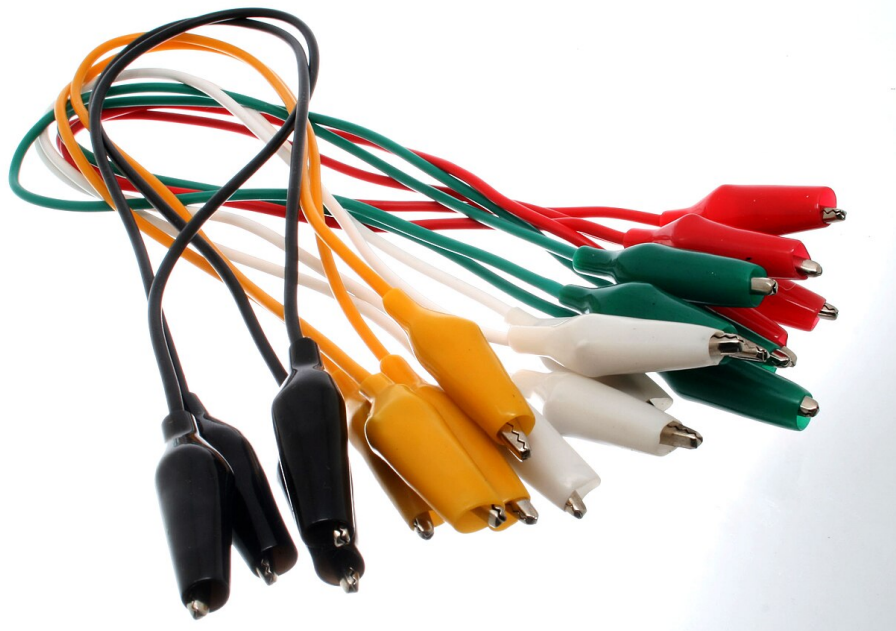


Photo: oomlout — CC BY-SA 2.0 — via Wikimedia Commons (Jumper_Wires_with_Crocodile_Clips.jpg)

Breadboards are solderless boards with rows of connected sockets, letting students build and modify circuits quickly by pushing component leads and jumper wires in. Jump wires are pre-cut or reeled connectors that link the rows, making breadboarding the fastest way to prototype electronics.

Key Features

- Sockets on 2.54 mm pitch, 400-830 tie points
- Power rails along both sides
- Colour-coded rows for easier tracing
- Jump wires from 10 cm to 30 cm lengths
- Solid-core wire for breadboard fit

Typical Uses in the Workshop

- Prototype circuits before soldering
- Teach circuit layout and tracing
- Test sensor and output wiring quickly
- Let students rebuild circuits in minutes

Safe Operation

1. Plug components across the centre channel
2. Run jump wires between rows and rails
3. Keep wiring colour-coded and neat
4. Check each connection against the diagram
5. Power up and test, then correct faults

SAFETY NOTES

- Never connect mains power to a breadboard
- Respect component polarity and current limits
- Remove power before rewiring
- Check wires are not shorting adjacent rows
- Store with all wires removed

Maintenance & Consumables

- Keep breadboards clean and dust-free
- Replace worn sockets and damaged boards
- Sort jump wires by length and colour
- Check for bent pins and loose inserts
- Store boards flat in trays

Specification & Buying Notes

Buy quality breadboards with labelled rows and a good set of coloured jump wires in several lengths. A jumper wire assortment kit and a few large boards cover whole classes.