

7-Segment LED Displays

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



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A 7-segment LED display shows digits and a few letters with seven bar segments plus a decimal point. Common as single digits, dual units and 4-digit clock modules, they teach multiplexing and remain the classic output for counters, timers and scores.

Key Features

- Common cathode and common anode variants
- Single, dual and 4-digit modules
- Red, green and blue colours
- Decimal point segments
- Drive directly or with TM1637 modules

Typical Uses in the Workshop

- Build scoreboards and counters
- Display timer and clock values
- Create dice and game displays
- Teach multiplexing and digit driving

Safe Operation

1. Identify common pin and segment mapping
2. Use current-limiting resistors on segments
3. Multiplex digits by cycling quickly
4. Use a driver chip module for 4-digit display
5. Test each segment with a known program

SAFETY NOTES

- Respect the LED current limits
- Check polarity of common pin before powering
- Keep displays away from water
- Mount with adequate airflow for brightness
- Store displays in antistatic foam

Maintenance & Consumables

- Check solder joints on pins
- Verify segment drive with a tester
- Keep spare displays in stock
- Clean pins with a cloth
- Retest multiplex timing if digits flicker

Specification & Buying Notes

TM1637 4-digit modules are the easiest for clocks and scores. Bare 7-segment displays plus a decoder chip teach the basics. Buy a class pack plus spares.