

Robotics Platforms

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Robotics & Mechatronics



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Robotics platforms are chassis, wheel and motor kits built for learning robots. They range from simple two-wheel car kits with Arduino to VEX and LEGO-style systems with metal frames, and give students a physical base for sensors, motors and control programming.

Key Features

- Aluminium or plastic chassis with wheel mounts
- DC gearmotors or servos with wheels and tyres
- Battery box or rechargeable pack mounting
- Sensor mounts for ultrasonic, line and light sensors
- Compatible with Arduino, micro:bit or dedicated controllers

Typical Uses in the Workshop

- Build line-following and obstacle-avoiding robots
- Race sumo bots and maze solvers
- Teach PID control with encoder feedback
- Practise assembly, wiring and fault finding

Safe Operation

1. Assemble the chassis with the correct screwdriver sizes
2. Wire motors to the driver board with correct polarity
3. Mount sensors rigidly and check their alignment
4. Upload the test program and calibrate sensor values
5. Tune speeds and thresholds for the course

SAFETY NOTES

- Remove batteries when not in use
- Keep fingers clear of gears and wheels when powered
- Tie back long hair near spinning parts
- Keep robots on the bench while testing code
- Store chassis parts in labelled boxes

Maintenance & Consumables

- Check wheels, gearboxes and screws for wear
- Clean sensor lenses with a soft cloth
- Recharge or replace batteries before sessions
- Keep spare motors and wheels in stock
- Re-tighten screws after heavy use

Specification & Buying Notes

Choose platforms with a strong community and spares availability. Kits with metal chassis, encoder motors and a good motor driver teach more than plastic toys. Check that the controller hardware matches the school's existing kits.