Practical sessions equipment list.

One each of the following spaces:

Specific heat capacity:

1 kg copper, iron and aluminium metal blocks, each with two holes – one for the heater and one for the thermometer thermometer , pipette to put water in the thermometer hole , 30 W heater , 12 V power supply , insulation to wrap around the blocks , ammeter and voltmeter , 4 mm leads , stopwatch or stopclock , balance (capable of measuring more than 1 kg) to determine the mass of the blocks , heatproof mat.

Resistance

, a battery or suitable power supply , ammeter , voltmeter , crocodile clips , resistance wire , metre rule , connecting leads , wire-wound resistors, eg 10 Ω.

I-V Characteristics

ammeter , milliammeter (for working with the diode) , voltmeter , 12 V, 24 W filament lamp (eg a ray box lamp) , Resistor (eg 100 Ω, 1 W) , diode and protective resistor (eg 10 Ω) , variable resistor (eg 10 Ω, 5 A) , connecting leads.

Density

, various regular shaped objects , various irregular shaped objects , a suitable liquid (eg sugar solution) , a 30 cm ruler marked off in millimetres , a digital balance , a displacement can , a variety of measuring cylinders , two 250 cm3 beakers , paper towels

Force and extension

, a suitable spring capable of extending more than 1 cm under a load of 1 N with loops at each end , metre ruler , suitable pointer (eg splint and tape) , weight stack appropriate for the spring (eg 10 N in steps of 1 N) , clamp stand , two clamps and bosses , G-clamp or weight to prevent the apparatus tipping over the edge.

Acceleration

a 1 m ruler , toy car , bench pulley, string and small weight stack (eg 1 N in steps of 0.2 N) , two clamp stands, clamps and bosses , Blu-Tac or similar to attach weights to the car

Waves

Activity 1 , ripple tank and accessories , suitable low-voltage supply , metre rule.

Activity 2 , vibration generator , 5 or 6 watt power signal generator , string or elasticated cord , set of 100 g masses and hanger , set of 10 g masses and hanger , wooden bridge , pulley on a clamp.

Light

ray box and suitable power supply , collimating slit and lens , rectangular transparent blocks – preferably of different materials eg glass, perspex, plastic , 30 cm ruler , protractor , sheets of plain A3 paper.

Radiation and absorption

, Leslie cube , kettle , infrared detector , heatproof mat.

Density

Materials of different densities & rulers

Motion down a ramp

* Trolleys, ramps, wooden blocks to prop up the ramps, metre rule, stop watch, data logger, card for top of trolley, pulley, mass hangers and slotted masses, string, light gates, ruler