

The 5 common practical assessment criteria (CPAC) are:

1. Follows written procedures
2. Applies investigative approaches and methods when using instruments and equipment
3. Safely uses a range of practical equipment and materials
4. Makes and records observations
5. Researches, references and reports

2, 3 and 4 will likely be applicable for all practical work but 1 and 5 will depend on the amount of guidance given to the students.

Early on, students are likely to be given written procedures to follow, and as the students become more independent, 5 will be covered more often.

The specific skills for physics are given below. Different awarding bodies refer to them with different numbers and letters so an arbitrary number is used here. The practicals referred to are from practicalalevelphysics.thomascarlpien.co.uk.

Skill	Arbitrary skill number	Practical
Use appropriate analogue apparatus to record a range of measurements(to include length / distance, temperature, pressure, force, angles, volume) and to interpolate between scale markings	1	Gas Laws (Charles'), Inverse Square law for gamma rays, Resistivity, Young's Modulus, Single and double slit diffraction with a laser. measuring g by freefall, standing microwaves, viscosity
Use appropriate digital instruments, including electrical multimeters, to obtain a range of measurements (to include time, current, voltage resistance, mass)	2	Capacitor discharge (manual), Finding Plank using LEDs, Internal resistance, Resistivity, standing microwaves, viscosity
Use methods to increase accuracy of measurements, such as timing over multiple oscillations, or use a fiduciary marker, set square or plumb line	3	Inverse Square law for gamma rays, Resistivity, Young's Modulus, Single and double slit diffraction with a laser, standing microwaves, viscosity

Use stopwatch or light gates for timing	4	Measurement of g by freefall method, viscosity
Use callipers and micrometers for small distances, using digital or vernier scales	5	Resistivity, Young's Modulus, measuring g by freefall, viscosity
Correctly construct circuits from circuit diagrams using DC power supplies, cells, and a range of circuit components, including those where polarity is important	6	Capacitor discharge, Finding Plank using LEDs, Internal resistance, Resistivity
Design, construct and check circuits using DC power supplies, cells, and a range of circuit components	7	Capacitor discharge (if students design),
Use signal generator and oscilloscope, including volts per division and time base	8	Possibly standing microwaves
Generate and measure waves, using microphone and loudspeaker, or ripple tank, or vibration transducer, or microwave / radio source	9	Standing microwaves
Use laser or light source to investigate characteristics of light, including interference and diffraction	10	Single and double slit diffraction with a laser
Use ICT as computer modelling, or data logger with a variety of sensors to collect data, or use of software to process data.	11	Capacitor discharge (data logging),
Use ionising radiation, including detectors	12	Inverse Square law for gamma rays

Practical	Skills covered (numbers match above)
Capacitor discharge	2, 6 if circuit given or 7 if students design, 2 if measuring manually or 11 if data logging
Finding Plank using LEDs	2, 6
Gas Laws (Charles')	1,
Internal resistance	2, 6,
Inverse Square law for gamma rays	1, 3, 12
Resistivity	1, 2, 3, 5, 6,
Young's Modulus	1, 3, 5,
Single and double slit diffraction with a laser	1, 3, 10

Measuring g by freefall method	1, 4, 5
Viscosity	1, 2, 8, 9
Standing microwaves	1, 2, 3, 5

Strand 11 can be covered with any practical if data is manipulated using Excel for example.