



CAROUSEL

LEARNING

Lesson phase codes

- E** Explanation
- C** Check for understanding
- P** Practice task

Welcome to A-Level Physics

Date: Wednesday, 13 August 2025

Last lesson we...Were registered.

Next lesson we will...Move to a less fun subject.

To give an overview of the A-Level Physics course.

To familiarise ourselves with some KS% Physics equipment.

To evaluate the benefits of taking A-Level physics.

Year 12 (AS Physics)

Quarks and Leptons

Waves

Optics

Matter and Radiation

Quantum Phenomena

Stationary Waves [RP1]

Lasers [RP2]

Force and Momentum

Determination of g by free-fall [RP3]

Forces in Equilibrium

Materials

Newton's Laws of Motion

On the Move

Young's Modulus [RP4]

Work, Energy and Power

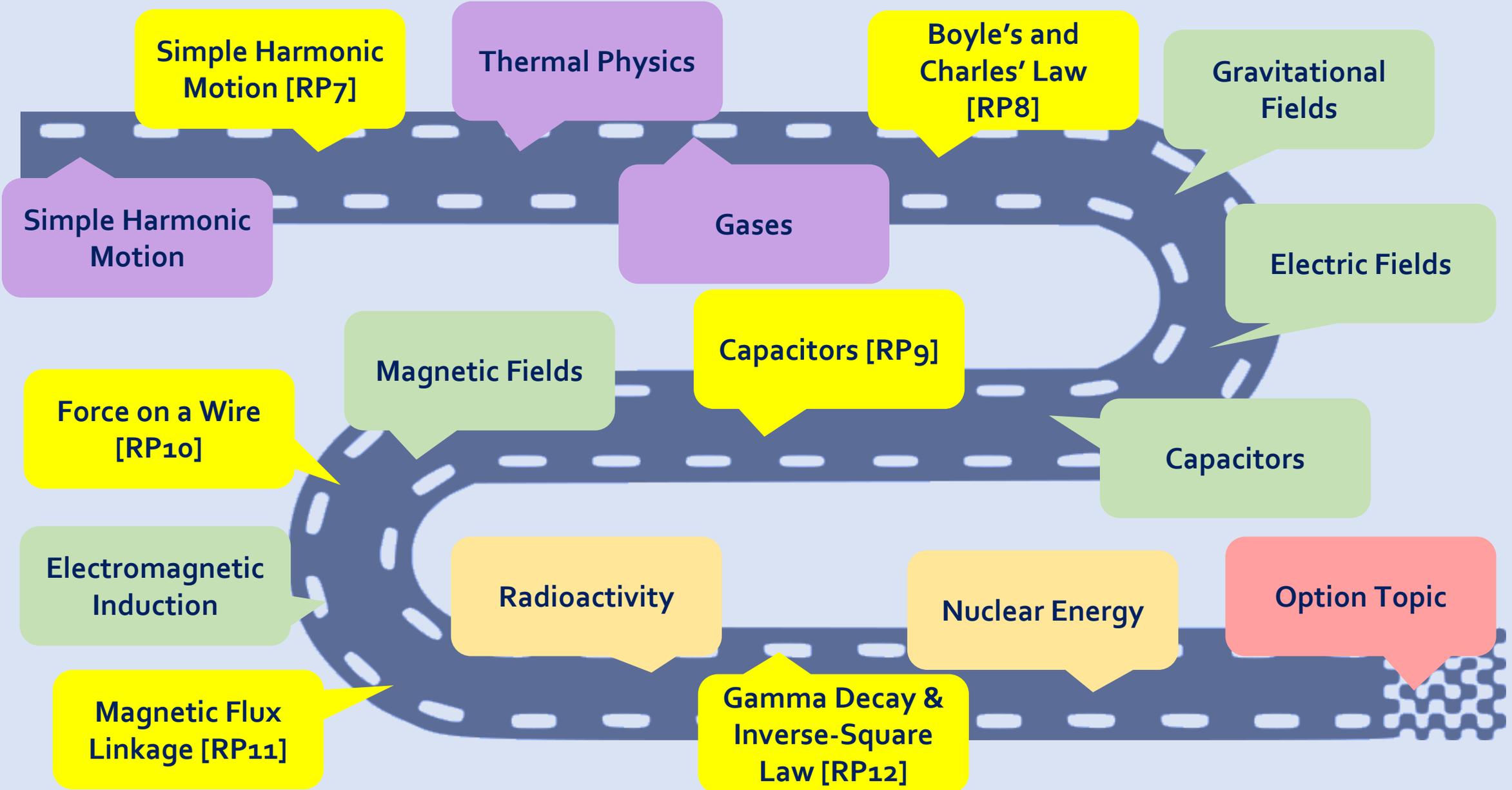
DC Circuits

Electric Current

Resistivity of a Wire [RP5]

EMF and Internal Resistance [RP6]

Year 13 (A-Level Physics)





12 Required Practicals (6 per Year)

Year 12:

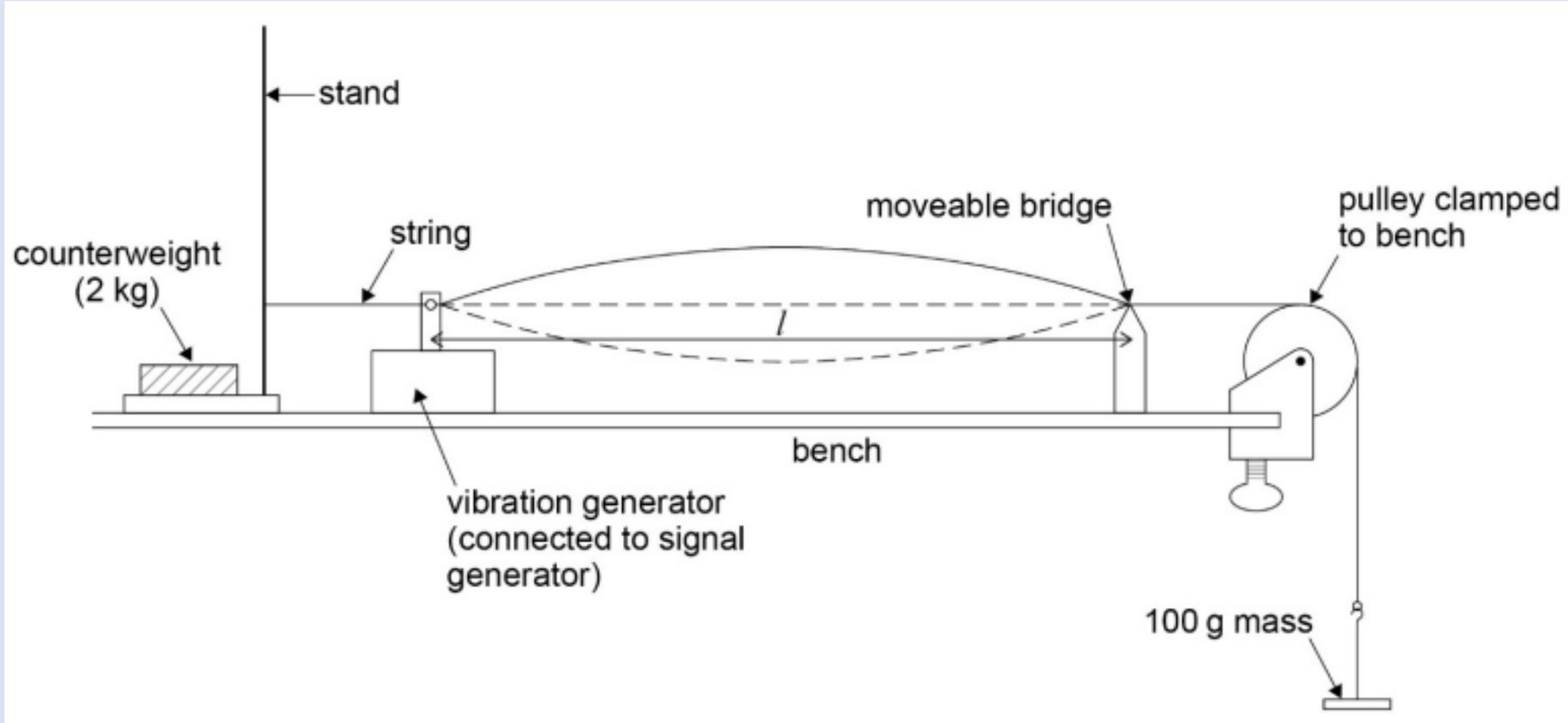


1. *Investigation into the variation of the frequency of stationary waves on a string with length, tension and mass per unit length of the string.*
2. *Investigation of interference effects to include the Young's slit experiment and interference by a diffraction grating.*
3. *Determination of g by a free-fall method.*
4. *Determination of the Young modulus by a simple method.*
5. *Determination of resistivity of a wire using a micrometre, ammeter and voltmeter.*
6. *Investigation of the emf and internal resistance of electric cells and batteries by measuring the variation of the terminal pd of the cell with current in it.*

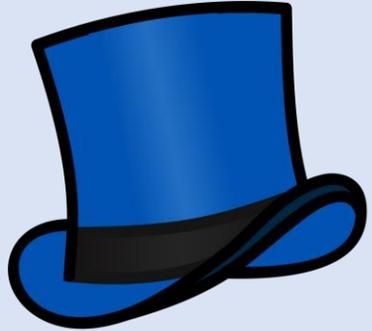
RP1: Stationary Waves on a String



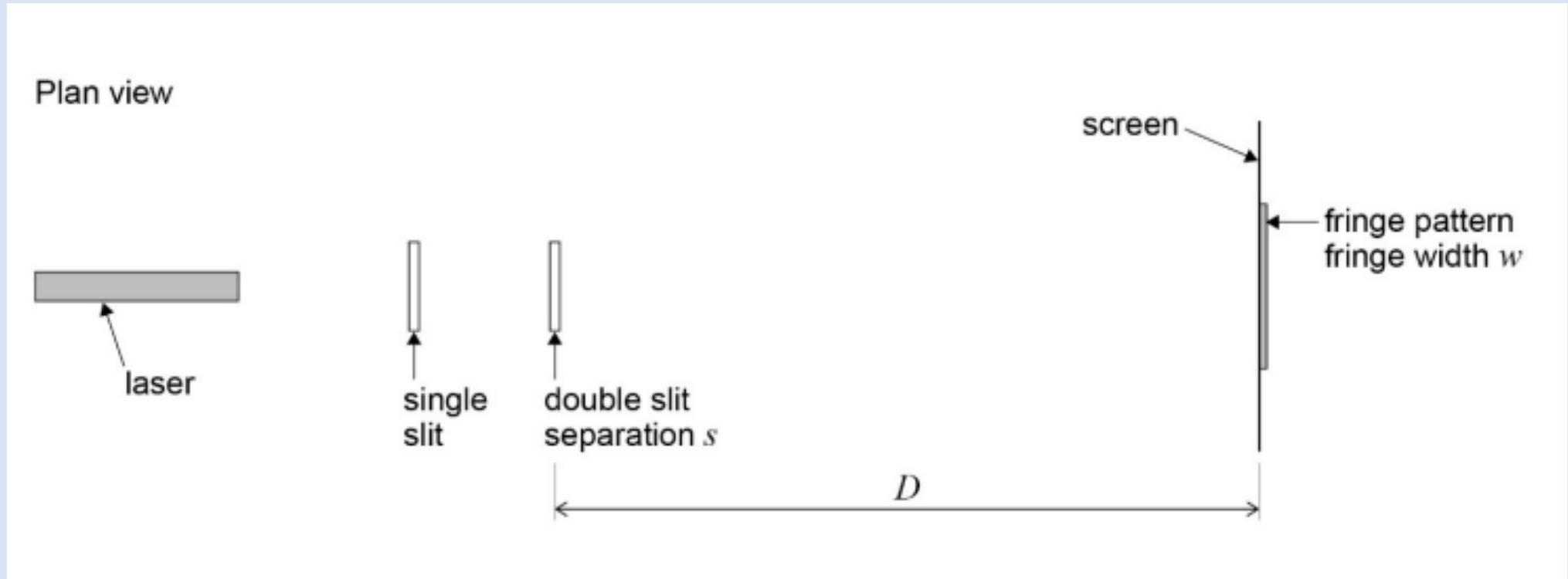
13. The Question



RP2: Young's Double Slit & Diffraction Grating



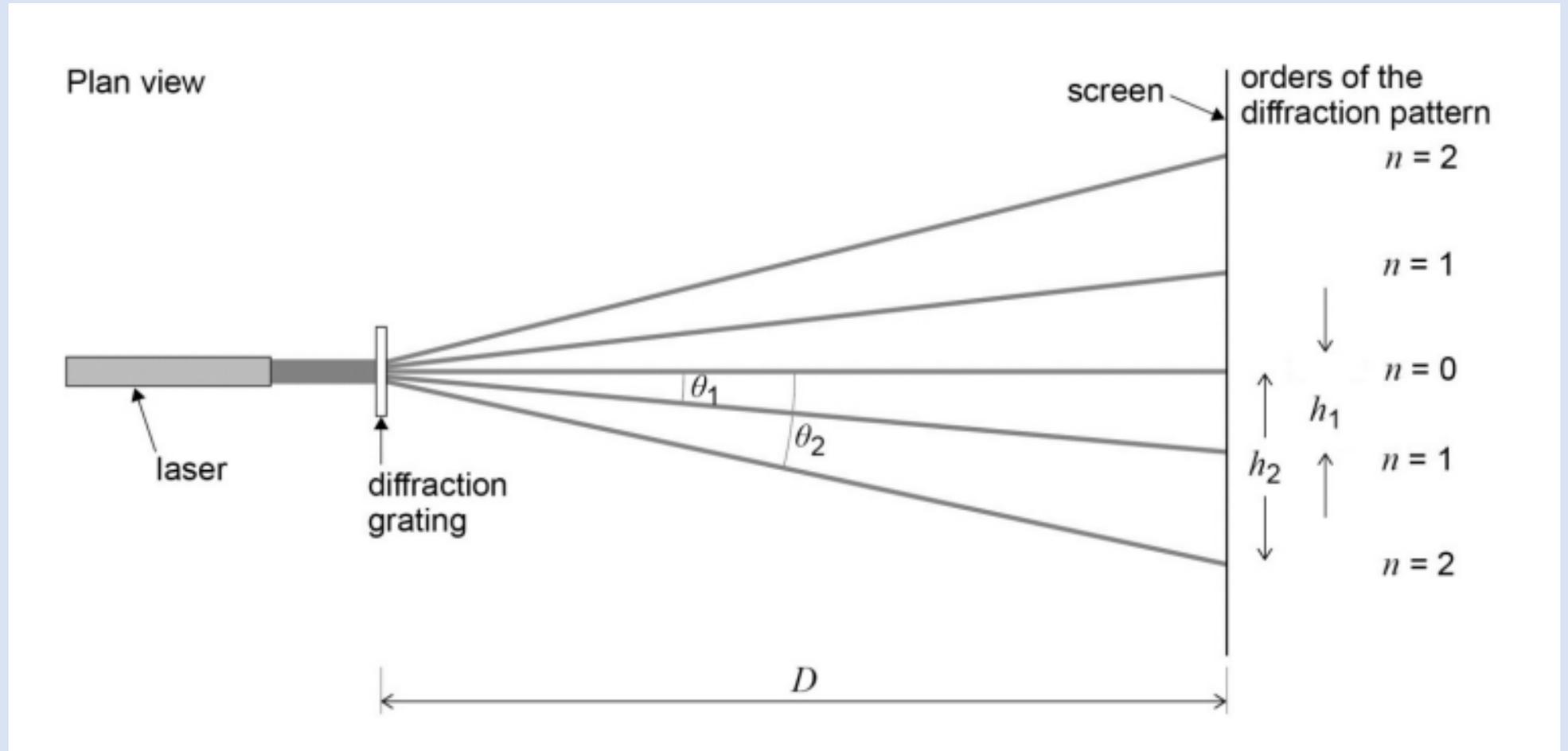
13. The Question



RP2: Young's Double Slit & Diffraction Grating



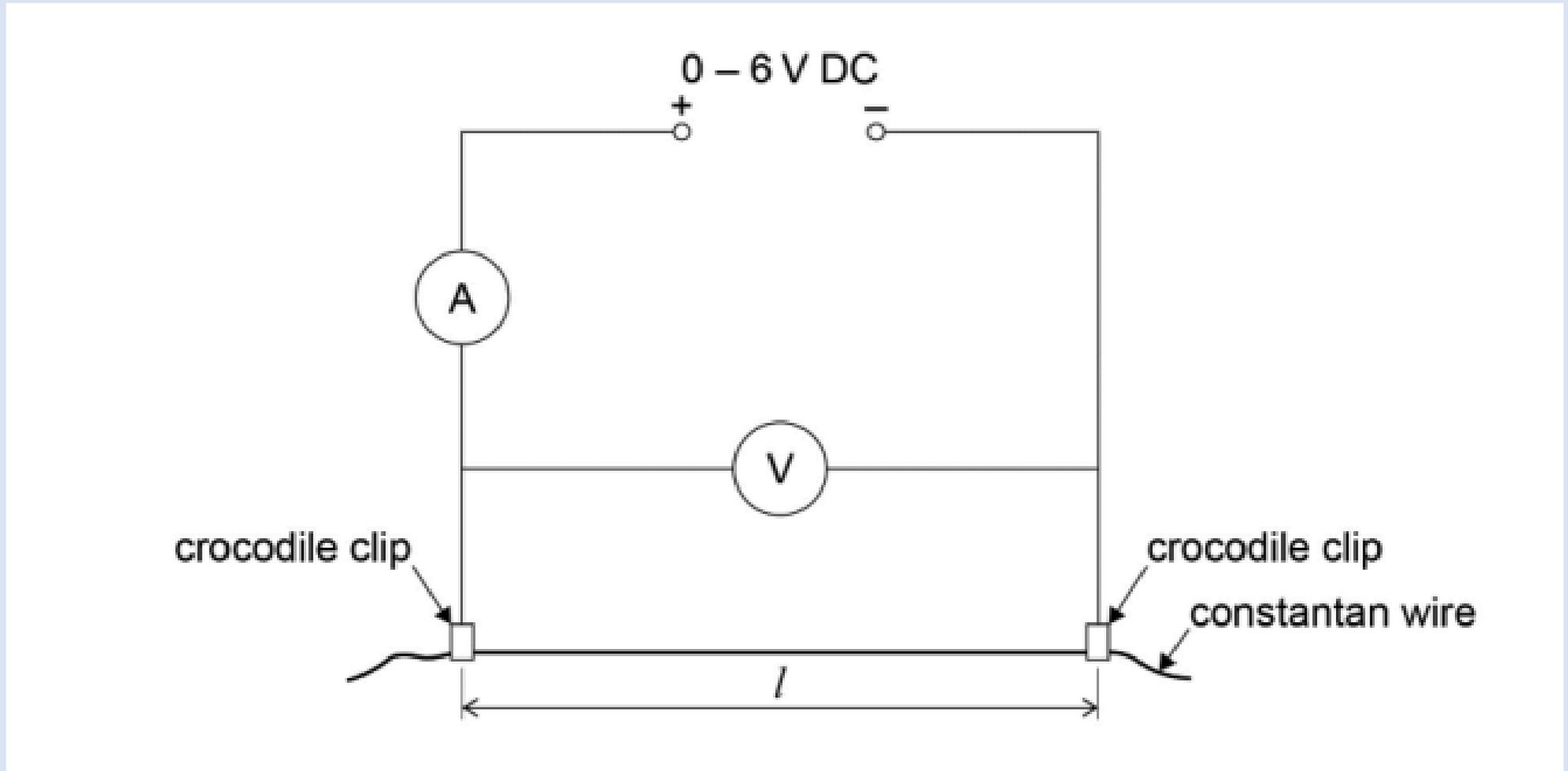
13. The Question



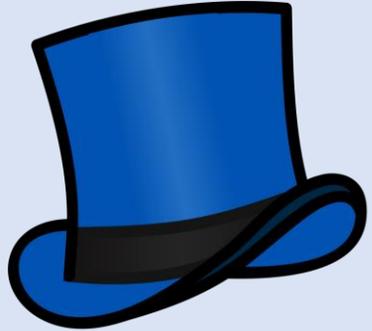
RP5: The Resistivity of a Wire



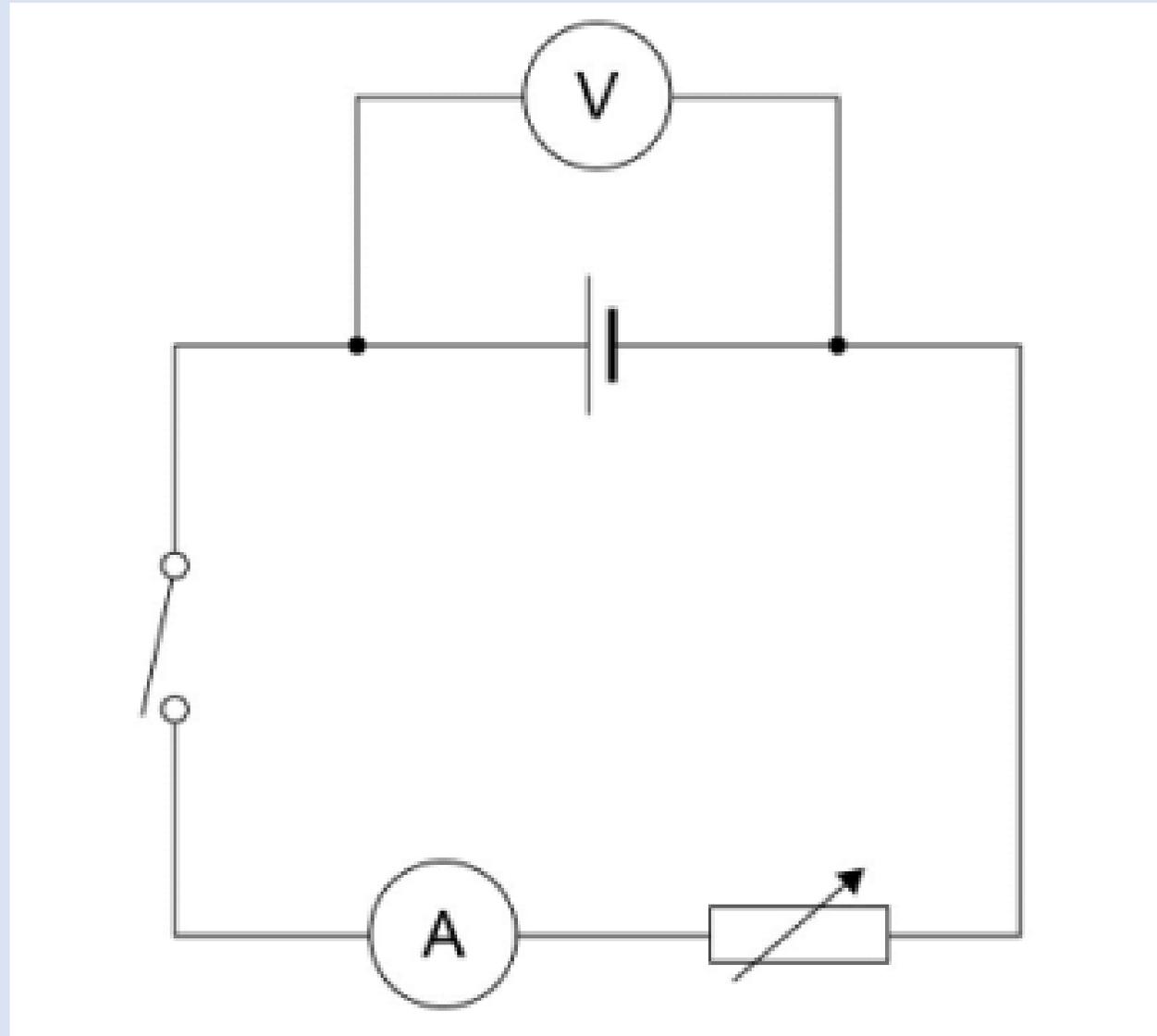
13. The Question



RP6: EMF and Internal Resistance



13. The Question



Required Practicals Cont.



12 Required Practicals (6 per Year)

Year 13:



7. *Investigation into simple harmonic motion using a mass-spring system and simple pendulum.*
8. *Investigation of Boyle's (for constant temperature) and Charles' (for constant pressure) law for a gas.*
9. *Investigation of the charge and discharge of capacitors.*
10. *Investigate how the force on a wire varies with flux density, current and length of wire, using a top pan balance.*
11. *Investigate, using a search coil and oscilloscope, the effect on magnetic flux linkage of varying the angle between a search coil and magnetic field direction.*
12. *Investigation of the inverse-square law for gamma radiation.*

It's a Great Choice!



- Earnings increase by 27.4% by taking 2 STEM subjects at A-Level, rather than just GCSE (London Economics, 2015).
 - For physics in particular, sectors include:
 - Actuary
 - Applications developer
 - Clinical technologist
 - Data analyst
 - Nuclear engineer
 - Operational researcher
 - Software engineer
 - Banking/finance
 - Aerospace/piloting
- The list goes on....



A question to think about:

Can space be infinite if the CMB doesn't have an infinite wavelength?

