



SP15 Forces and matter

Personal learning checklist | 1 of 2

GCSE Edexcel Separate Sciences | Physics Paper 2

Name _____ Class _____ Date _____

Tick one box for each statement. Red: need help. Amber: partly confident.
Green: can do independently.

I can	Red	Amber	Green
Deformation			
Explain why deformation requires interacting forces and distinguish elastic from permanent deformation.	☐	☐	☐
Distinguish extension from total length and elastic limit from limit of proportionality.	☐	☐	☐
Hooke's law			
Use and rearrange the linear spring equation with correct force, extension and spring-constant units.	☐	☐	☐
Explain stiffness and proportional force-extension relationships and convert hanging masses to load forces.	☐	☐	☐
Graphs and energy			
Interpret force-extension graphs, calculate linear gradients and recognise axis-order effects and proportionality limits.	☐	☐	☐
Distinguish non-linear elastic behaviour from inelastic deformation using unloading evidence.	☐	☐	☐
Calculate elastic energy using squared extension and explain the linear-range assumption.	☐	☐	☐
Determine work from force-extension area and explain why linear loading gives a triangle rather than final-force times extension.	☐	☐	☐

My next revision priority _____



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Spring practical			
Describe controlled spring loading and unloading with original-length readings, stable measurements, repeats and safe support.	☐	☐	☐
Use best-fit graph gradients and areas to determine stiffness and work, accounting for limits and measurement uncertainty.	☐	☐	☐
Fluid pressure			
Calculate pressure, normal force and area with SI units.	☐	☐	☐
Explain atmospheric pressure changes with altitude and normal fluid-pressure forces.	☐	☐	☐
Explain liquid pressure changes with depth and density (Higher).	☐	☐	☐
Calculate liquid-column pressure and distinguish gauge from absolute pressure (Higher).	☐	☐	☐
Upthrust and floating			
Explain upthrust from pressure differences and calculate it from displaced fluid (Higher).	☐	☐	☐
Predict floating, rising and sinking using weight, upthrust and average density (Higher).	☐	☐	☐
Explain how fluid density and immersion affect upthrust, including deeper fully submerged objects (Higher).	☐	☐	☐

My next revision priority _____