

AQA Separate Sciences – Required Practicals Student Self-Quiz

This self-quiz combines recall and exam-style questions for each required practical in AQA GCSE Separate Sciences. Use it to test your understanding of methods, variables, and data analysis across Biology, Chemistry and Physics.

Biology

- Microscopy – What is the formula for magnification, and how do you ensure a clear image?
- Microbiology – Why must aseptic technique be used when culturing microorganisms?
- Osmosis in potatoes – What is the independent variable, and how is osmosis identified?
- Enzymes – Describe how temperature affects enzyme activity and explain why.
- Photosynthesis – How does light intensity affect photosynthesis? State the equation used.
- **Reaction times – What factors can affect human reaction time and how are they controlled?**
- **Field investigations – How is a quadrat used to estimate population size?**
- **Decay – Why does temperature affect decay rate?**
- **Food tests – Which reagents are used to test for starch, sugars, proteins and lipids?**
- **Plant responses – How can you show that shoots grow towards light (phototropism)?**

Chemistry

- Making salts – What steps are taken to produce a pure, dry salt from an acid and an insoluble base?
- Titrations – How do you know when neutralisation is complete? What measurements are needed?
- Electrolysis – What determines the product formed at each electrode?
- Temperature changes – How do you measure an energy change safely and accurately?
- **Rates of reaction – How could you investigate the effect of concentration on rate?**
- **Chromatography – How do you calculate an R_f value? What affects its accuracy?**
- **Water purification – Which methods remove insoluble solids, salts and bacteria?**
- **Chemical cells – How does the reactivity of metals affect the voltage of a cell?**

⚡ Physics

- Specific heat capacity – How do you calculate specific heat capacity from experimental data?
- Thermal insulation – What factors affect the rate of cooling of a material?
- Resistance of a wire – How does wire length affect resistance and why?
- I-V characteristics – How does a diode's graph differ from a resistor's?
- Density – How would you find the density of an irregular solid?
- **Force and extension – What is Hooke's Law and when does it stop being valid?**
- **Acceleration – Describe how the trolley practical tests Newton's second law ($F=ma$).**
- **Waves – How do you measure wave speed using a ripple tank?**
- **Light – How do you find the angle of refraction and what does it show?**
- **Radiation and absorption – Which surfaces absorb and emit heat radiation best, and how can this be tested?**

Use this quiz to check your understanding of key practical skills and how to apply them in unfamiliar situations.