

# Examiners' Report/ Principal Examiner Feedback

March 2011

GCSE

360Science

GCSE Science  
Multiple Choice Paper P1a (5009/01)

GCSE Physics  
Multiple Choice Paper P1a (5045/01)

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## 5009 Science/ 5045 Physics (P1a) Examiners' Report

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### General Comments

Statistical analysis shows that both tiers performed as intended giving mean marks close to the targeted value.

There were very few instances of possible misinterpretation of questions by any significant proportion of the entry and most questions appeared to discriminate well across the ability range.

### Foundation Tier

The performance of candidates indicated that they had been well prepared by centres for the Foundation tier paper. In 13 out of the first 16 questions over 50% of candidates identified the correct response. Candidates performed well on questions analysing bar charts and tables. They also seemed secure on sources of renewable energy and the use of an LDR to sense changes in light level.

However, only 48% recognised a graph of direct current and only 12% realised that a battery with a capacity of 2 Ah could supply a current of 1 A for 2 hours. Over 50% thought it could supply 2 A for 2 hours.

The common questions discriminated well between the Foundation and Higher tier candidates, and in the respective tiers most discriminated well between strong and weak candidates.

Almost 60% of Foundation tier candidates recognised the charge carrier in a wire as negatively charged electrons and knew that an ammeter should be connected in series with a component to measure the current in the component.

However, a disappointing 70% thought that the largest current would be in the circuit with the largest resistance and only 22% recalled that the earth connects the metal case of an appliance to earth.

### Higher Tier

Candidates were well prepared for the common questions with more than 70% of candidates choosing the correct response in five out of the eight common questions.

Only 49% recognised that the largest current would be in the circuit with the lowest resistance and only 40% recalled that the earth wire connects the metal case of an appliance to earth.

In the Higher tier-only questions, candidates performed well in the questions on batteries but, almost 50% of candidates forgot to convert kW to W when calculating the current in a shower heater.

Almost 70% of candidates thought that the purpose of a fuse in an appliance with no earth wire was to prevent shock to the user.

Candidates performed well on questions on RCCBs but less than 50% could calculate the time taken for an oven to use £3 worth of electrical energy.

Over 50% of candidates thought that adding a resistor in parallel with other resistors would decrease the current from the power supply.

Candidates produced good responses to graphical questions on resistance and almost 70% knew how to connect an ammeter and a voltmeter in a circuit to measure resistance.

## **Grade Boundaries**

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