

# Examiners' Report/ Principal Examiner Feedback

June 2010

GCSE

360Science

GCSE Science  
Multiple Choice Paper C1b (5008)

GCSE Chemistry  
Multiple Choice Paper C1b (5036)

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5008 Science/ 5036 Chemistry Examiners' Report  
Multiple Choice paper C1b  
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### Foundation tier

Knowledge of the Earth's atmosphere was weak. In question 3, only 13% of candidates chose the correct answer with 41% thinking that 20% of the Earth's atmosphere is carbon dioxide. In question 4, 41% thought that the formula of carbon dioxide is  $\text{CO}^2$ . Only 33% knew that pure water can be obtained from sea water by distillation with 43% choosing filtration. In question 9 only 36% recognised a smart material with 37% choosing universal indicator. Only 35% of candidates knew that the unreactive gas used in packaging is nitrogen, 27% chose hydrogen, 26% air and 12% carbon monoxide. In question 15 whilst 58% of candidates chose the correct answer, distillation was a strong distracter chosen by 22%. Only 41% knew that common salt is sodium chloride with 33% choosing sodium carbonate. The use of hydrogen was not known by many with only 17% choosing the correct answer for question 18, 44% chose 'as a solvent' and 26% 'in the sterilisation of milk'. In question 22 30% knew that growing plants to produce bio-ethanol removes carbon dioxide from the atmosphere with 36% believing that complete combustion of bio-ethanol does not produce carbon dioxide.

### Higher tier

As would be expected higher tier candidates performed better than foundation candidates on questions 17 to 24 but some of the weaknesses indicated above were still present especially in questions 18 (41% correct) and 22 (54% correct). Whilst 50% of candidates knew the correct answer to question 25, 26% thought that nanoparticles are intelligent and 20% that they can make copies of themselves. Only 45% knew the correct size of a nanoparticle with 25% believing that nanoparticles are smaller than atoms and 25% that they are smaller than molecules of oxygen but larger than atoms of titanium. Whilst 84% of candidates knew that emulsifiers have a hydrophilic part and a hydrophobic part, 32% of these candidates thought that the hydrophilic part is attracted to oil. Only 27% of candidates chose the correct answer to question 31 with 67% failing to appreciate the need for water in fermentation. In question 32 only 27% chose the correct answer with all three distracters being popular. In question 33 only 23% knew that crude oil does not enter the fractionating column as a liquid with 40% thinking that the statement 'each fraction contains more than one compound' was incorrect. In question 35 knowledge of the relative boiling points and viscosities of fractions was poor with only 37% choosing the correct answer. In question 37 whilst 78% knew that 'hydrogen can be produced from water but large amounts of energy are required', half of these candidates believed that 'waste products are not released into the environment' when using hydrogen as a fuel. As usual chemical equations proved to be difficult with only 41% choosing the correct answer for question 39.



## Grade Boundaries - June 2010

### Multiple Choice Papers - GCSE Science

#### Raw Mark Grade Boundaries

5005/5025	Max mark	A*	A	B	C	D	E	F	G
H	24	20	18	15	12	9	7		
F	24				16	13	10	7	4

5006/5026	Max mark	A*	A	B	C	D	E	F	G
H	24	20	17	14	12	9	7		
F	24				15	13	11	9	7

5007/5035	Max mark	A*	A	B	C	D	E	F	G
H	24	20	17	14	11	8	6		
F	24				16	13	10	8	6

5008/5036	Max mark	A*	A	B	C	D	E	F	G
H	24	19	17	14	12	9	7		
F	24				16	13	10	8	6

5009/5045	Max mark	A*	A	B	C	D	E	F	G
H	24	16	14	12	11	8	6		
F	24				14	12	10	8	6

5010/5046	Max mark	A*	A	B	C	D	E	F	G
H	24	19	17	14	12	8	6		
F	24				14	12	10	8	6

#### Uniform Mark Grade Boundaries for these units

	Max UMS	A*	A	B	C	D	E	F	G
H	40	36	32	28	24	20	18		
F	27				24	20	16	12	8

Note: On higher tier papers, the "allowed" grade E is calculated as half a grade width

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