

# Examiners' Report/ Principal Examiner Feedback

November 2010

GCSE

360Science

GCSE Additional Science  
Multiple Choice Paper B2 (5015)

GCSE Biology  
Multiple Choice Paper B2 (5027)

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### Foundation tier

The foundation paper was tackled well with most candidates able to access the early part of the paper. Straight forward questions on photosynthesis were answered well with 82% of foundation tier candidates answering correctly. Questions about the gas produced during photosynthesis was less well answered with only 54% of candidates able to recognise that this was oxygen and with 37% of candidates believing it to be carbon dioxide. The interpretation of photosynthesis graphs were less well accessed with only 49% of candidates able to correctly interpreting a graph flattening out as photosynthesis continuing at a steady rate. Questions on the growth of embryos and in particular sex cells caused some problems with only 32% of candidates able to recognise sperm and egg cells as haploid gametes. It was pleasing to note that 62% of candidates were able to identify embryonic stem cells as able to differentiate into any type of cell. In general the crossover questions performed well with the foundation candidates generally scoring 20% less on each of the questions than the higher tier candidates, this indicates that the schools have entered the candidates for the correct tier in this module. It is pleasing to note that more candidates are now able to answer the complicated ethical questions regarding stem cell research better with 82% of higher tier candidates and 62% of foundation tier candidates able to identify a correct concern about using embryonic stem cells for research.

### Higher tier

It was very pleasing to note that candidates are becoming better at the complex nitrogen cycle with 66% of candidates able to correctly identify nitrogen fixing bacteria and 74% of candidates able to identify the role of nitrates in protein formation. Candidates were able to recognise that eutrophication is a build-up of nitrates in the environment with 79% of them gaining this mark. The step by step effect of eutrophication is less well understood with only 36% of candidates able to correctly list the processes involved in the correct order. The topic of genetic modification continues to cause a problem with only 47% of candidates able to identify that enzymes and plasmids are required in this process. The higher tier topic of protein synthesis once again causes problems for all but the A grade candidates with only 39% of candidates able to identify transcription and only 49% of candidates able to identify where transcription takes place. The process of translation at the ribosomes also caused some problems with only 48% of candidates able to correctly translate an mRNA strand. On a final note it was pleasing to note that candidates have improved their basic knowledge of the differences between mitosis and meiosis although the processes involved in these forms of cell division continues to be a problem.

## Grade Boundaries - November 2010

### Multiple Choice Papers - GCSE Additional Science

#### Raw Mark Grade Boundaries

5015/5027	Max mark	A*	A	B	C	D	E	F	G
H	24	22	19	16	14	11	9		
F	24				18	15	13	11	9

5017/5037	Max mark	A*	A	B	C	D	E	F	G
H	24	19	16	13	10	8	7		
F	24				15	12	10	8	6

5019/5047	Max mark	A*	A	B	C	D	E	F	G
H	24	21	18	15	12	10	9		
F	24				16	13	11	9	7

#### 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

### Structured Papers - GCSE Additional Science

#### Raw Mark Grade Boundaries

5016/5028	Max mark	A*	A	B	C	D	E	F	G
H	30	19	16	13	10	7	5		
F	30				18	15	12	10	8

5018/5038	Max mark	A*	A	B	C	D	E	F	G
H	30	22	18	14	10	7	5		
F	30				17	13	10	7	4

5020/5048	Max mark	A*	A	B	C	D	E	F	G
H	30	20	17	14	11	8	6		
F	30				18	14	11	8	5

#### 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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