



Rewarding Learning

**General Certificate of Secondary Education
2010–2011**

Science: Single Award (Modular)

Staying Alive
Module 1

Higher Tier

[GSC12]

THURSDAY 19 MAY 2011, MORNING

**MARK
SCHEME**

			AVAILABLE MARKS									
1	(a) (i) A, most tastebuds											
	(ii) 1. same size area/paper, 2. same place on tongue	[2]										
	(b) muscle	[1]										
	(c) received signals, from tongue/tastebuds/receptor, sent signal to face/facial muscles/effector	[3]	7									
2	(a) any 2 correct e.g. breathing, heart beating, digestion	[2]										
	(b) muscles work harder, need more food/oxygen, to respire, or heart, needs to work harder/pump blood faster, to supply muscles <i>any 3</i>	[3]										
	(c) respiration, all body cells	[2]	7									
3	(a) contraception/ives	[1]										
	(b) sperm ducts cut, to stop sperm leaving	[2]										
	(c) prevents STDs/safe sex, not permanent, no operation	[2]										
	(d) any correct e.g. beliefs/unnatural/religion	[1]	6									
4	(a) (i) ff	[1]										
	(ii) Parents [2] F1 [1]	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td></td> <td>F</td> <td>f</td> </tr> <tr> <td>F</td> <td>FF</td> <td>Ff</td> </tr> <tr> <td>f</td> <td>Ff</td> <td>ff</td> </tr> </table>		F	f	F	FF	Ff	f	Ff	ff	[3]
		F	f									
F	FF	Ff										
f	Ff	ff										
(b) disabled child; worry about coping; not fair on child <i>any two</i>	[2]											
	(c) (i) designer babies, gender imbalance	[2]										
	(ii) scientists, geneticists or any correct	[1]	9									
5	(a) more photosynthesis, increased plant growth	[2]										

			AVAILABLE MARKS
	(b) <u>night</u> – respiration only, no photosynthesis, <u>oxygen levels fall</u> [1] <u>day</u> – photosynthesis exceeds respiration, <u>oxygen levels rise</u> [1] <i>any 4</i>	[4]	
	(c) plant underwater different amounts of light measure oxygen levels/result	[3]	9
6	(a) (i) oestrogen	[1]	
	(ii) fall in progesterone, no pregnancies, lining breaks down	[3]	
	(b) triggers secondary sexual characteristics/example, develops testes/penis/prostate, production of sperm	[3]	7
	Total		45