



Rewarding Learning

**General Certificate of Secondary Education
2011–2012**

Science: Single Award (Modular)

Staying Alive

Module 1

Higher Tier

[GSC12]

TUESDAY 8 NOVEMBER 2011

1.30 pm–2.15 pm

**MARK
SCHEME**

			AVAILABLE MARKS	
1	(a) (i)	A so cuttings will be healthy, B so cuttings don't dry out	[2]	7
	(ii)	asexual	[1]	
	(iii)	Any two from: desirable characteristics; quicker; many plants saves money; grow at same rate	[2]	
	(b)	Any two from: human rights, expectations, embryos killed, determining gender, playing God, not natural; no variation	[2]	
2	(a)	cider/oranges/lemon show improvement; oranges/lemon contain vitamin C; sulphuric acid/vinegar/seawater contains no vitamin C	[3]	6
	(b) (i)	respiration	[1]	
	(ii)	Glucose + Oxygen \longrightarrow Carbon Dioxide + Water + Energy equation [1] for each side. Deduct [1] for no arrow	[2]	
3	(a)	each parent – [1] F1 – Allow consequential marking [1]	[3]	6
	(b) (i)	double helix	[1]	
	(ii)	single/23 chromosomes – [1] make pairs/46 at fertilisation – [1]	[2]	
4	(a)	cervix, uterus, oviduct order incorrect – [1]	[2]	4
	(b)	oviduct	[1]	
	(c)	might want children later	[1]	
5	(a) (i)	Any two from: destarch plant, attach strip <u>black</u> paper, leave plant in light	[2]	7
	(ii)	iodine; (yellow brown) to blue/black; where light present	[3]	
	(b)	upper side, receive more light	[2]	

			AVAILABLE MARKS	
6	(a) (i)	Americans	[1]	8
	(ii)	number surveyed or any valid age group/no bias (for or against)	[1]	
	(b) (i)	1 – plant can tolerate a herbicide that kills all other plants/weeds, so bigger yield/more money – [2]	[2]	
		2 – pests get poisoned, so less pesticides/less costs – [2]	[4]	
(ii)	Any two from: safety, can't be certain, could poison people if put in food crops, superweeds	[2]		
7	(a)	A = T and G = C – 1 mark	[1]	7
	(b)	3 bases; codes for an amino acid	[2]	
	(c)	Franklin/Wilkins, Watson/Crick – 2 marks revealed shape, showed how bases were linked together	[4]	
			Total	45