



Rewarding Learning

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

Science: Single Award (Modular)

Road Safety, Radioactivity
and Earth in Space
Module 6

Foundation Tier

[GSC61]

FRIDAY 12 NOVEMBER 2010, AFTERNOON

**MARK
SCHEME**

			AVAILABLE MARKS		
1	(a) (i)	Solar System	[1]		
	(ii)	E on third planet in	[1]		
	(iii)	Saturn	[1]		
	(iv)	Comets <input type="checkbox"/>			
		Asteroids <input checked="" type="checkbox"/>			
		Stars <input type="checkbox"/>	[1]		
	(b) (i)	Star	[1]		
	(ii)	Planet	[1]		
	(iii)	Moon	[1]		
	(c) (i)	Life on other planets	[1]		
	(ii)	Looking at whole universe	[1]	9	
2	(a)	They take less than a hundred years to make. <input type="checkbox"/>			
		They will last forever. <input type="checkbox"/>			
		They will run out. <input checked="" type="checkbox"/>			
		They are made from dead plants and animals. <input checked="" type="checkbox"/>	[2]		
	(b) (i)	Advantage – provide jobs for the local community Disadvantage – more traffic/damage habitats/visual pollution/dust pollution	[2]		
	(ii)	Coal; oil; peat; gas Any two	[2]		
	(c)	Biodiesel/alcohol/hydrogen [1]; fossil fuels will last longer/renewable [1]	[2]		8

			AVAILABLE MARKS									
3	(a) (i)	36 m	[1]	8								
	(ii)	1. Greater										
		2. Less										
		3. No effect			[3]							
(b) (i)	0.18 seconds	[1]										
	(ii)	Repeat experiment/average	[1]									
	(c)	More friction [1] this helps when they use the brakes/cornering [1] better grip [1]/go faster [1]/not slip [1] safer [0]	maximum [2]									
4	(a) (i)	The greater chance of being killed	[1]		6							
		(ii)	Speed camera/speed bumps/road narrowing			[1]						
	(b)	$9 + 1 + 61 = 71$; $100 - 71 = 29$	[2]									
	(c)	Use a zebra crossing/pedestrian crossing/traffic lights [1]; wear bright coloured clothes; face oncoming traffic; use green cross code [1] Any two	[2]									
5	(a)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Wrong word</th> <th style="width: 50%;">Correct word</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">nitrogen</td> <td style="text-align: center;">hydrogen</td> </tr> <tr> <td style="text-align: center;">pushed</td> <td style="text-align: center;">pulled</td> </tr> <tr> <td style="text-align: center;">fission</td> <td style="text-align: center;">fusion</td> </tr> </tbody> </table>	Wrong word	Correct word	nitrogen	hydrogen	pushed	pulled	fission	fusion	[1]	4
		Wrong word	Correct word									
		nitrogen	hydrogen									
	pushed	pulled										
fission	fusion											
	[1]											
	[1]											
(b)	8.4 years	[1]										

			AVAILABLE MARKS
6	(a)	(i) all points correct [2] 5 points [1] smooth curve [1]	maximum [3]
	(ii)	70 counts per minute	[1]
	(iii)	gamma rays from ground; cosmic rays from space; hospitals; nuclear power stations; nuclear weapons testing Any two	[2]
	(b)	(i) Alpha does not pass through aluminium [1] Gamma all passes through [1] Beta amount depends on thickness [1]	[3]
	(ii)	Activity decreases too quickly/has to be replaced more often	[1]
			Total
			10
			45