



*Rewarding Learning*

General Certificate of Secondary Education  
2011–2012

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**Science: Single Award (Modular)**

Road Safety, Radioactivity  
and Earth in Space  
Module 6

Foundation Tier

[GSC61]

THURSDAY 24 MAY 2012

9.15 am–10.00 am

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**MARK  
SCHEME**

		AVAILABLE MARKS		
<b>1</b>	<b>(a) (i)</b> Venus Saturn	[2]	9	
	<b>(ii)</b> Jupiter	[1]		
	<b>(iii)</b> Neptune [1]; furthest away from the Sun [1]	[2]		
	<b>(b)</b> Extinction	[1]		
<b>(c)</b> orbit; gravity; Earth.	[3]			
<b>2</b>	<b>(a) (i)</b> 124	[1]		6
	<b>(ii)</b> 76	[1]		
	<b>(iii)</b> heat	[1]		
	<b>(b)</b> A	[1]		
	<b>(c)</b> How much energy a device uses.	<input type="text"/>		
	How good a device is at changing energy into useful energy.	<input checked="" type="checkbox"/>		
How much it costs to run a device.	<input type="text"/>	[1]		
<b>(d)</b> Use less electricity saving money. (not cheaper)		[1]		
<b>3</b>	<b>(a) (i)</b> 6 miles	[1]	7	
	<b>(ii)</b> 2 hours	[1]		
	<b>(iii)</b> 3 miles/hour (allow consequential marking)	[1]		
	<b>(b)</b> Increase	[1]		
	<b>(c) (i)</b> 56N	[1]		
	<b>(ii)</b> Friction	[1]		
<b>(iii)</b> Increase the force	[1]			

4 (a) Background [1]

(b)

Source	Caused by humans
Nuclear weapons	✓
Cosmic rays	
Granite rocks	
X-rays from hospitals	✓

[2]

(c) Newry and Mourne [1]

(d) Damage DNA/cells or mutation;  
causes cancer [2]

(e) 1. Alpha  
2. Gamma  
3. Beta  
All 3 correct = 2 marks, 1 or 2 correct = 1 mark [2]

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5 (a) (i) 5 points correct – 2 marks  
4 points correct – 1 mark  
correct line = 1 mark [3]

(ii) as the speed increases the braking distance increases. [1]

(b) Ice/rains/gravel/mud/ref to condition of tyres;  
reduces the friction. [2]

(c) Crumple zone;  
absorbs the energy in a crash. [2]

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6 (a) Any two from: Distances very large; power supply insufficient;  
time scale would be too great. [2]

(b) Any two from:  
● Looking for other natural resource/any named natural resource  
● Earth is becoming overpopulated/looking for planet similar to Earth  
● Looking for extra-terrestrials [2]

(c) Clouds of hydrogen;  
pulled together by gravity;  
nuclear fusion takes place/helium formed.  
(must be in order) [3]

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**Total**

**45**