



Rewarding Learning

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

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

**MARK
SCHEME**

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

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]

8

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]

8

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]

7

Total

45