



Rewarding Learning

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

Science: Single Award (Modular)

Chemical Patterns and our Environment
Module 3

Foundation Tier

[GSC31]

THURSDAY 19 MAY 2011, MORNING

**MARK
SCHEME**

			AVAILABLE MARKS	
1	(a)	Lemon juice – citric acid Oven cleaner – sodium hydroxide Milk of magnesia – magnesium hydroxide	[3]	8
	(b)	(i) hazard symbols	[1]	
		(ii) toxic/poisonous	[1]	
		(iii) B	[1]	
	(c)	as a warning of danger greater visual impact/than words/easier to understand understood internationally (any one)	[1]	
(d)	X	[1]		
2		citric acid, icing sugar, carbon dioxide, fizzing	[4]	4
3	(a)	proton + electron – outer dots neutron – open circle	[3]	4
	(b)	electron	[1]	
4	(a)	(i) thin layer of rock	[1]	7
		(ii) liquid + solid rock (accept iron and nickel not iron on its own)	[1]	
	(b)	heat	[1]	
	(c)	(i) line from X to centre or any suitable point	[1]	
		(ii) 7	[1]	
(d)	diagram showing cloud of dust/ash labelled	[1]		
5	(a)	A	[1]	6
	(b)	fluorine/bromine/iodine/astatine	[1]	
	(c)	group C	[1]	
	(d)	Be/Mg/Ca/Ba/Sr	[1]	
	(e)	List D [1] because all the elements are from different groups [1]	[2]	

			AVAILABLE MARKS	
6	(a)	heartburn (accept Indigestion)	[1]	5
	(b)	it reacts with the acid in the stomach/baking soda is an alkali/ to form water neutralisation worth [2]	[1] [1]	
	(c)	the baking soda produces CO ₂ as a product this builds up escapes produces a gas causing the burp	[1] [1]	
7	(a)	(i)	8, 9 points correctly plotted [2] 7, 6 points [1] less than 6 [0] joined correctly [1]	11
		(ii)	5 cm ± 0.1 must agree with graph [1]	
	(b)	the greater the amount, the higher the honeycomb [1] it stops at 28 g [1]	[2]	
	(c)	28 g	[1]	
	(d)	vinegar is an acid/reacts with baking soda [1] it will react to produce (more) CO ₂ [1]	[2]	
	(e)	ethanoic acid/water	[2]	11
			Total	45