

Crime Busters – Answer Key

School Name:	DO NOT WRITE IN THIS COLUMN
Team Number: B- _____	Penalties:
Student Names:	Raw Score:
Station #:	Rank:

Part A – Qualitative Analysis (ID = 5 points per substance [10 points for mixtures] and Basis = 1 point / Questions = Vary) Total: 100 Points

Identity		How did you identify?/Basis
1	Ammonia	
2	Tin	
3	Sugar	
4	Baking Soda	
5	Gypsum	
6	Calcium Carbonate	
7	Alka-Seltzer	
8	Vitamin C	
9	Cornstarch	
10	Sand	
#	IDENTIFY ONLY	
11	Salt	
12	Sugar	
13	Baking Soda and Gypsum	
14	Calcium Carbonate and Alka-seltzer	
15	Vitamin C	

Part A – Cont.	
1	Baking Soda (1)
2	EF: NaHCO ₃ SciName: Sodium Bicarbonate (2)
3	Seasoning in chips, Used in Handwarmers, Buffer solutions, Concrete sealant, neutralize sulfuric acid waste (2)

Part C – Paper Chromatography (ID of suspect = 4 points, Questions = 1 point, 1 point for each completed and attached strip) Total : 10 points	
1	Kunneth (4)
2	B (1)
3	A (1)

Part B – Polymer Testing/ Natural and Man-made Substances (ID = 2 points, Basis = 1 point, Questions = vary) Total: 20 points	
Classification	Basis
H1	Human
H2	Cat
H3	Dog
F1	Synthetic (Nylon)
F2	Animal (wool)
1	Nylon (1)
2	The diameter of the medulla compared to the diameter of the hair (ratio) ; 1/3 (2)
3	Polymethyl Methacrylate ; 1.18 g/cm ³ (-0.5 points for no unit) (2)

Part D – Crime Scene Physical Evidence (ID= 4 points; Questions = 1 point) Total: 20 points	
A	Kunneth (4)
B	Alyson (4)
C	Alyson (4)
D	Blazeit's foot print (4)
1	Plain Whorl (1) (0.5 for whorl)
2	2 (1)
3	Specific Parts of fingerprints, used for comparison (1)
4	Henry Classification System (1)

