Dursley Disaster

A Crime Busters practice test

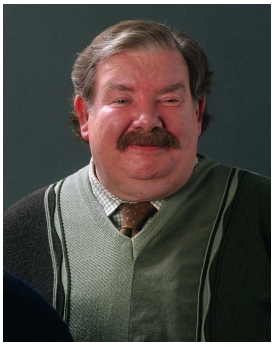
Created by Panda Weasley

Police were called to 4 Privet Drive today at 09:38 AM. Upon arriving at the scene they found a trampled flower bed and a very distraught Mr. and Mrs. Dursley. Mr. Dursley explained that his wife had returned home after a quick trip to the store to find her prize winning hydrangea bush destroyed. This hydrangea bush had won her three first place medals at last year's plant fair. During the month leading up to this year's fair, which occurs next Sunday, she has been spending extra time taking care of the plant. After alerting Mr. Dursley of the damage, she quickly phoned the police.

Upon examining the scene the police found a wrinkled list written in pen under one of the hydrangea leaves. Unknown samples (X) were also collected at the scene including a powder, a liquid, a polymer shard, and torn piece of fabric. A fingerprint and pens belonging to the suspects were also collected. These pieces of evidence are provided to you, as well as samples from the suspects.

You have 50 minutes to analyze the evidence and draw a conclusion on who destroyed Mrs. Dursley's hydrangea bush.

Suspects



Mr. Dursley: Mr. Dursley is the husband of Mrs. Dursley. He works at a nearby drill company called Grunnings. He was not at work on this particular day due to being stuck in bed with a bad cold. Mr. Dursley claims to have been reading in the bedroom when the crime took place and didn't hear anything in the garden. He spilled his drink on his bathrobe when rising to investigate the problem after Mrs. Dursley alerted him. A prescription bottle was found in the pocket of his cotton bathrobe. Samples P1, P2, PL1, F1, and L1 were collected from him.

Dudley Dursley: Dudley is the teenaged son of Mr. and Mrs. Dursley. He attends Smeltings Academy, but is currently home for Easter holiday. He has recently been put on a diet, and was eyeing the investigator's donuts longingly. Dudley claims to have been watching TV in the kitchen and eating a healthy snack when the crime took place. Samples P3, P4, PL2, F2, and L2 were collected from him.

Mrs. Polkiss: Mrs. Polkiss is the mother of Dudley's friend Piers and a neighbor of the Dursley's. At last year's plant fair she lost to Mrs. Dursley in all the competitions. Mrs. Polkiss claims to have been cleaning her kitchen at the time of the incident. Samples P5, PL3, L3, F3, and L4 were collected from her.

Mrs. Green: The Green family are next door neighbors of the Dursleys. Mrs. Green and Mrs. Dursley often don't get along. Mrs. Dursley is secretly jealous of Mrs. Green's daughter, Suzie, who can play the violin. Mrs. Green doesn't approve of the Dursley's parenting. Mrs. Green claims to have been putting together a new bookshelf when the crime took place. She showed the investigators a small cut on her foot she received from accidentally dropping a board. Samples P6, PL4, F4, and L5 were collected from her.

Forensic Details

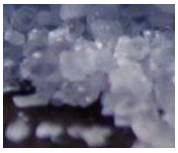
Forensic Analysts have been able to provide you with the following information about the samples.

Powders-

PX- Granular (square), white, soluble.
pH- 7
HCL- no reaction
Iodine- no reaction

P1- Granular, orange tint, soluble.
pH- 2
HCL- no reaction
Iodine- clears

P2- Powder, white, soluble.
pH- 9
HCL- fizzes
Iodine- fizzes



P3- Granular (square), white, soluble.
pH- 7
HCL- no reaction
Iodine- no reaction

P4- Granular, white, soluble.
pH- 7
HCL- no reaction
Iodine- no reaction

P5- Powder, white, soluble.
pH- 9
HCL- fizzes
Iodine- no reaction

P6- Powder, white.
pH- 7
HCL- fizzes
Iodine- no reaction

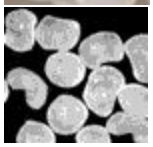
Plastics-

PLX
Clear
Sinks in water

PL1
Opaque
Floats in water

PL2
Clear
Sinks in water

PL3
Translucent
Floats in water



PL4
Slowly sinks in water

Liquids-

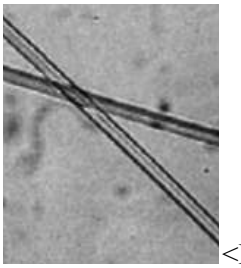
LX- Clear, pH of 7.
L1- Clear, pH of 3, slight citrus scent, no reaction to iodine.
L2- Clear, pH of 7, no reaction to iodine.
L3- Clear, pH of 7, alcohol scent.
L4- Clear, pH of 11.
L5- Clear, pH of 7, delayed reaction to iodine.

Fibers-

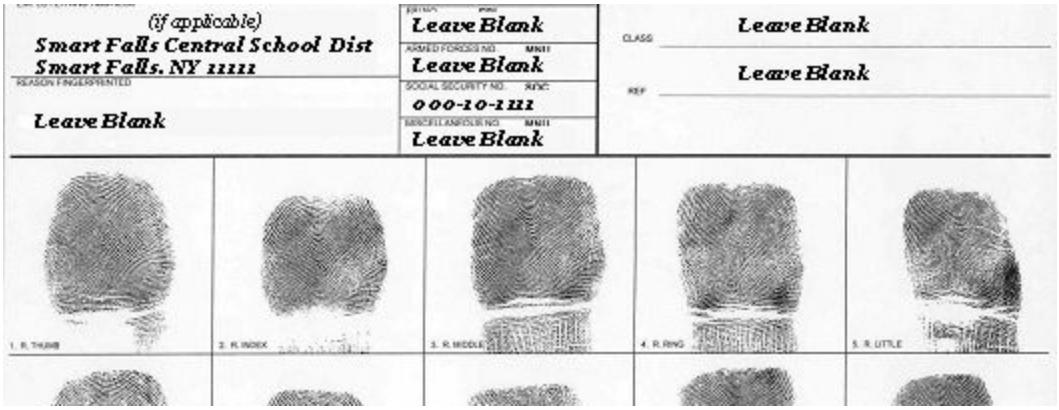

<FX

<F1

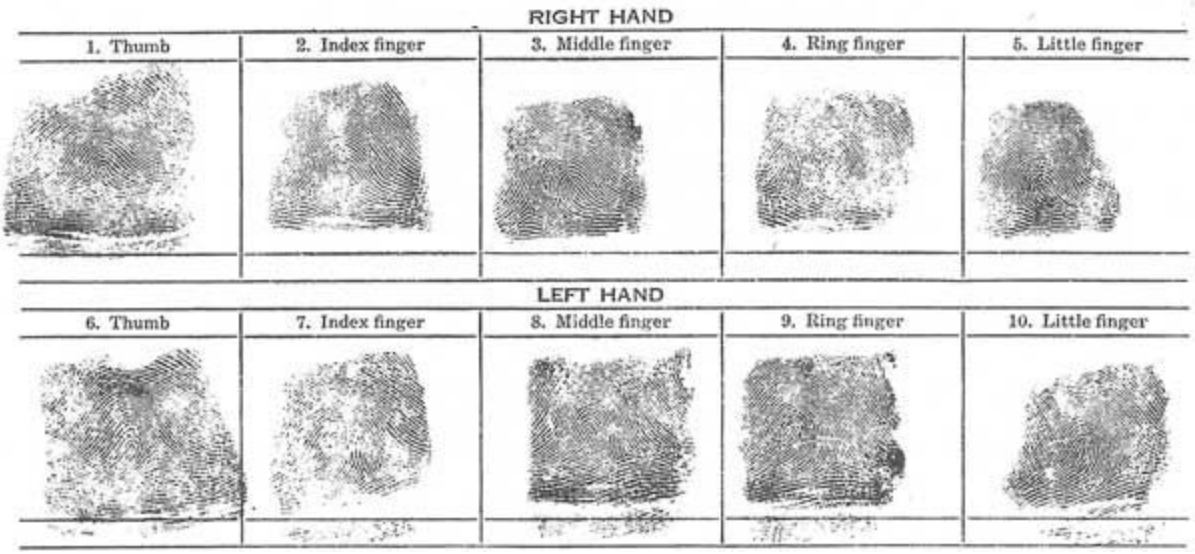
<F2

<F3

<F4

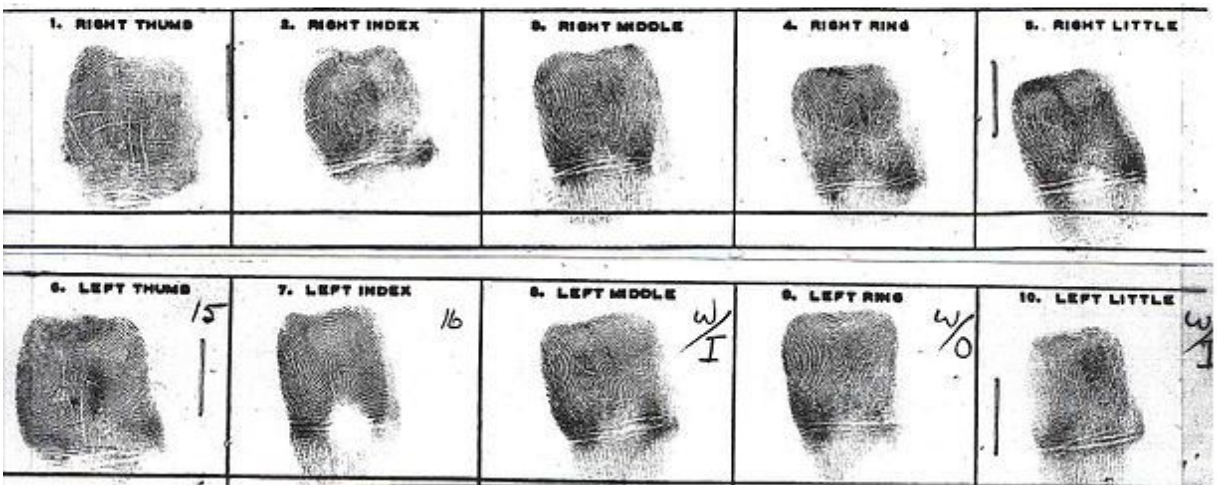
Section 1- Fingerprints (__/15)



Mr. Dursley



Dudley Dursley



Mrs. Polkiss

Mrs. Green

Crime Scene

FINGERPRINT ANALYSIS

1. What type of fingerprint is shown? _____
2. Which suspect does this fingerprint belong to/which finger is it? _____
3. Please highlight and label the characteristics and matching minutiae that led you to this conclusion.

QUESTIONS

1. What are the three common types of fingerprints? _____
2. Which is the least common? _____
3. The ridges on your hands that make unique fingerprints are called:
    a. Finger ridges
    b. Finger impressions
    c. Friction ridges
    d. Friction impressions

(__/15)

Section 2- Chromatography (__/5)

1 2 3 4

Samples in order L-R: Crime Scene, Mr. Dursley (1), Dudley Dursley (2), Mrs. Polkiss (3), Mrs. Green (4).

CHROMATOGRAPHY ANALYSIS

1. Which sample matches the one found at the crime scene?___
2. Which suspect does this implicate? _____
3. How do you know?

_____

4. Is the first sample water soluble? _____
5. How many components are there in sample 4? ____

Section 3- General Questions (__/5)

1. What does a positive reaction to iodine indicate?
    a. The presence of enzymes
    b. The presence of sugars
    c. The presence of starch
2. Which of the following is an example of a naturally occurring polymer?
    a. Polyester
    b. Silk
    c. Rayon
3. When performing a burn test, animal fibers:
    a. Melt
    b. Ignite and appear charred
    c. Shrivel
4. Which of the following is NOT a type of chromatography?
    a. Inversion chromatography
    b. Paper chromatography
    c. Gas chromatography
5. The Rf factor calculates the amount of pigment that moves in chromatography.
    a. True
    b. False

Section 4- Unknowns (__/50)

Fill in the following chart as you test the unknown samples.

Sample	What is it?	How do you know?
PX		
P1		
P2		
P3		
P4		
P5		
P6		
PLX		
PL1		
PL2		
PL3		
PL4		
LX		
L1		
L2		
L3		
L4		
L5		
FX		
F1		
F2		
F3		
F4		

Analysis (__/25)