

Name _____

Health Academy Honors Physics Lab - Bloodstain Pattern Simulations

Table 1						
Height (cm)	Diameter (mm)					
	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Average
15						
30						
45						
60						
75						
90						
105						
120						
135						

Table 2		
Height (cm)	Average Diameter (mm)	Characteristic Observations
15		
30		
45		
60		
75		
90		
105		
120		
135		
crime scene		

Table 3			
Angle of Impact		Droplet	
		Elongation (cm)	Width (cm)
trial 1	15°		
trial 2	15°		
trial 3	15°		
trial 1	30°		
trial 2	30°		
trial 3	30°		
trial 1	45°		
trial 2	45°		
trial 3	45°		
trial 1	60°		
trial 2	60°		
trial 3	60°		
trial 1	75°		
trial 2	75°		
trial 3	75°		

Table 4			
Angle of Impact	Average Droplet Sizes		
	Elongation (cm)	Width (cm)	Observations
15°			
30°			
45°			
60°			
75°			
crime scene			

Table 5

Distance	Angle	Direction

Analysis

Prepare one graph from the data in **part A**
 plot: drop height on the average diameter

Prepare two graphs from the data in **part C**

1. plot: elongation on the x axis and angle of impact on the y axis.
2. plot: width on the x axis and angle of impact on the y axis.
 Extrapolate the crime scene impact angle from each graph.

Questions

Part A

1. Describe the relationship between the distance of fall and the diameter of the droplet.
2. How do the spines compare at different heights?
3. What was the distance of fall at the crime scene? Explain how you arrived at this determination

Part C

1. Describe the relationship between elongation of the droplet and the impact angle.
2. Describe the relationship between width of the droplet and the impact angle.
3. What was the crime-scene impact angle extrapolated from the elongation graph?
4. What was the crime-scene impact angle extrapolated from the width graph?

5. How closely did the results (questions 3 & 4) agree?

Part D

1. List the final characteristics (magnitude & direction) of the vector leading to the origin of the blood spatter.

Summary

After performing this lab, imagine what an actual crime scene might look like. Write two or three paragraphs describing the difficulties or further considerations that must be taken into account in analyzing the scene.

What career interest do you have in the health related field that would entail learning about blood?