



Nashville, Tennessee

Nashville Police Department of Forensics

ABC Technologies
Forensic Division

Dear Forensic Team:

We have had a recent death in our community that requires your expertise in blood spatter analysis.

Roommates Brandon Coates and David Short, both 24 – and both approximately 6’ 1” in height, became engaged in an argument, which ultimately led to the death of David Short. The following information was gathered from Brandon Coates police statement:

“I was relaxing on the back concrete patio of our house when David came out and began yelling and gesturing in a threatening manner. He was claiming that I had stolen a large sum of money from his room, even though I kept telling him I didn’t even know he had any money in the house.

David started going crazy and I began to fear for my life so, in self-defense, I hit David once in the face. I must have hit him harder than I thought because he fell to the ground and hit the side of his head on the concrete patio. He immediately stopped breathing and I didn’t know what to do – so I picked him up and drove him to a nearby hospital”.

David Short was pronounced dead at the hospital. An autopsy revealed that Mr. Short had bleeding impact wounds on his left cheek, nose, and right temple region. The right temple impact is most likely what caused Mr. Short’s death. It is unknown if this lethal blow came from an impact with the concrete patio, as claimed by Mr. Coates, or from a blow by Mr. Coates. Brandon Coates had swelling and scrapes on both his right and left hands, which he claims came from scraping the concrete patio as he picked up David Short.

Brandon Coates is awaiting charges, however, his lawyer says they will be claiming self-defense.

We need your team to analyze the blood spatter at the crime scene and let us know of your final conclusions. We will gladly take care of all expenses and only hope you have time in your busy schedule to take on this case.

Thank you,

Karen McDowell
Nashville Police, Department of Forensics



DEPARTMENT MEMO

TO: All Research Teams

I have complete confidence in your abilities to analyze blood spatter evidence. Show them how it's done!

After analyzing the evidence you will be answering TWO questions for Karen McDowell:

1. What story does the blood spatter tell you about what happened at the crime scene? Does what you see match Brandon Coates story?
2. What is your professional opinion concerning the guilt of Brandon Coates? Could Brandon Coates have delivered the fatal blow to David Short's temple region?

Pack your Sine/Tangent Trig Table, your trusty ruler, and take some string – just in case you need to “string” the crime scene. During your analysis of the blood spatter evidence you should carefully calculate:

1. All Points of Convergence
2. Impact Angle for all blood drops
3. All Points of Origin
4. The Heights of all impact events

And most important – let the blood spatter tell the story of what really happened at the crime scene.

Your team will be expected to serve as expert witnesses in the upcoming court case against Brandon Coates. You should be prepared to answer all questions about your analysis of the blood spatter evidence from both the prosecuting and defense attorneys.

Be prepared to bring the following information to the courtroom:

- A neat, correctly labeled, and titled Table (or Tables) that shows ALL the blood spatter evidence you collected and calculated.
- A neat sketch of the crime scene that illustrates Points of Convergence, Points of Origin, and Heights of all impact events. You will be allowed to use this sketch to help you answer questions while serving as an expert witness in court.

Your salary will be determined by your ability to analyze the blood spatter evidence, organize your data, and answer questions from the prosecuting and defense attorneys while serving as an expert witness in court.

INSTRUCTIONS FOR CONSTRUCTING AND ANALYZING THE BLOOD SPATTER EVIDENCE

Constructing The Evidence

1. Pick up FOUR pages with evidence blood spatter (Page 1, Page 4, Page 10, and Page 11) and SEVEN blank pages from your supervisor.
2. Tape your eleven pages together EXACTLY as shown in Figure 1. Line up the edges of each page perfectly side-by-side before taping. DO NOT overlap the pages and DO NOT leave spaces between the pages.
3. Tape your connected pages to the wall so it is straight up and down (not tilted) and the bottom is EXACTLY 1 foot up from the floor (see Figure 1).
4. This represents the blood spatter evidence as it was found at the crime scene and it is now ready for your analysis.

Analyzing The Evidence

To be most efficient you should complete your analysis in the following order:

Step #1 – Determine all Points of Convergence by “stringing” the blood spatter.

- A. Rather than draw lines, use strings to form the long, straight lines you will need to find your Points of Convergence (see example drawn to the right).
- B. Tape down one end of string near drop. Stretch out the string, making sure it passes through the drop perfectly to show the EXACT direction the drop came from (just like you did when drawing a line through the drop).
- C. Once you are satisfied that you have a long enough line of string you should cut and tape this end of the string down – keeping the string pulled tight in a straight line (no sags). Continue on to string the next Evidence Blood Spot.
- D. The points of intersecting lines you discover may not be perfect at first. Adjust the strings slightly to find the perfect point of intersection – the Point of Convergence. Feel free to ask your supervisor for assistance if you need extra help with “stringing”.

Step #2 – Measure the distance from each drop to its Point of Convergence.

This must be completed with your blood spatter evidence taped to the wall.

Step #3 – Measure the height of impact for each Point of Convergence (what height above the floor did the impact take place?)

This must be completed with your blood spatter evidence taped to the wall.

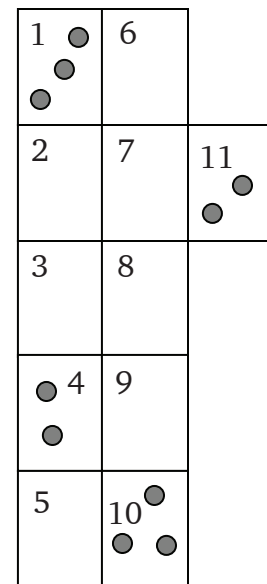
Step #4 – Measure blood drops and calculate the Impact Angle of each drop.

This can be completed with blood spatter papers at your table.

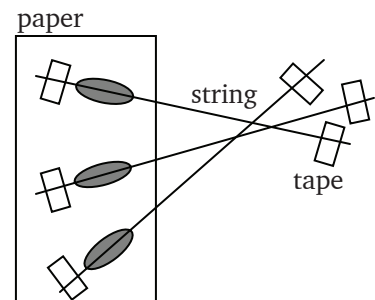
Step #5 – Calculate all Points of Origin.

This can be completed with blood spatter papers at your table.

Figure 1 – How to construct the blood spatter evidence pages



1 foot up
from floor



PAGE #1

Evidence #1



Evidence #2



Evidence #3



PAGE #4

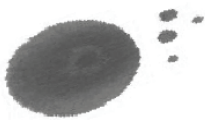
Evidence #6



Evidence #7



Evidence #8



Evidence #9



Evidence #4



Evidence #5

