



## Student's Guide

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# **Crime Scene Investigator: Washington, D.C. – Murder You Solve**

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Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## Crime Scene Investigator: District of Columbia – Murder You Solve - Part 1

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As an expert in physics, you have been recruited by the CSI (crime scene investigation) ballistics department of the FBI's District of Columbia field office. Due to a back log of cases being processed by the District of Columbia Metropolitan Police CSI department the FBI has been called in to handle this case.

### Scenario

*It is 3:40 a.m. Your personal cell phone and work cell phone ring at the same time. Groggy, you clumsily answer the phone to find out that a crew is awaiting your arrival at the crime scene. As this is your first official duty call, you run to your car nervously but somewhat excited.*

*On-site, you navigate through the media frenzy only to be greeted by the disheartening calmness of the homicide crew carrying about their routine work. The body of a young Caucasian male lies lifeless on the floor. The smell of gun smoke is clearly present in the room.*

**Special Agent DeCicco:** Hello, Inspector.

**Inspector Miller:** Hello, Officer.

**Special Agent DeCicco:** The 911 dispatcher was called at 3:18 a.m. by a neighbor who heard gunshots coming from this building. So far, all we know is that between 2:30 a.m. and 3:20 a.m., there was a heated argument between two men, which ended with three gunshots.

**Inspector Miller:** Did you search the premises for indication of breaking and entering, gun slugs or any other clues?

**Special Agent DeCicco:** We have started to. As for slugs, the victim has two wounds, including one fatal wound in the cardiac region.

**Inspector Miller:** Are there any other wounds on the victim?

**Special Agent DeCicco:** None visible, Inspector.

**Inspector Miller:** Have you recovered the third slug?

**Special Agent DeCicco:** Not yet.

**Inspector Miller:** I see the back window is open. Maybe the third bullet missed the victim and went through that opening. Send a crew outside to see if we could recover it.

*Looking around the room for extra clues, you take notes about your surroundings:*

- Third-floor common area. Access to street stairwells at either side.
- Primary building access from main entry.
- Large window is open facing school fields.
- Surrounding classrooms all locked, no forced entry

You are interrupted by Special Agent DeCicco, who quickly bursts into the room:

**Inspector Miller:** You have the third bullet?

**Special Agent DeCicco:** There is a slight problem, Inspector. We know where it is, but it is stuck in a wood panel that is part of a house across Webster Street.

**Inspector Miller:** Carve out the block of wood that surrounds the bullet. Be careful not to damage it! It is critical evidence.

**Special Agent DeCicco:** Yes, Inspector. Anything else?

**Inspector Miller:** Yes. I would like you to get the Crime Scene Investigation (CSI) team to analyze the distribution of gunpowder so that we can find out exactly where the shooter was in the room. And also, concerning that third bullet, I would like you to get the EL Haynes Physicists to analyze it to help us find the shooter.

What other questions should you ask the officer? (List at least two.)

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You sketch the crime scene



## Crime Scene Investigator: Washington, DC – Murder You Solve - Part 2

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Inspector,

I've been told that you're a rookie, so here's a bit of friendly advice. You know from the gunpowder residue that the shooter must have been face to face with the victim. Therefore you can assume that he shot almost horizontally. Make sure you measure the diameter of the bullet to determine the type of gun the shooter used.

Calibre (mm)	Type	Muzzle speed Feet/s	BS #
6	Varia	800	PS324-67YT6
9	Luger	600	GTH56-9JK
22	Winchester	1800	BVG54-PL9
28	Smith & Wesson	2200	KIJ765-012W

**Inspector:** Do we have anything from CSI team yet?

**Special Agent:** Yes, sir. The information provided to us so far is that the bullet was retrieved a distance of 148.5 m from the window E.L. Haynes building to the front of the house on Webster St. NW.

**Inspector:** Great. Anything else?

**Special Agent:** We have new information, Inspector: Security cameras show eight individuals going in and out between 2:30 a.m. and 3:20 a.m.

**Inspector:** The neighbor said that *two men* were arguing. How many of these individuals on tape are males?

**Special Agent:** Five individuals, I believe.

**Inspector:** Have a team ask around and identify who these people are. I want to see all five of them at the precinct first thing tomorrow.

**Special Agent:** Is there anything particular you would like from them tomorrow?

**Inspector:** I want all the information I can get from these people: their full names, address, date of birth, height, weight. Heck, I even want to know what they had for breakfast!

### Question:

- 1) Which one of the characteristics of the five suspects will indirectly help you find out who the murderer is? Find the value of this characteristic.

### Three-Step Cycle

List all the *relevant* information you have gathered from the problem. Based on this information, state what you need to know to solve the problem. As new information comes in, you will want to summarize and update the relevant information you have gathered and ask new questions.

List the following:

What we know	What we need to know	Summary

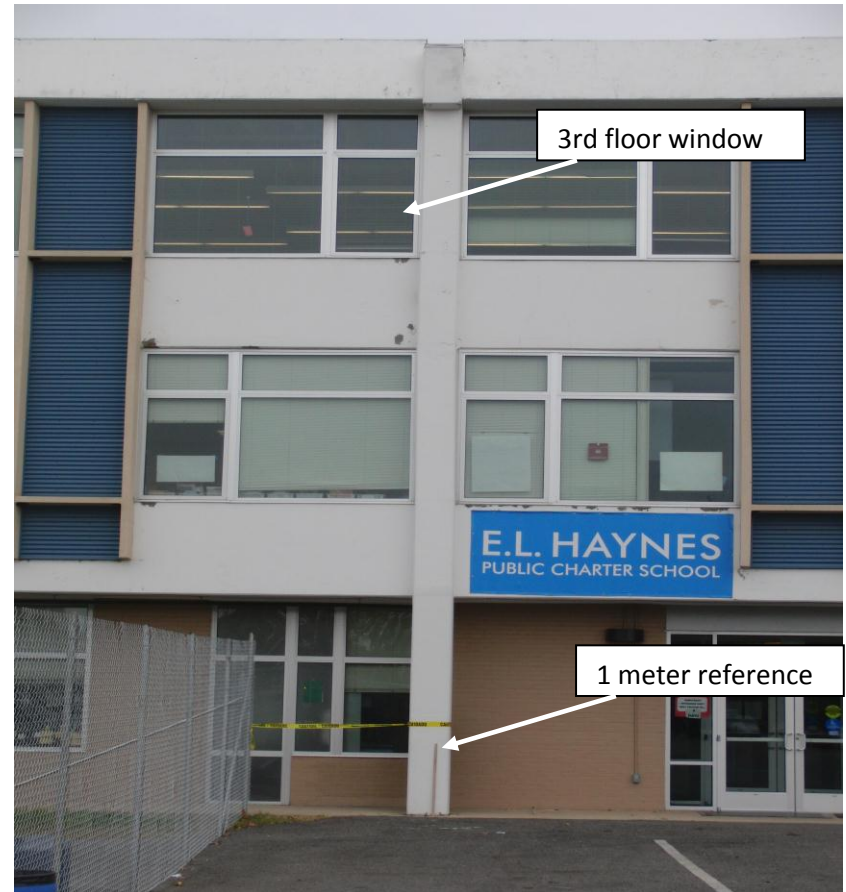
**Crime Scene Report:**

House on Webster St. NW where the bullet was recovered.



Determine the height of the bullet from the level of the side walk.

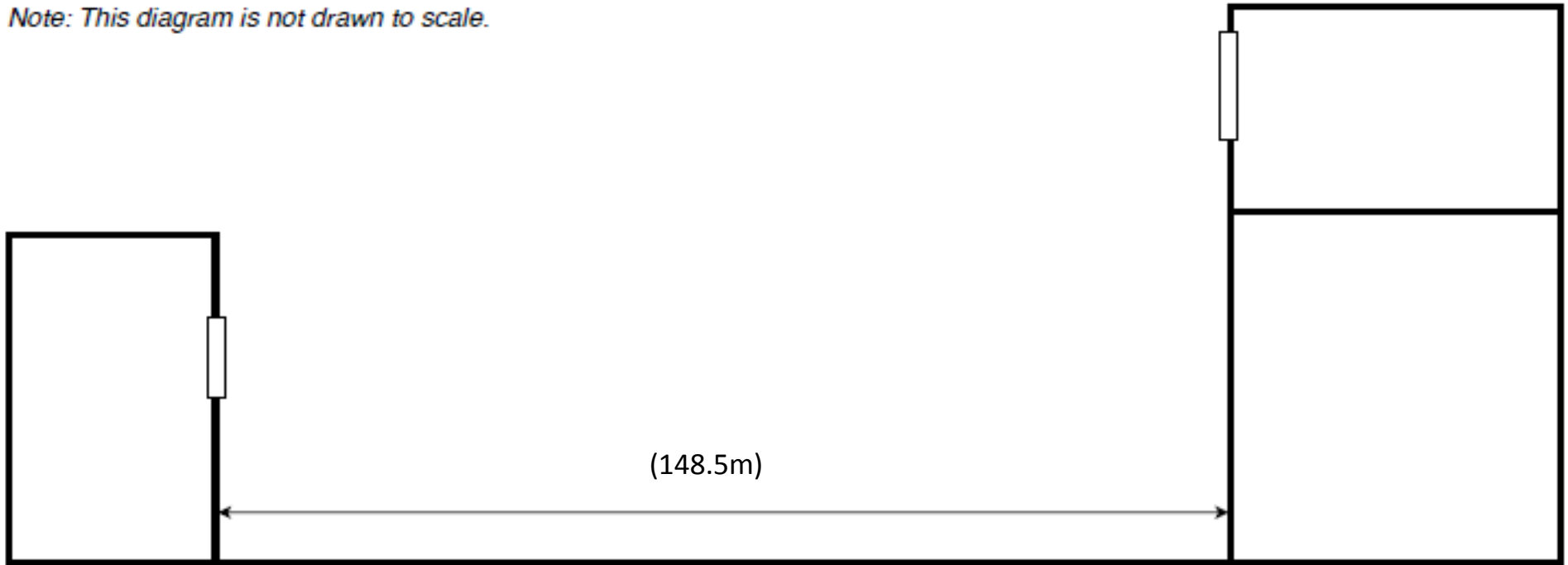
E.L. Haynes Public Charter School, Kansas Ave Campus, where the bullet was fired from.



Determine the height of the 3<sup>rd</sup> floor window.

Cross-Section View of house on Webster St. NW and E.L. Haynes Public Charter School, Kansas Ave Campus

*Note: This diagram is not drawn to scale.*



Determine all additional distances and/or heights necessary to complete your investigation.

