###### OE Forensics Ms. Scholle

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| Achieving Excellence Together In Forensics |

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **Date:**

**Lesson: What is Forensic Ballistics**?

**Objectives:**

Describe rifling on a gun barrel and explain how it marks a bullet

Explain barrel size and caliber

Describe how bullets are test fired and matched

Discuss the role of ballistics recovery and examination at a crime scene

Determine the position of the shooter based on bullet trajectory

**Vocabulary:**  5 Credit points will be added to your mid-unit quiz if you define the following:

**Ballistics** **Barrel** **Breech** **Bullet** **Caliber** **Cartridge**

**Firearm** **Fully automatic** **Gunshot residue** **Lands**

**Muzzle** **Pistol** **Rifle** **Rifling** **Semiautomatic**

**Shell casing** **trajectory**

**Anticipatory Set:** Read The Case Study Below and Answer Questions 1-3.

Beginning in October 2002, a series of sniper murders terrorized residents of the Washington, D.C., area. Ten people were killed and three others wounded. At several different crime scenes, the police were able to collect shell casings and recover bullet fragments from the victims. Investigators determined that most of the shootings were related to the same 0.223-caliber firearm. Police apprehended two suspects—John Allen Muhammad, 41, and John Lee Malvo, 17—and discovered a rifle in the suspects’ car. The recovered crime-scene evidence matched this rifle. Technology can play a major role in helping police match firearms to ballistic evidence in cases such as this. A computerized firearms database, a collection of digital images of bullets and **shell casings** recovered nationwide by police, can help investigators determine if any weapon has been involved in other crimes. Whenever police recover a bullet or shell casing, they photograph it and enter it into the database for matching. This kind of ballistic evidence can be linked to a specific gun, but further evidence is needed to identify the shooter. In the case of the D.C. serial sniping, the police were able to find suspect fingerprints at two different crime scenes. In addition to the fingerprint evidence, small traces of DNA found in saliva left at the scenes helped identify the suspects. Finally, handwriting analysis of a letter and writing found in their car all pointed to Muhammad and Malvo as the snipers. Both men were found guilty—Muhammad was sentenced to death and Malvo was sentenced to life without parole.

1. What kinds of evidence do you think police collected at the crime scenes that matched the rifle found in the suspects’ car?
2. Do you think ballistic evidence is sufficient to convict a suspect?
3. What makes a sniper different from others who use firearms as murder weapons?

**Lesson Agenda:**

1. Power Point Presentation: Unit 11: Ballistics {Slides 1-27} use link on my website to powerpoint “Ballistics” on secondary site
2. Forensic File Video: Season 1 Episode 7: Broken Promises. {First ten minutes}
3. Summary

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| **Unit 12: FORENSIC BALLISTICS** | **Name:** |
| **Date:** |
| **Lesson:** What is Forensic Ballistics? | **Period:** |

**ESSENTIAL QUESTION:**

What are the investigative tools that forensic scientists to analyze Firearms?

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| **Questions/Vocabulary/** | **Notes / Answers / Definitions / Examples/Equations** |
| Why should an investigator study Ballistics? |  |
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| Define Forensic Ballistics. |  |
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| Name three categories of Forensic Ballistics. |  |
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| Define internal Ballistics. |  |
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| Define external Ballistics |  |
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| Define terminal Ballistics. |  |
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| Differentiate between Long guns and Hand guns |  |
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| Name and sketch the four parts of a bullet. |  |
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| Define caliber of a bullet. |  |
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| Name three types of bullets. |  |
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| Discuss the differences between the three types |  |
| of bullets. |  |
| **Summary: Use the information you have learned and write a complete summary for this lesson** | |
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