**Ballistics Notes**

**Introduction**

Ballistics is the study of \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_\_ – a weapon such as a gun, capable of firing a projectile using a confined space.

Types of firearms: \_\_\_\_\_\_\_\_\_\_\_\_ which include \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_

 Long guns which include \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**History**

The Chinese invented \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ more than \_\_\_\_\_\_\_\_\_\_ years ago. They used it to make \_\_\_\_\_\_\_\_\_\_\_\_\_ and shoot balls of flaming materials at their \_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a mix of potassium nitrate (aka \_\_\_\_\_\_\_\_\_\_\_), charcoal and \_\_\_\_\_\_\_\_\_. When ignited it \_\_\_\_\_\_\_\_\_\_ to \_\_\_\_ times its original size, causing a violent \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (if contained).

**Handguns**

Handguns fired with \_\_\_\_\_ \_\_\_\_\_\_ are called \_\_\_\_\_\_\_\_\_\_. American inventor \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_ developed and patented a model in 1835. It had a \_\_\_\_\_\_\_\_\_\_\_ that rotated and could be loaded with \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ and fired in rapid succession.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – a pistol that has a cylinder that turns as it is fired.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – a pistol that has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (clip) that holds \_\_\_\_\_\_\_\_\_\_\_\_ cartridges. The weapon \_\_\_\_\_\_\_\_\_\_ the used cartridge and \_\_\_\_\_\_\_\_\_\_\_ another when the trigger is pulled multiple times.

**Long Guns**

\_\_\_\_\_\_ \_\_\_\_\_ - guns typically require two hands for \_\_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_ – long guns that fire bullets

\_\_\_\_\_\_\_\_\_\_\_\_\_ – long guns that can fire single projectiles (\_\_\_\_\_\_\_) or small round pellets (\_\_\_\_\_\_\_)

**Rifling**

To improve \_\_\_\_\_\_\_\_\_\_\_ a bullet must \_\_\_\_\_\_\_\_ as it is projected. This is similar to the \_\_\_\_\_\_\_\_\_ in a well thrown football. The \_\_\_\_\_\_\_\_\_\_\_ that spiral down the barrel of a rifle or pistol create a raised area called \_\_\_\_\_\_\_\_. This pattern is called \_\_\_\_\_\_\_\_\_\_\_ and it differs from one manufacturer to another.

**Cartidges**

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**Caliber**

Caliber is a measure of the \_\_\_\_\_\_\_\_\_\_\_of a cartridge. While many are measured in hundredths of an \_\_\_\_\_\_\_ (ex: .22, .357, \_\_\_\_, \_\_\_\_\_), 9mm and \_\_\_\_\_\_\_\_\_\_ weapons are becoming more common.

**Bullets and Cartridge Casings**

Are scratched by the lands of the \_\_\_\_\_\_\_\_\_ as they proceed down the weapon. A bullet that has hit soft material may show these marks, called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on them. A weapon test fired into a \_\_\_\_\_\_\_\_ \_\_\_\_\_\_ will yield an undamaged round allowing for comparison.

Marks from the \_\_\_\_\_\_\_\_\_ \_\_\_\_\_, breech face, \_\_\_\_\_\_\_\_\_\_\_\_ and ejector may also be found on the spent casing.

**Gunshot Residue**

\_\_\_\_\_\_ – tiny particles of \_\_\_\_\_\_\_ and unburned \_\_\_\_\_\_\_\_\_\_ that are expelled from the front and back of the firearm pushed by the expansion of \_\_\_\_\_\_\_\_ when the bullet is fired.

**Testing for GSR**

Primer residues include \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ such as barium, antimony and lead.

Unburned \_\_\_\_\_\_\_\_\_\_\_ from the gunpowder may also be present.

**Distance Determination**

\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – The process of determining the distance between the \_\_\_\_\_\_\_\_\_\_\_\_ and a target, usually based on the distribution of \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ or the spread of a shot pattern.