

# AMMUNITION

Goal: To promote safe participation in hunting activities by introducing basic firearm and hunting safety principles and practices.

## Lesson 1: Parts of Ammunition

In this lesson you will:

- Identify basic parts of ammunition.

## Basic Varieties of Ammunition

Rifles, handguns and shotguns fire ammunition. A single piece of ammunition for a rifle or handgun is called a cartridge. It has a single projectile called a bullet.

The word “cartridge” also applies to a single piece of ammunition for a shotgun, but a more specific term is “shotshell.” A shotshell has either one projectile called a slug or many small pellets or shot.

Cartridges are classified generally into two main types:

- Rimfire
- Centerfire



Rimfire



Centerfire



### Rimfire Cartridge

The rimfire cartridge has the priming compound located on the inside of the rim—which is a narrow edge on the outside of the cartridge head. This type of cartridge is fired when a gun’s firing pin strikes the rim of the case, detonating the priming compound.



Rimfire cartridges are manufactured for use only in rifles and handguns.

Rimfire cartridges were once manufactured in a wide variety of calibers. Today, they are only made for the .17 HMR and .22 caliber firearms.

The .22 cartridges are available in several different varieties, including:

- short
- long
- long rifle
- magnum loads

### Centerfire Cartridge

The centerfire cartridge has the primer compound in a separate component that looks like small cap and is located in the center of the cartridge case head. When the gun’s firing pin strikes the center of the head, the impact detonates the primer.



Ammunition manufacturers design a variety of centerfire cartridges for use in specific rifles, handguns and shotguns.

Gun manufacturers design rifles, handguns and



shotguns to fire specific kinds of ammunition.

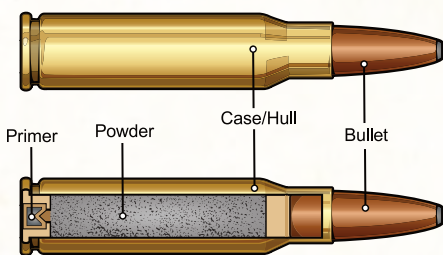
Because some cartridges are similar in overall size, shape and color, always be careful to select the correct ammunition for the firearm. Always keep ammunition stored in its original container. While hunting or target shooting, make sure you carry only the correct ammunition for that particular firearm.

## Ammunition for Rifles and Handguns

A cartridge for use in a rifle or handgun consists of four different parts or components:

- case
- primer
- powder
- bullet

A cartridge made up of these four components is called self-contained—it is a complete unit and ready to be fired once loaded in a firearm.



### Case

The case is a small cylinder usually made of brass or aluminum that is closed on one end. The cartridge case for rifles and handguns contains the other three components.

### Primer

The primer is a chemical compound that will ignite when it is struck. It is located in the closed end of the cartridge case, which is called the head. When struck by the gun's

firing pin, the primer creates a tiny spark that ignites the powder.

### Powder

The powder, also called gun powder or smokeless powder, is a fast-burning chemical compound that when ignited by the primer creates gasses and heat that force the bullet out of the gun barrel.

### Bullet

The bullet is the projectile that the gun fires at a target. For cartridges designed to be used in rifles and handguns, the bullet is a single projectile. Bullets may be made of a variety of materials, including metal, plastic or rubber. Bullets for hunting and target shooting typically are made of lead or may have a lead core with a copper coating, and may include inserts made of plastic or other materials.

Caliber is the measure of the outside diameter of the bullet. Caliber is also the measure of the inside diameter of the rifle or handgun barrel, called the bore.

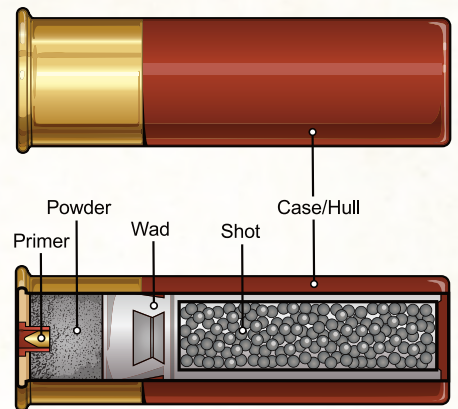
Hunters should choose an appropriate caliber and firearm for the type of game they will pursue to ensure a quick, clean, humane kill.

## Ammunition for Shotguns

Another variety of cartridge is the shotshell, which typically is fired in a shotgun. Some handguns can fire shotshells. The shotshell is similar to the rifle and handgun cartridge, but it is generally larger and has these five basic parts:

- case or hull
- primer
- powder
- wad
- shot

The shotshell fires multiple projectiles called shot and is effective for hunting small game, upland game birds, turkeys and waterfowl.



### Case or Hull

The case of the shotshell, also called a hull, is a large cylinder having a closed metal base holding a plastic tube that is used to contain the other four components. The plastic tube may be made of different solid colors, including red, purple, green, yellow, black, blue, etc.

In the manufacturing process, the end of the plastic tube is crimped shut to prevent the other shotshell components from falling out.

### Primer

The primer is a chemical compound that is impact-sensitive. Its purpose is to ignite the powder once it is struck by the firing pin.

### Powder

The powder, also called gun powder and smokeless powder, is a fast-burning chemical compound. When ignited by the primer, the burning powder creates gasses and heat that force the projectile out of the shotgun barrel.

### Wad

The wad is a fiber disk or plastic cup of the same diameter as the inside of the shotshell. It separates the powder from the shot and contains the shot as it travels through the shotgun barrel.





## Shot Size Table

| SHOT SIZES                        | •     | •   | •   | •    | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | • |
|-----------------------------------|-------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| Shot Number                       | 12    | 9   | 8   | 7½   | 7   | 6   | 5   | 4   | 3   | 2   | 1   | B   | BB  | BBB | T   |   |
| Diameter (in.)                    | .05   | .08 | .09 | .095 | .10 | .11 | .12 | .13 | .14 | .15 | .16 | .17 | .18 | .19 | .20 |   |
| Number of Lead Pellets per Ounce  | 2,385 | 585 | 410 | 350  | 300 | 225 | 170 | 135 | n/a | 90  | n/a | n/a | 50  | n/a | n/a |   |
| Number of Steel Pellets per Ounce | n/a   | n/a | 577 | 490  | 420 | 317 | 243 | 192 | 154 | 125 | 103 | 86  | 72  | 61  | 53  |   |

| BUCKSHOT SIZES | •   | •   | •   | •   | •   | •   |
|----------------|-----|-----|-----|-----|-----|-----|
| Shot Number    | 4   | 3   | 1   | 0   | 00  | 000 |
| Diameter (in.) | .24 | .25 | .30 | .32 | .33 | .36 |

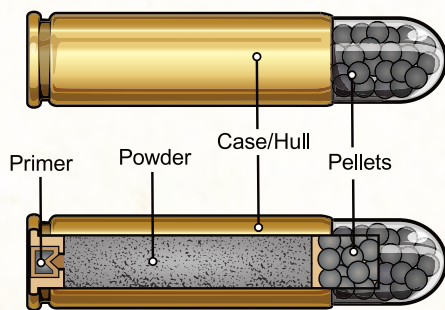
*Shot size can be adjusted for the game being hunted. As pellet diameter decreases, more shot can be placed in a standard shotshell load. The smaller the shot number, the larger the shot size.*

## Shot

The shot is the projectile in a shotshell. It consists of a measured amount of small pellets. Shot comes in different sizes and may be made from a variety of materials, such as lead, bismuth, tungsten and steel. Federal and state hunting regulations specify the size and material for shot that is legal for hunting the various game species. For instance, it is illegal to be in possession of lead shot when waterfowl hunting.

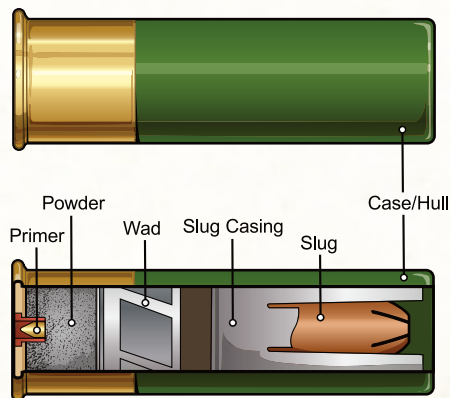
## Variations on Cartridges for Rifles, Handguns and Shotguns

Ammunition manufacturers produce cartridges for use in rifles and handguns that use a plastic capsule filled with small shot pellets. An example of when these cartridges are effective is hunting varmints and snakes that are close to a farmer's outbuildings and grain bins. Using this type of cartridge can help prevent damage to these structures.



Also, ammunition manufacturers produce shotgun cartridges that fire a single

projectile, sometimes called a slug or a sabot slug, which is effective for hunting large game, such as deer. While the shotgun slug cartridge may be fired from a smoothbore shotgun, accuracy is greatly improved if the shotgun barrel is rifled.



Ammunition is made with different kinds of powder, primers, cases, and bullets or projectiles, depending on the kind of gun it was designed for and the various purposes for hunting and shooting.

## Proper Care of Ammunition

The following rules should be observed at all times when handling ammunition.

- Store ammunition in the original factory box or carton.
- Store ammunition in a locked compartment separate from any firearms.

Always store ammunition in its original factory box or carton.

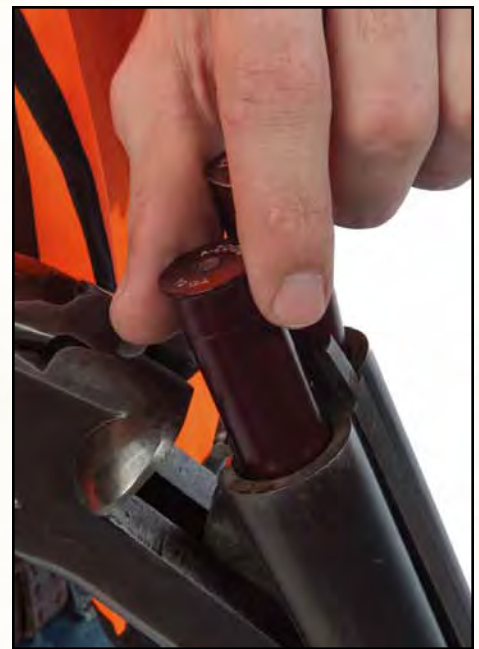


- Store ammunition in a cool, dry place.
- Keep ammunition free from fingerprints, dirt and grime.
- Never allow ammunition to come in contact with water, cleaning solvents or other chemicals.
- Never allow ammunition to be punctured or dropped on hard surfaces.
- Never store ammunition where it can be accessed by unauthorized people, especially children.

## Lesson 2: Matching Ammunition to the Firearm

In this lesson you will:

- Match ammunition to firearms.



For safe use of any firearm, use only the ammunition that has been designed for that firearm.

There are many manufacturers who make ammunition for use in rifles, handguns and shotguns. A particular firearm may be designed to fire a wide or a narrow range of cartridges. Firing the wrong ammunition in



a gun may cause it to jam or lead to serious injury or death to the shooter or bystanders.

A firearm with a semi-automatic action may be especially sensitive to the kind of ammunition used. Its reloading of a new cartridge after firing a round depends on the pressure of the previously fired cartridge. If there was too little or too much pressure, the action could jam.

When hunting or shooting, select the correct ammunition for the firearm, by matching information from these five sources:

1. Ammunition Box or Carton from the Manufacturer
2. Ammunition Head Stamp and Case
3. Firearm Barrel Stamp
4. Ammunition Suppliers
5. Firearm Owner's Manual from the Manufacturer

### 1. Ammunition Box or Carton from the Manufacturer

The original ammunition box or carton will be marked by the manufacturer with specific information about that package of cartridges.

**Rifle and handgun cartridge boxes include this information:**

- Name of the manufacturer
- Caliber of the bullet



- Name of the cartridge
- Category: rimfire or centerfire
- Weight of the bullet in grains
- Type of bullet
- Standard, +P, or +P+ powder load
- Designation as magnum, if appropriate
- Designation as belted, if appropriate

- Total number of cartridges or rounds per box
- Muzzle energy measured in ft lbs (foot/pounds)
- Muzzle velocity at different yards measured in fps (feet per second)
- Manufacturer item number
- Manufacturer lot number

**Shotgun cartridge boxes include this information:**



- Name of the manufacturer
- Gauge of the shotshell
- Length of the shotshell
- Size of the shot or caliber of the slug
- Weight of the shot or slug in grains
- Amount of gun powder measured in dram equivalent (DR. EQ.)
- Material the shot or slug was made from
- Designation as sabot slug, if so equipped
- Designation as high or low brass
- Designation as magnum, if appropriate
- Total number of cartridges or shotshells per box
- Manufacturer item number
- Manufacturer lot number

### 2. Ammunition Head Stamp and Case

The rifle and handgun cartridge head will be stamped with the manufacturer's name and may also have one or more of the following details:

- Caliber
- Name of the cartridge



- Country of origin
- Shotshell cartridge heads will be stamped with the manufacturer's name and may also include the gauge. In addition, important information about the shotshell is printed on the shell casing, the colored plastic tube, including shell length, designation as standard, magnum or super magnum load, and if it is suitable for hunting pheasant, turkey, waterfowl or big game.

### 3. Firearm Barrel Stamp

For rifles and handguns, the manufacturer will stamp the barrel with the caliber or name of the cartridge.



For shotguns, the manufacturer will stamp the barrel with the gauge, maximum chamber length, and designation as magnum or super magnum, if applicable.

### 4. Ammunition Suppliers

Sales clerks and gunsmiths who work in retail stores that specialize in firearms and ammunition

are good sources for information about the ammunition to use in a particular firearm.

When purchasing a firearm, whether new or previously owned, ask the salesperson to identify the kind of ammunition that is appropriate for that firearm and to explain any precautions





or exceptions regarding ammunition that may be available for that gun.

### 5. Firearm Owner's Manual from the Manufacturer

The manufacturer includes an owner's manual with the sale of

every new firearm. This manual includes detailed information about parts of the firearm, how to operate the firearm, safe use, cleaning, and selecting appropriate ammunition.

When purchasing a used firearm and the owner's manual

is not included, obtain one for free by writing to the manufacturer or visiting the manufacturer's website and downloading the manual free of charge.



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