



INSTRUCTOR GUIDE

LESSON 2B: FIREARMS BASICS

V. 2/2017

Basic Hunter Education 2014 Standards – Section 2 Objectives 13, 15, 20, & 54

Instructor Notes



This lesson introduces the students to the knowledge and skills necessary to describe the characteristics of different types of ammunition. This lesson corresponds with Chapter 2 (pages 23-27) in the student manual. Teach this lesson to the entire class prior to the students handling firearms.

Teaching Methods Used In This Lesson

- **Lecture**
- **Discussion**

Note: This lesson uses HE Tools software extensively as a teaching aid. This HE Tools icon () is shown when the software is being used in the lesson. It is vital that you practice with the software ahead of time so that you are familiar with the program and know how to navigate it properly. See Addendums A & B for helpful hints on software navigation.

Time Suggested



25 Minutes

Note: The “Firearms Basics” lesson is divided into two segments: Lesson 2A & 2B. These segments should be taught in sequence, preferably on the same day. Offer Lesson 3: Firearm Safety, or another lesson, between these segments to add variety.

<p><u>Materials Required</u></p> 	<ul style="list-style-type: none"> • Audio visual equipment (projector & screen) • HE Tools software installed on a laptop
<p><u>Station Set-up</u></p>  <p>10 minutes</p>	<ol style="list-style-type: none"> 1. Set up projector, screen, and laptop loaded with HE Tools. Cue HE Tools to the Topic “Ammunition”.
<p><u>Vocabulary Builder</u></p> 	<div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <p>Note: Do not read the vocabulary to the students. These are terms commonly used during this lesson, and the definitions are for instructor reference only.</p> </div> <p>Barrel stamp – Manufacturer’s stamp or etching on the barrel of the firearm indicating the chamber size and gauge or caliber.</p> <p>Caliber – The diameter of the bore or projectile. In rifled firearms it can be the distance between the lands or the grooves.</p> <p>Cartridge – A complete round of ammunition which includes primer, powder, case, and the bullet. Cartridges can be either rimfire or centerfire.</p> <p>Choke – A constriction in the muzzle of a shotgun barrel which controls the spread of shot.</p> <p>Centerfire – A cartridge with a primer located in the center of the cartridge case head.</p> <p>Comb – The part of the stock where your cheek rests while</p>

sighting.

Crimp – A patterned fold to seal the end of the shotshell.

Gauge – The size of the bore of a shotgun. It is measured by the number of lead balls, equal to the diameter of the bore, it takes to weigh one pound. (exception .410 which is a bore measurement)

Headstamp – A stamp on the end of a cartridge that states the caliber or gauge of the cartridge/shot shell.

Magazine plug – A wooden or plastic plug put into the end of the magazine tube to restrict the number of shells.

Rimfire – A cartridge where the rim of the cartridge's head is used to ignite the primer.

Shot – Many tiny projectiles in a shotshell made of lead, steel, or other material.

Shot shell – A round of ammunition for shotguns that includes primer, powder, wad, case, and shot or slug.

Sighting bead – Small round bead on top of the barrel near the muzzle used for sighting.

Squib fire – A firearms malfunction where a fired projectile does not have enough force behind it to exit the barrel.

Trigger squeeze – A slow steady squeeze of the trigger to release the shot without disturbing sight alignment or sight picture.

Ventilated rib – A flat plane raised above the level of the

barrel(s). It helps with sighting for accurate shotgun shooting and aids with cooling.

Wad – A paper or plastic barrier between the powder and shot within a shot shell that creates a gas seal between the powder and shot, and holds the shot together as it travels through and exits the barrel.

LESSON PLAN

<p><u>PART A:</u></p> <p><u>Focus Activity</u></p>  <p>1 minute</p>	<p>The purpose of the focus activity is to get everyone focused on the lesson. Say: “Now that we have learned some of the basic characteristics of modern firearms, let’s take a look at the ammunition used in modern firearms.”</p>
<p><u>PART B:</u></p> <p><u>Objectives</u></p>  <p>1 minute</p>	<p>State the learning objectives to the students. “At the end of this lesson, you will be able to:</p> <ul style="list-style-type: none">• describe the differences among rifle, shotgun, and handgun ammunition;• describe how ammunition functions in a firearm;• match ammunition to the respective caliber or gauge of firearm;• and select a proper firearm and ammunition for the game to be hunted.”
<p><u>PART C:</u></p> <p><u>Teaching Method</u></p>  <p>20 minutes</p>	<p>Ask: “Can anyone name two different categories of rifle and handgun ammunition?”</p> <ol style="list-style-type: none">1.  “Rimfire Cartridges” – identify and explain the function of the parts:<ul style="list-style-type: none">• rim• case• bullet• primer• powder• explain how rimfire primers work and explain the firing process

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2.  “Centerfire Cartridges” – identify and explain the function of the parts:
- head
 - rim
 - case
 - shoulder
 - neck
 - crimp
 - bullet
 - primer
 - powder
 - explain how centerfire primers work and explain the firing process
3.  “Calibers” – explain that caliber is a measurement of the diameter of the bullet:
- larger the number, larger the bullet
 - explain how the game hunted will dictate the size used
 - give examples (Squirrel - .22LR; Coyote - .223; Deer - .30-06)
 - identify and explain what a headstamp is
 - state that rimfire cartridges do not have a headstamp like centerfire cartridges
4.  “Shotshells” – identify and explain the function of the parts (*differs from rifle cartridges)
- rim
 - head
 - case
 - primer
 - powder
 - crimp*
 - wad*
 - shot*
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5.  “Shotgun Gauges” – explain how gauge is calculated:
 - number of bore sized lead balls to weigh one pound
 - larger the number, smaller the barrel
 - except .410 (diameter measurement; developed in US)
 - identify the headstamp on shotshells

 6.  “Shot Sizes” – explain the various sizes of shot:
 - larger the number, smaller the size
 - explain how the game hunted will dictate the size used
 - give examples (Quail - 7½-8; Pheasant - 6; Turkey - 4-6)
 - sizes are sometimes restricted in regulation

 7.  “Buckshot in Slow Motion” – use the video to demonstrate how the wad contains the shot and falls away. You can also use this time to explain how shot not only spreads out based on the choke, but it spreads out in when it arrives to the target.

 8.  “Using Proper Ammunition” – explain what a barrel stamp is and demonstrate the three options:
 - informs user of the proper size of ammunition for the firearm
 - explain the danger of using the wrong ammunition
 - have the students guess which ammo is correct
 - show all three examples and explain what happens if you use the wrong ammunition

Students are not being tested at this stage; they are gaining new knowledge. Your role as the instructor is that of a facilitator/coach to help the students learn the material. Lead the students through the discussion, and ensure everyone thoroughly understands the information and vocabulary.

PART D:

**Student
Summary**



3 minutes

Ask students to recall the important topics that were covered in the lesson. It is important for students to be able to verbalize these points. Use questioning strategies to flesh out answers.

- Which shot pellet has a larger diameter, #2 or #9?
- How are shotgun gauges measured?
- How does firearm and ammunition choice relate to hunting?
- What parts are different between a rifle and a shotgun?

END OF LESSON

Addendum

A



HE TOOLS HELPFUL HINTS – Navigation & Use

HE Tools™ is a collection of interactive animations and video demonstrations that help Hunter Education instructors convey important content related to the basic hunter education course. These visual tools enhance the learning experience for students.

Navigation

- Use the MAIN (or MENU in 2011 version) button on any page, at any time, to return to the main menu.
- Use the BACK button at any time to return to the previous page.

Animation Control

Many pages within HE Tools allow interactive navigation. You can use the ARROW KEYS on the keyboard to move forward and backward through the animations, frame by frame.

- press RIGHT ARROW KEY – moves forward one frame
- hold RIGHT ARROW KEY – fast forward
- press LEFT ARROW KEY – moves backward one frame
- hold LEFT ARROW KEY – fast reverse

The benefit of this is that you can show animations very slowly (e.g. how the firing pin hits the primer) or back up and play animations several times until the students understand the concept. When you are finished and wish to continue the animation normally, just click on the RESUME ANIMATION button or other available buttons on the screen.

Addendum

B



HE TOOLS HELPFUL HINTS – Firearms Basics

Rimfire Cartridge - This animation allows you to show the parts of the rimfire cartridge while loaded in the chamber of a firearm. (There is an EXTERNAL Parts view and an INTERNAL parts view) Ask students to identify/name the parts. Define the parts as they are identified. You can reveal the names individually by clicking on the part or click the SHOW PARTS button to reveal all the names at once. Click the HIDE PARTS button to hide the names. In addition, while viewing the INTERNAL parts of the cartridge you have the option to FIRE the cartridge by clicking the FIRE button. This animation shows how the firing pin strikes the primer and fires the shot.

Centerfire Cartridge - This animation allows you to show the parts of the centerfire cartridge while loaded in the chamber of a firearm. (There is an EXTERNAL Parts view and an INTERNAL parts view) Ask students to identify/name the parts. Define the parts as they are identified. You can reveal the names individually by clicking on the part or click the SHOW PARTS button to reveal all the names at once. Click the HIDE

PARTS button to hide the names. In addition, while viewing the INTERNAL parts of the cartridge you have the option to FIRE the cartridge by clicking the FIRE button. This animation shows how the firing pin strikes the primer and fires the shot.

Calibers - This section is a mini slide show which first defines caliber. It also shows several sizes of cartridge calibers. Use the mouse to click through the images or use the left/right arrow keys to navigate.

Shotshells - This animation allows you to show the parts of the shotgun shell while loaded in the chamber of a firearm. (There is an EXTERNAL Parts view and an INTERNAL parts view) Ask students to identify/name the parts. Define the parts as they are identified. You can reveal the names individually by clicking on the part or click the SHOW PARTS button to reveal all the names at once. Click the HIDE PARTS button to hide the names. In addition, while viewing the INTERNAL parts of the shotgun shell you have the option to FIRE the shotgun shell by clicking the FIRE button. This animation shows how the firing pin strikes the primer and fires the shot. It also follows the shot with the wad as it exits the muzzle.

Shot Sizes - This interactive chart is a visual aid that allows you to show the different shot sizes. (Shotgun shells are loaded with different sizes of shot) This interactive chart allows you to move the cursor over each of the shot sizes in the chart and see the corresponding shot size measurement next to the ruler. You will also see an internal view of a shotgun shell with the corresponding shot inside. You can also switch to the steel shot size chart by clicking the appropriate button on the screen.

Shotgun Gauges - This animation is a visual aid depicting shotgun gauges. The gauge refers indirectly to the bore

diameter of a shotgun. It is calculated as the number of lead balls of a bore diameter which weighs one pound (i.e. a ball the same width as a 12-gauge barrel would weigh one-twelfth of a pound). Instructor tip: Ask the class if they can tell you why a 20 gauge is called a 20 gauge. Then click on the 20 gauge barrel to show a lead ball drop out the diameter of the barrel and align with the other 19 lead balls at the bottom of the screen. You can click on any of the barrels for a similar demonstration. The .410 works differently because it's the actual barrel measurement.

Using Proper Ammunition - This interactive animation allows you to demonstrate the potentially dangerous scenarios of using IMPROPER ammunition (wrong gauge or shell length) for a 12 gauge shotgun with a 2 $\frac{3}{4}$ " chamber. The shotgun shell options include a **12 gauge 2 $\frac{3}{4}$ inch shell**, a **20 gauge 2 $\frac{3}{4}$ inch shell** and a **12 gauge 3 inch shell**. The object is to ask the class to tell you which of the three shot shell choices is the correct ammunition for the gun. Select any one of the shot shells by clicking on it. This loads the selected ammunition in the chamber and then shows you an animation of the shot shell being fired. Show all three scenarios to demonstrate each situation.

- **If you choose the 20 gauge 2 $\frac{3}{4}$ " shell** the shell will load and slide down about 1/3 of the barrel length. At that point the shell gets stuck and causes a barrel obstruction. The animation then prompts you to load another round of ammunition. The second round fires normally until it reaches the obstruction in the barrel, thus destroying the gun and injuring the user.
- **If you choose the 12 gauge 3" shell** the shell will load and fire, but will not open up fully due to the smaller size of the chamber area. This creates an intense amount of pressure and will certainly kick extremely hard, if not damaging the

	<p>gun and/or injuring the user.</p> <ul style="list-style-type: none">• If you choose the 12 gauge 2 3/4" shell the ammunition fires as intended.
<p><u>Addendum</u> <u>C</u></p> <p></p>	<p>FREQUENTLY ASKED QUESTIONS</p> <ol style="list-style-type: none">1. How do you remove the wrong ammunition from the barrel? <i>The safest way is to use a cleaning rod to remove the obstruction.</i>