4-H Shooting Sports Education Project

Name ___________________________

Address _________________________

City ____________________________  County ________________________

Club ____________________________
4-H Shooting Sports Education

Your positive growth and development is the primary goal of the 4-H Shooting Sports Education program.

Objective: This guide was developed to help youth learn about shooting sports. It provides “learn-by-doing” activities that teach about archery and firearm parts and basics. Safety is of primary importance throughout this project.

4-H Shooting Sports Education goals:
- To promote the highest standards of safety, sportsmanship, and ethical behavior, including sound decision making
- To teach safe and responsible use of firearms and archery equipment, self-discipline, and concentration
- To strengthen families through participation in lifelong recreational activities
- To enhance development of self-concept, character, and personal growth through safe involvement in shooting activity
- To encourage responsible, self directed, and productive members of society
- To develop participation in natural resources and related natural science programs by exposing participants to the content through shooting, hunting, and related activities
- To expose youth to the broad array of vocational and lifelong hobbies related to the shooting sports

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Table of Contents

Safety ........................................................................................................................................ 1
Eyes & Ears ................................................................................................................................. 2
Range Commands and Lead Concerns ....................................................................................... 3
Discipline Descriptions .............................................................................................................. 4
Archery ...................................................................................................................................... 6
Hunting ....................................................................................................................................... 8
Muzzleloading ............................................................................................................................ 10
Pistol .......................................................................................................................................... 12
Rifle ........................................................................................................................................... 14
Shotgun ...................................................................................................................................... 16
Ammunition ................................................................................................................................. 18
Resources .................................................................................................................................. 19
Record Sheets ............................................................................................................................ 22
Glossary ..................................................................................................................................... 26

Shooting Sports Safety

Cardinal Rules:
Always keep the arrow or muzzle pointed in a safe direction.
Always keep your finger off the trigger or string until ready to shoot.
Always keep your firearm or bow unloaded until ready to use.

Other safety rules to follow:
» Be sure your firearm or archery equipment is safe to operate.
» Know how to use firearm or archery equipment safely.
» Use only the correct ammunition for your firearm or archery equipment.
» Know your target and what is beyond it.
» Wear eye and ear protection as appropriate.
» Never use alcohol or drugs.
» Store guns so they are not accessible to unauthorized persons.
» Be aware that certain types of firearms and many shooting activities require additional safety precautions.

Safety — Safety — Safety
Eyes & Ears

Before you learn to shoot, you need to determine your eye dominance.

Explain how to determine your eye dominance (ask your shooting sports instructor, if you need help):

Are you right- or left-eye dominant (circle one)?

Help another person determine their eye dominance:

Who I helped: ____________________________

draw eye and ear protection on the head shown:

Eye and ear protection are mandatory for all shooters, coaches, and others on the range. Vision is priceless, so protect your eyes. The impact of an injury could be serious. Stray or deflected pellets, target chips, gases and powder residue from shotguns and other foreign objects have the potential to damage the eyes. Wearing shooting glasses protects them. Many shooters combine their eye protection with corrective lenses or tinted lenses that increase contrast, reduce light intensity, or enhance vision in other ways.

Like sight, hearing is a precious gift. The sound levels produced by any powder firearm can cause hearing damage. Hearing damage is usually gradual, so the shooter seldom notices the loss until it is serious. The damage is cumulative and permanent. The damage from the prolonged exposure during target shooting or hunting is a real and present threat. Shooting without hearing protection does not show toughness. It shows foolishness. Inexpensive and comfortable hearing protection (plugs or muffs) are available. Some shooters use both plugs and muffs for added protection. Choose the type of protection that fits your shooting style and budget. Always wear them on the range.
Range Commands

Range commands will vary from discipline to discipline and range to range. It is important that you always read, understand, and follow the range commands that pertain to the range you are on.

Activity: Write the range commands for every discipline that you are taking in 4-H this year. If your county does a “Round Robin” you will need to write up (and be very familiar with) a number of different range commands (use separate pieces of paper).

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Lead from Firearms

Lead from the balls or exposed lead ammunition pose potential health problems. Hands should always be washed after handling the 100% pure lead balls used in muzzleloaders. The lead exposure from muzzleloading is small, but it is a good idea to avoid exposure as much as possible. Lead balls should never be placed in the mouth.

Even percussion caps and centerfire primers are a source of lead. The priming compound used in modern caps is lead stypnate. For this reason, care should be taken when handling caps. Lead exposure is cumulative.

Avoid eating or drinking on the range. Do not eat or drink until after the hands have been washed. People should not smoke until after the hands have been washed.

Suggestion for coaches and shooters: Always have anti-bacterial moist towelettes available on the range so you can wipe your hands carefully once you are through shooting.
Discipline Descriptions

Archery: Archery involves a fascinating group of sports for people of all ages. The fundamentals are simple. The requirements are few. A new archer can be shooting fairly well within a short time, if he or she has the benefit of a planned approach to developing the basics of form.

The 4-H Shooting Sports archery discipline covers the basics of archery. It provides the beginning archer with a broad, sound foundation for learning the discipline and enjoying archery over a lifetime. Many approaches have been used to teach archery. Some are effective; others interfere with learning. The approach used in the 4-H program has proven successful with young people and adults across the country.

Muzzleloading: Muzzleloading firearms are more complicated than modern firearms because the shooter loads each shot, rather than using a cartridge. You will learn a great deal about firearms by learning to load, shoot, and care for a muzzleloader. Therefore, this class is generally reserved for experienced shooters. Learning about muzzleloading firearms is also a great way to relive history and learn about the firearms that our ancestors used every day to provide food, defend their families, fight their wars, and secure our independence.

Outdoor Pursuits: Learning about the outdoors and wildlife is fun, important for hunters, and can lead to lifelong study. Hunting is a major part of the outdoor experience for some people while others like to "hunt" with a camera and some just like to be outside and enjoy nature. Wildlife studies will enhance your outdoor experience, whatever your goal. It teaches many different things, including: necessary habitat components, carrying capacity, predator and prey relationships, wildlife identification, species interactions, wildlife management and conservation, tracking, and the role of hunting regulations in management of wildlife populations.
Youth who are interested in hunting require additional information, including the proper use of hunting arms and ammunition (archery, handguns, rifles, shotguns), basic firearm safety, hunting safety, muzzle control in the field, zone of fire, use of blaze orange, planning a safe hunt, first aid, hunting ethics, hunting regulations, open seasons, bag limits, licenses required, lawful methods of taking, target identification, and knowledge of proper field care of game. Often, game/wildlife cooking is included in wildlife hunting studies.

**Pistol:** The 4-H pistol program provides a comprehensive course that fills the practical needs of pistol owners and non-owners, shooters, and non-shooters. Its primary purpose is to teach the basic knowledge, skills, and attitude necessary to safely and successfully pursue an interest in pistols and shooting. This program provides a student with a solid foundation for a lifetime of safe and enjoyable pistol activities such as competitive shooting, plinking, and collecting.

**Rifle:** Shooting a rifle is an acquired skill that calls for a step-by-step learning approach like any other sport. Taken individually, each step is simple. The right rifle, target, and ammunition coupled with practice and desire to learn will enable you to become a good marksman.

**Shotgun:** Shotgun shooting is exciting to many young people. Proper preparation, organization, and orientation are the keys to successful instruction. Since youth development is the foundation of the program, the instructor must keep the young people in mind at all times. Safety is always a primary consideration. The instructor must maintain the highest standards of safety at all times for participants, other instructors, and all assistants. The methods used here introduce fundamentals of firing a shotgun, informal games that can be used to increase shotgun shooting skill, and fundamentals of the formal target games with shotguns.
Name the types of bows. Label the parts of the archery equipment using the letters listed at the bottom of the page. Then find the words in the puzzle below.


NOTE: two word terms are shown as one word.
Work with your Shooting Sports Instructor to determine the project that is best for you. Your instructor will consider your interests, age, experience, and abilities to help you determine the project that is right for you.

**Project Ideas**
- String a bow.
- Fletch an arrow.
- Make a quiver.
- Make a bowstring.
- Make a finger tab or arm guard.
- Make a box stringer.
- Make a target – traditional, creative, 3D, for various skill levels. Using readily available items.
- Record your practice on video to analyze your technique.
- Record a hunt with a camera or video.
- Make posters of range rules, archery safety principles, or archery tackle with parts identified.
- Construct quiz boards that match parts with points indicated by letters, numbers, or other means.
- Develop a poster or demonstration to show the steps of good archery shooting.
- Make a quiver for a bow support for range use.
- Display a model or diagram of a compound bow, labeling all its functioning parts.
- Compare trajectories of several bows with equal draw weights but different designs. Present the results as graphs and discuss them in your notebook or put them in poster form. Sample targets may be included.
- Exhibit an item you have made for use with compound bows, for example a bow scale, string jig, compound bowstringer, or bow rack.
- Present an action demonstration on any of the ideas listed above.

**Games & Activities**

Shooting games and activities make learning fun. Ask your instructor about how you do them. Older youth are encouraged to teach younger 4-H’ers (work with the archery instructors to determine the best time to do this).

- Clout shooting.
- Flu flu shooting.
- Archery golf.
- Wind shooting.
- Card games (21/poker/...).
- Tic Tac Toe.
- 3-D archery shoots.
- Field archery shoots.
Outdoor Pursuits

Draw a line from the animals at the top of the page to the habitat you would expect to find them in. Then use their names listed below to complete the word search.

COYOTE
DEER
FISH
FOX
FROG
HAWK
RABBIT
RACCOON
SNAKE
TURKEY
TURTLE

YDLBDZTYRTBEXD
EAQDYFIIAETOYOC
KLEJNBUCBDPZUBE
RJNVOKCFBRHNYD
UDOQZOCIKEAKYVC
TKWNOASCOSSRMEX
MTKNQHLSGIYNLSO
BPEFLIUUGWGLTALF
QUAILDLPZRLXKC
YLSQWEOAWUGORFE
QYXDNERWBTMPXYW
PUAHRHBQQKBJUA
QXLKQUEHDAWIIQ
BCRXJUUZFPXMAPC
QRTLEQRQDNWWJHH

Work with your Shooting Sports Instructor to determine the project that is best for you. Your instructor will consider your interests, age, experience, and abilities to help you determine the project that is right for you.

Project Ideas
- Make plaster casts of tracks.
- Carve a decoy.
- Tan a hide.
- Make a duckwing board.
- Make a deer jawbone board.
- Build bird feeders.
- Build bird houses.
- Build bat houses.
- Make deer antler jewelry (buttons, tie slides, etc.).
- Create fur crafts (hat, gloves, etc.).
- Try taxidermy.
- Take wildlife photographs.
- Make a duck, goose, or turkey call.
- Identify scat.
Games & Activities

Games and activities make learning fun. Ask your instructor about how you do them. Older youth are encouraged to teach younger 4-H’ers (work with the hunting instructors to determine the best time to do this).

- Nature bingo.
- Hunter course.
- Tracking.
- Scent trails.
- Caveman skeet.
- Animal role playing (predation, food reserves, etc.)
- Carmelita hunt.
- Camera hunt.
- Dilemmas & case studies.
Name the locks. Label the parts of the muzzleloader using the letters listed with the appropriate word at the bottom of the page. Then find the words in the word search.

A - BARREL
B - BUTT PLATE
C - CAP LOCK
D - FLINT LOCK
E - FRONT SIGHT
F - HAMMER
G - INLINE LOCK
H - MATCH LOCK
I - MUZZLE
J - RAMROD
K - REAR SIGHT
L - SET TRIGGER
M - STOCK
N - TRIGGER GUARD
O - WHEEL LOCK
Work with your Shooting Sports Instructor to determine the project that is best for you. Your instructor will consider your interests, age, experience, and abilities to help you determine the project that is right for you.

**Project Ideas**
- Show the parts of a muzzleloader, including diagrams of different ignition systems.
- Show the differences between shooting muzzleloading firearms and cartridge firearms of the same type.
- Make a timeline of the history of muzzleloading firearms or black powder.
- Study a re-enactment local event or living history.
- Make a poster to present safe handling and storage of percussion caps and black powder.
- Show the proper loading sequence for muzzleloading rifles.
- Demonstrate proper cleaning procedures for a muzzleloading rifle to an appropriate audience.
- Show or demonstrate muzzleloading range safety.
- Make a loading stand.
- Make and display a possibles bag.
- Make a powder measure.
- Make a powder horn.
- Make a set of cross sticks.
- Build a shooting bench.
- Build a rifle or pistol with a clear barrel to show the correct load.
- Refinish a gun stock.
- Learn to brown or blue a barrel.
- Make a gun rest.
- Make a kneeling roll.
- Describe how to clean and store a muzzleloader.

**Games & Activities**

Shooting games and activities make learning fun. Ask your instructor about how you do them. Older youth are encouraged to teach younger 4-H'ers (work with the Muzzleloading instructors to determine the best time to do this).

- Participate in a muzzleloading hunt or re-enactment.
- Splitting a ball on a double headed axe to break two clay targets with one shot.
- Split a playing card in half.
- Stick a tomahawk.
- Start a fire with flint and steel.
- Cut the string holding the target.
Name the types of pistols. Label their parts using the words listed at the bottom of the page. Then find them in the word search.

A - BARREL
B - CYLINDER
C - FRAME
D - FRONT SIGHT
E - GRIP
F - HAMMER
G - MAGAZINE
H - MUZZLE
I - REVOLVER
J - REAR SIGHT
K - SEMI-AUTOMATIC
L - SLIDE
M - TRIGGER
N - TRIGGER GAURD

Q H B O X T H G I S R A E R T
D S A L J W O A N E B J T C R
Z C W M F U M M Y N R B W Q I
C I T A M O T U A I M E S L G
R S P F K E G Z B Z S P K B G
W E D I L S R Z A A F M X P E
M T D V T H U L I G R Q Y V R
Q V T N Z H O E R A A R M B G
V W T R I G G E R M M U E S U
W N B K O L V B J H E P I L A
E L M P P L Y M J O C D A V R
V M T S O I C C F G H I B A D
A S I V S H R Y O A C W F X W
L B E Z C Q D G E T I J X O C
M R I C D T H G I S T N O R F
Work with your Shooting Sports Instructor to determine the project that is best for you. Your instructor will consider your interests, age, experience, and abilities to help you determine the project that is right for you.

**Project Ideas**
- Illustrate the parts of the pistol you are using.
- Develop a board game on identification of pistol parts or functions.
- Illustrate the cardinal rules of pistol safety.
- Discuss or present range commands and proper responses to them.
- Illustrate the types of handguns and handgun ammunition.
- Explain the combination of make, model, action type, and chambering for one type of handgun.
- Develop a handgun shooting game. Outline the rules and the procedures used in your game.
- Demonstrate basic pistol shooting form.
- Demonstrate the position and grip options.
- Compare your group sizes using different grips or positions.
- Make a shooting support.
- Shoot a series of groups, adjusting the sights a given amount and direction for each group. Explain how sight adjustment can move the point of impact relative to the point of aim.
- Explain how to score a pistol target using a scoring gauge.
- Develop a board game on identification of pistol parts or functions.
- Make a pistol pellet trap.

**Games & Activities**
Shooting games and activities make learning fun. Ask your instructor about how you do them. Older youth are encouraged to teach younger 4-H'ers (work with the pistol instructors to determine the best time to do this).

- Shoot at unusual targets (candles, soap, playing cards, etc.)
- Team or relay shooting.
- Challenge matches.
Name the types of actions. Label the parts of the rifle using the words listed at the bottom of the page. Then find them in the word search.

A - BARREL
B - BOLT
C - BREAK
D - BUTT PLATE
E - FRONT SIGHT
F - FOREARM
G - LEVER
H - MAGAZINE
I - MUZZLE
J - PUMP
K - REAR SIGHT
L - SAFETY
M - SEMI-AUTOMATIC
N - STOCK
O - TRIGGER
P - TRIGGER GUARD
Work with your Shooting Sports Instructor to determine the project that is best for you. Your instructor will consider your interests, age, experience, and abilities to help you determine the project that is right for you.

**Project Ideas**
- Make a rifle sling.
- Make a cartridge holder.
- Make a gun cleaning kit.
- Make a target stand.
- Make targets (traditional and creative and challenging).
- Make a bench rest.
- Make a rifle rest.
- Make a shooting bench/table.
- Make shooting sticks.
- Diagram and label a rifle and its functional parts.
- Present the rules of safe firearms handling on the range.
- Show how sight adjustments are made and how they connect the point of aim to the point of impact.
- Show how to score a target.
- Demonstrate the proper use of inward and outward scoring gauges.
- Graph your progress in shooting from one position (standing, kneeling, sitting, prone) and note the reasons for the progress.
- Create a shooting game and explain the rules.
- Experiment with the different shooting positions.
- Show fire power demos.
- Explain the selection processes for larger calibers and cartridges.

**Games & Activities**

Shooting games and activities make learning fun. Ask your instructor about how you do them. Older youth are encouraged to teach younger 4-H'ers (work with the rifle instructors to determine the best time to do this).

- Challenge matches.
- Shooting at unusual targets (bar of soap, balloons, birthday candles, tin cans, matches, clay targets, styrofoam balls, animal crackers, fruit, tic-tacs, playing cards).
- Ballistics tests (grouping, speed, energy).
- Team or relay shooting.
- Range estimation (can be non-shooting).
- Discuss bullet selection for various barrels.
Name the actions. Label the parts of the shotgun using the letters that correspond to the parts listed at the bottom of the page. Then find the words in the word search.

A - BARREL
B - BOLT ACTION
C - BREAK
D - BUTT
E - FOREARM
F - MAGAZINE TUBE
G - MUZZLE
H - PUMP
I - SAFETY
J - SEMI-AUTOMATIC
K - SIGHT BEAD
L - STOCK
M - TRIGGER
N - TRIGGER GUARD

S E M I A U T O M A T I C M X
B B M U H V V A H S B L K U R
Q M P R M G Y Q I U D E L Z R
L L A Q U T W G T P T R H Z S
S E K G E R H T F M R R L L S
B U V F A T E H Y I A X E T
I L A E B Z K G U A G B W U V
U S I E R I I S G Q G P M U P
M R A E R O F N K I E M I Y M
L D C B E U S I E Z R W K I M
Z R E G V T T K N T G T H H B
X N H F Z S O I Z E U P T H V
N P G D N D C C C B A B K D Y
B R E A K F K G U I R I E F G
N O I T C A T L O B D E N W L
Work with your Shooting Sports Instructor to determine the project that is best for you. Your instructor will consider your interests, age, experience, and abilities to help you determine the project that is right for you.

**Project Ideas**
- Make a poster with the parts of a shotgun, action types or ammunition parts.
- Construct a quiz board covering shotgun parts or action types.
- Make a poster showing the principles of shotgun safety and proper shotgun handling.
- Make a poster showing the cardinal rules of safe firearms handling.
- Make a poster or display that illustrates one of the safety considerations in shotgun shooting (for example, show the range of various shot sizes).
- Make a poster showing the proper way to pass a shotgun between two people.
- Make a poster showing range layout or how to determine eye dominance.
- Make a poster showing the six fundamentals of shotgun shooting.
- Make a gun stand or gun cabinet.
- Make a poster showing the proper way to clean a shotgun.
- Discuss or display shotgun cleaning equipment and supplies, cleaning techniques for a given shotgun, and shotgun storage.
- Make a video and explain how you prepare for a hunt.
- Make a poster to show one of the following: range rules, shoot - don’t shoot, “zones of fire.”
- Make a gun sleeve or hunter’s belt.
- Make a shotgun shell box with a lid and lock.
- Make a leather recoil reducer.
- Make a cheek pad.
- Make a choke-tube pouch.
- Describe the purpose of each part of the shotgun to your parents.
- Describe the purpose of the shotshell to your parents.

**Games & Activities**

Shooting games and activities make learning fun. Ask your instructor about how you do them. Older youth are encouraged to teach younger 4-H’ers (work with the shotgun instructors to determine the best time to do this).

- Trap.
- Skeet.
- Sporting clays.
Name the ammunition. Label the parts of the ammunition using the letters listed at the bottom of the page. Then find them in the word search.

A - ARROW
B - BULLET
C - CASE
D - CENTERFIRE
E - FLETCHING
F - HULL
G - LEAD BALLS
H - NOCK
I - PELLET
J - POINT
K - POWDER
L - PRIMER
M - RIM FIRE
N - SHAFT
O - SHOT
P - SHOTGUN SHELL
Q - SHOTGUN SLUG
R - WAD
Resources
Indiana 4-H members can find a lot of hunting information at the Indiana Department of Natural Resources (IDNR), Division of Fish & Wildlife website:
www.state.in.us/dnr/fishwild/

Additional information is at the departmental website:
www.state.in.us/dnr/

and choose “Fish & Wildlife.” You’ll find information about Hunting (Indiana Hunting and Trapping Regulation Guide), nongame and endangered wildlife, and fishing (Fishing Guide). Information about hunter education is found under “Law Enforcement.”

National Muzzleloading Rifle Association (NMLRA)  www.nmlra.org
The National Muzzleloading Rifle Association exists to promote, support, nurture, and preserve NMLRA’s and our nation’s rich historical heritage in the sport of muzzleloading through recreational, educational, historical, and cultural venues such as match competition, hunting, gun making and safety, historical re-enactments, exhibits, museums, libraries, and other related programs. NMRA’s headquarters is in Friendship, Indiana. Check the website for national shoots and rendezvous as well as territorial matches and postal matches.

National Alliance for the Development of Archery (NADA)  www.WorldArcheryCenter.com
NADA is a non-profit educational organization dedicated to training and certifying archery instructors and helping to introduce archery to newcomers. While their mission is in certifying new instructors, they also offer a selection of beginner archery equipment through industry partners. Visit the website to see a listing of sales on bows, targets, arrows, and fletching.

Indiana Hunter Education Association (IHEA)  www.inhea.com
The purpose of the IHEA is to promote high quality instruction in every hunter education class taught in Indiana. The association works to support instructors by providing instruction, information, equipment, and materials that will make planning and teaching a hunter education course easier and more enjoyable. The IHEA acts as a liaison between Indiana volunteer instructors and the DNR (Department of Natural Resources) in representing your suggestions and concerns. The goal of the IHEA is to make Indiana hunters safe, responsible, and ethical through education and example. Visit this website to find out about camp opportunities (go to “What is IHEA” and then choose “camps”) and visit the IHEA kids page.

National Rifle Association (NRA)  www.mynra.com
This site provides a variety of information from legislative and political information to results of shooting competitions. There is information about hunting, shooting, youth programs, safety, training, women’s programs, and much more. The NRA Store has a wide variety of publications that would be of interest to youth wishing to study a firearm discipline in depth.
Use shooting terms to complete the crossword puzzle. Most of the terms can be found in the glossary.

ACROSS
1. moveable locking device that seals a cartridge in the chamber of a firearm
2. lever used to release a sear and fire a firearm
3. specialized arrow designed for limited flight distance
4. cartridge with priming compound sandwiched between the layers of a folded rim
5. body of an arrow
6. front portion of a stock on firearms with a two-piece stock; forend or fore stock
7. a firearm using a primer or battery cup located in the center of the cartridge head
8. hand-held mechanical device to fire the bow
9. self-loading firearm
10. mechanical parts of a muzzleloader or other firearm
11. protective device surrounding the trigger
12. terminal end of the bore, opening from which the projectile or projectiles emerge
13. device to assist in aligning the eye with the bore or bow and pointing the aligned system at a target
14. bow designed to give the shooter a mechanical advantage during the draw
15. straight or slightly reflexed bow based upon the old English design
16. firing mechanism where a match is inserted into a touch hole to ignite the powder charge
17. firearm lock using a spring-loaded, serrated wheel whirling against a pyrite flint to produce a shower of sparks and ignite a priming powder charge
18. conventional bow with the tips of the limb curved toward the back of the bow
19. shooting position where the shooter stands upright and supports the firearm with the arms and shoulder alone
20. continuing the appropriate action of the shooting sequence through the shot until the target is struck

DOWN
1. shoulder end of a rifle or shotgun stock
2. flange at the base of a cartridge case
3. lock used on muzzleloading firearms, featuring a cock, flint, frizzen and flash pan
4. trigger used to activate a hair-trigger sensitivity on a firing trigger in a double-set trigger arrangement
5. pressing the trigger straight back through a firing sequence without disturbing the sight alignment and sight picture
6. the tube that contains and directs the projectile
7. part of a firearm where ammunition is stored prior to being inserted into the chamber for firing
8. holding the string at full draw
9. hollow cup of copper or gilding metal containing a small amount of pressure sensitive explosive, used to ignite the powder charge in percussion or caplock firearms and cap-and-ball revolvers
10. location at which a projectile strikes another object
11. wooden or composite materials acting as a handle for the firearm
12. feathers or vanes used to steer and stabilize the flight of an arrow
13. rod used for loading or cleaning firearms
14. process of pulling the string back to the anchor point
15. slotted device at the end of an arrow to receive the string or the slots in the ends of conventional bow limbs to anchor the string
16. projectiles developed for use in air rifles and pistols, consisting of a hollow-based lead cup. Also a shooter's synonym for shot in shotshells
17. extremely hard stone used in flintlock firearms and arrowheads
Personal Goals Record Sheet
(Complete at the beginning of the project year.)

What I would like to learn in this project:

What I would like to do in this project:
(with the club or making something related to shooting or wildlife):

Other goals, objectives, questions, etc.:
Summary Record Sheet
(Complete at the end of the project year.)

What I experienced in this project
What did you do this year in the 4-H Shooting Sports Education project?
(Summary of what firearms, archery, or other equipment you used, what project/exhibit you did, field trips that you took, etc.):

What I learned in the 4-H Shooting Sports Education project
(Explain what you learned. Some examples are: shooting skills, information gained about wildlife and other natural resources, safety concepts that you learned, and learning to work with others.):

Describe how the 4-H Shooting Sports Education project has helped you:

How can you use what you learned in the 4-H Shooting Sports Education project in other 4-H projects, at home, or at school?
My Exhibit

What exhibit did you make this year?

Why did you decide on this particular exhibit?

How did you make your exhibit (what steps did you follow, who helped you, etc.)? Include a sketch or photo of your exhibit.

Will you be able to use your exhibit after the fair? If so, how?
Meeting Log Sheet

Date: ____________________________

Explain what you did and what you learned. Use the back of this sheet for additional information or sketches.

Sketches, pictures, etc.
Glossary

**action** - the mechanical parts that load, fire, and unload a modern firearm

**anchor** - 1) holding the string at full draw; 2) position of the string, fingers, hand, or mechanical release at full draw (see also high anchor and low anchor)

**ball** - a spherical lead projectile, used in muzzleloading firearms

**barrel** - the tube that contains and directs the projectile [see also bore, chamber, rifling, muzzle]

**bolt** - 1) a moveable locking device that seals a cartridge in the chamber of a firearm, usually contains the firing pin and a means of extracting cartridges from the chamber; 2) a quarrel or arrow for a crossbow; 3) a threaded rod used as a connector

**breech** - 1) the rear portion of the barrel; 2) the area where the touch hole is located for the ignition of a muzzleloader

**butt** - 1) the target backing device designed to stop and hold arrows without damage, may be made of foam blocks or baled materials like paper, straw, excelsior, sugar cane fiber, or marsh grass; 2) a shoulder end of a rifle or shotgun stock; 3) a shooting stand or blind

**cap lock** - a style of muzzleloading lock featuring a hammer and nipple which uses a copper foil percussion cap with lead stynphate to produce the ignition spark

**centerfire** - a firearm using a primer or battery cup located in the center of the cartridge head

**compound bow** - a bow designed to give the shooter a mechanical advantage during the draw, changing the shape of the draw force curve and yielding a higher efficiency in energy transfer to the arrow

**draw** - 1) the process of pulling the bow string back to the anchor point; 2) a type of anchoring system (such as Apache draw, high draw, low draw; see anchor)

**fletching** - feathers or vanes used to steer and stabilize the flight of an arrow

**flint** - an extremely hard stone used in flintlock firearms and arrowheads

**flintlock** - 1) a lock used on firearms, featuring a cock, flint, frizzen, and flash pan; 2) a firearm using a flint-and-steel lock
flu-flu - a specialized arrow designed for limited flight distance and often used in shooting flying targets, game birds or small game; use spirally wound full-length feathers or six full-length feathers to slow arrow flight

follow through - 1) continuing the appropriate action of the shooting sequence through the shot until the target is struck; 2) holding the bow and string hands or the firearm in their release or shooting positions until the arrow or bullet strikes the target; 3) continuing the swing on a moving target until the target is struck

forearm - the front portion of a stock on firearms with a two-piece stock; also known as the forend or fore stock

hull - a shotshell case

inline lock - a muzzleloader with the nipple directly in line with the barrel axis and the percussion cap is struck by a spring loaded striker

lock - the mechanical parts where primary ignition takes place in a muzzleloader

longbow - straight or slightly reflexed bow based upon the old English design; sometimes used in fish and game regulations to designate all bows with the exception of crossbows

magazine - 1) the part of a firearm where ammunition is stored prior to being inserted into the chamber for firing; 2) a controlled storage area for ammunition or components

matchlock - 1) a firing mechanism where a burning cord or "slow match" is held in the serpentine which lowers it into a touch hole or pan to ignite the powder charge; 2) a firearm using this type of lock

muzzle - 1) the terminal end of the bore; 2) the opening from which the projectile or projectiles emerge

nipple - a small hollow tube threaded into the breech of a muzzleloading firearm that holds the percussion cap ready to be struck by the hammer

nock - 1) a slotted device at the end of an arrow to receive the string; 2) slots in the ends of conventional bow limbs to anchor the string

pellets - 1) projectiles developed for use in pellet rifles and pistols, consisting of a hollow-based lead cup; 2) a shooter's synonym for shot in shotshells

percussion cap - 1) a hollow cup of copper or gilding metal containing a small amount of pressure sensitive priming powder, used to ignite the powder charge in percussion or caplock firearms and cap-and-ball revolvers; 2) a copper foil cap with lead styphnate
point of impact - the location at which a projectile strikes another object or the surface of the earth

primer - a cap, tube, or wafer containing percussion powder or compound used to ignite a propellant charge

ramrod - a rod used for loading or cleaning firearms

recurve bow - a conventional bow with the tips of the limb curved toward the back of the bow

release - 1) permitting the bowstring to return to its resting position, firing an arrow; 2) a hand-held mechanical device to fire the bow

rim - the flange at the base of a cartridge case; may be used as a location for a priming compound (rimfire cartridges) or for headspacing and extraction purposes

rimfire - a cartridge with priming compound sandwiched between the layers of a folded rim, fired by striking the rim and crushing the priming compound between the metal surfaces

semi-automatic (semi-auto) - a self-loading firearm design in which some of the energy developed by the fired cartridge is used to operate the action; may be operated by gas or recoil

set trigger - a trigger used to activate a hair-trigger sensitivity on a firing trigger in a double-set trigger arrangement

shaft - the body of an arrow

sight - a device to assist in aligning the eye with the bore or bow and pointing the aligned system at a target

stock - wooden or composite materials acting as a handle for the firearm

trigger - the lever used to release a sear and fire a firearm

trigger control - 1) keeping the finger off the trigger except during a shot; 2) pressing the trigger straight back through a firing sequence without disturbing the sight alignment and sight picture

trigger guard - a protective device surrounding the trigger

wheel lock - 1) a muzzleloading lock using a spring-driven, iron wheel whirling against a piece of iron pyrite to produce a shower of sparks and ignite a priming powder charge; 2) a firearm with a wheel lock action