

Archery Equipment, Safety and Range Commands

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Objectives

Participating young people and adults will!

1. Become familiar with the history of archery.
2. Understand the basic rules of safe archery shooting.
3. Recognize and understand the range commands being used in the program.
4. Recognize and demonstrate various pieces of archery tackle and their parts.
5. Determine eye dominance.
6. Learn how to select an appropriate bow.
7. Learn how to string and unstring a recurve bow properly.
8. Have fun while learning.

Roles for Teen and Junior Leaders

- Present portions of the lesson.
- Lead demonstrations.
- Tutor or quiz participants on identifying equipment and accessories.
- Act as range officers for demonstrations.
- Assist in setting up bows for next session.

Parental Involvement

- See Roles for Teen and Junior Leaders above.
- Arrange for transportation to meeting site.
- Arrange for refreshments.
- Deliver parts of the program.
- Demonstrate shooting safety points.

Best Time to Teach

Any time of year but prior to live shooting

Best Location

Classroom or other comfortable site

Time Required

About 40 minutes to 1 hour

Materials/Equipment

- longbow, recurve bow and compound bow
- wood, fiberglass, aluminum and graphite arrows
- set up target bow (if available)
- set up hunting bow (if available)
- assorted bow stringers (see Fact Sheet: *Bow Stringers*)
- arm guard, finger tab and shooting glove
- release
- bow square
- nocking points and point pliers
- masking tape and marking pen- whistle
- tape or rope for shooting line

References

- National Archery Association, Instructor's Manual*, third edition. P. Baier, J. Bowers, C.R. Fowkes and S. Schoch. National Archery Association of the U.S., Colorado Springs, CO. 1982.
- Archery: Steps to Success*. K.M. Haywood and C.F. Lewis. Leisure Press, Champaign, IL. 1989.
- Teaching Archery: Steps to Success*. K.M. Haywood and C. F. Lewis. Leisure Press, Champaign, IL. 1989
- Archery: A Planning Guide for Group and Individual Instruction*. J.W. Smith, ed. American Alliance for Health, Physical Education, Recreation and Dance, Reston, VA. 1972.
- Bowhunting Deer: International Bow hunter Education Manual* W.H. Wadsworth. International Bowhunter Education Foundation. Murray, KY. 1978.

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Teaching Outline

Presentation

I. Origins of archery

- A. Hunters and warriors
- B. Shooting at “long” range
 1. Hunting or warfare
 2. Target shooting
- C. Types of early bows
 1. Self and composite bows
 2. Shapes and length
- D. Modern archery (mid – 1800’s)
 1. Influence of Civil War
 2. Ishi, Saxon Pope, Art Young
- E. Developments in materials and engineering
 1. Bow technology
 - fiberglass, graphite and laminated limbs
 - compound bows
 - wheeled bows
 - cam bows
 - cam-limb bows
 - overdraws
 - sights
 2. Arrow technology
 - shaft material
 - fletching
 3. String changes
 - Dacron
 - Kevlar
 - Fastflight
 - cables
- F. Similarities to the old days
 1. Hand-eye coordination
 2. Need for practice
 3. Shooting principles
 4. Safety considerations

II. Archery Safety

- A. Arrow actions
 1. Penetrating
 2. High momentum
 3. Low shock
 4. Dangerous until stopped

Application

DISPLAY illustrations of early hunters, American Indians or ancient warriors.

ASK – for how long was the bow the main tool of the hunter and weapon of the warrior? Try to get answers spanning pre-history to the 1600’s.

DEMONSTRATE equipment as it is discussed. ANSWER questions as they are posed by the group.

ASK – how is archery the same today as it was long ago? Look for answers mentioned here.

DEMONSTRATE penetration and shock differences between arrows and bullets if a safe range is available. (*See Fact Sheet 20: Penetration and Shock.*)

- B. Relative penetration ability
 - 1. Greater than rifle
 - 2. Straight up dangerous
- C. Offensive parts
 - 1. Arrow at both ends
 - 3. Fletching
 - 4. Bow limbs
 - 5. String
 - 6. Nocking point indicator
- D. Faulty, inadequate or mismatched equipment
- E. Weapon or fun?
 - 1. Your choice
 - 2. Mental control or physics
 - 3. Yours while on the string
 - 4. Need for respect and care
 - user responsibilities
 - enforcing safety
- F. Principles of archery safety
 - 1. Clear zone of fire
 - 2. Pointed
 - 3. Target identification
 - 4. Watch nocks and points
 - 5. Loaded only for shots
 - 6. Always treat with respect
 - 7. Avoid shooting if tired, distracted or under the influence of any drug
 - 8. Be extremely careful when retrieving arrows
 - 9. Be sure all tackle is in perfect working condition and free from damage
 - 10. Always hold to strictest codes of conduct, ethics and sportsmanship

ASK – why is an arrow shot straight up dangerous? DISCUSS responses.

USE an airbow or a demonstration shot in a safe area to stimulate thinking. ASK – what are some of the possible safety concerns with archery tackle or shooting? ADD any items they fail to mention.

ASK – what make the difference between a weapon and a recreational tool? Work for answers that stress the intent and use of the equipment.

DISCUSS firearms safety and how it relates to archery safety. ASK – what differences between bows and firearms result in changes in safety considerations.

DISCUSS penetration and sharp points on both ends of arrows. DISCUSS also the need for a larger cleared area for the limbs to operate safely.

III. Orientation to Archery Tackle

- A. Bows
 - 1. Riser
 - grip or handle
 - arrow shelf
 - sight window
 - handedness
 - arrow rest

ILLUSTRATE/DEMONSTRATE each item as it is discussed. Be sure all participants can see clearly.

- arrow plate
- plunger or button
- 2. Limbs
 - face or belly
 - back
 - tips and string nocks
 - cams or eccentric wheels
- B. Bowstrings
 1. Construction
 - Dacon, Kevlar or Fastflight
 - one-looped strand
 2. Servings
 - end loops
 - center (mono)
 3. Nocking point indicator

DISCUSS advantages and disadvantages and uses of each material.

- C. Arrows
 1. Shaft materials
 - wood (cedar)
 - fiberglass
 - hollow
 - solid
 - graphite tubing
 - aluminum alloy
 2. Spine or stiffness
 - matched to bow
 - need for matching
 3. Nocks
 - string holding device
 - different types
 4. Points
 - target points
 - field points
 - broadheads
 - blunts
 - other types
 5. Fletching
 - feathers and vanes
 - index (cock) vane
 - types of fletching
 - straight
 - offset
 - helical
 - flu-flu
 - purposes
 - matching to use
 - target
 - hunting
 - others
 6. Cresting or signature
 - decoration and identification

ILLUSTRATE “archer’s paradox” – need to bend in order to fly straight.

- identifying each shaft individually
- D. Other accessories
1. Arm guard
 - purposes
 - location
 2. String-hand protection
 - finger tab
 - clean release
 - how worn
 - shooting glove
 - mechanical release
- E. Quivers
1. Types of quivers
 2. Purpose of quivers
 3. Types used here

DEMONSTRATE use of arm guard and finger tab or glove. ASK – what is main purpose of arm guard? Lead them to conclude: 1) keeping the clothing away from the string and 2) preventing string slap.

Have participants PUT ON a tab with supervision and help.

IV. Eye Dominance

- A. Determining eye dominance
1. Importance of master eye
 - naturally
 - ease in retraining hands
 - difficulty in retraining eyes
 2. Use partner method
 - overlapped hands
 - looking at partner's nose
 - bringing hands to eye
 - watch for “cheating”
 3. Selecting bow for eyedness
 - string-hand and dominant eye on same side
 - sight window on bow-hand side (opposite side from dominant eye)
- B. Terminology for instructions
1. String-hand side
 - dominant-eye side
 - refers to drawing hand
 2. Bow hand side
 - off or non-dominant side
 - hand that holds bow

DEMONSTRATE how to determine the master eye. Have participants pick a partner and determine their master eye. (*See Fact Sheet 3: Determining Eye Dominance.*)

ILLUSTRATE bow selection. HELP each participant pick a bow for their eyedness.

Have each shooter stand with their bow hand toward their partner and draw their string hand back. CHECK to be sure they understand the terminology.

V. Safe stringing techniques

- A. Safety for shooter and bow
1. Unacceptable methods

DEMONSTRATE, without stringing the bow, the dangers to shooter or bow in using these methods. STRESS that they are NOT RECOMMENDED.

- step-through
 - push-pull
2. Acceptable methods
 - cord stringers
 - wall stringers
 - box stringers
 - bow presses
 - bow relaxers

B. Caution about dry firing

V. Range Procedures

A. Relationship to other shooting

1. Need for control
2. Need to assure safety
3. Everyone responsible
 - watch for unsafe conditions
 - obey all commands immediately

B. Whistle system/Voice commands

1. Two whistle blasts/“Archers to the shooting line”
 - Archers walk carefully to the shooting line
 - One foot on either side of the shooting line
 - Keep arrows in quiver, fingers off string
2. One whistle blast/“Commence firing”
 - Remove arrows one at a time from quiver, load bow, shoot at target
 - When all arrows have been shot, step behind waiting line, place bow on rack, wait for signal to walk forward to remove arrows from the target
3. Three whistle blasts/“Retrieve arrows”
 - Walk carefully toward your target to retrieve arrows
 - Stop at the target line for additional instructions
4. Four or more whistle blasts in rapid succession/“Cease fire”
 - Dangerous condition
 - Stop shooting, even if ready to release
 - Place arrow back in quiver
 - Wait for signal to resume shooting

DEMONSTRATE proper use of one or more bow stringing devices. Have shooters PRACTICE stringing and unstringing bows under supervision of adult or junior leaders.

DISCUSS a useful set of range procedures. LIST some reasons for standard range commands. REVIEW shooter responsibilities.

DISCUSS appropriate ways to be sure commands are obvious. ILLUSTRATE each one using adult or junior leaders. HAVE each shooter work through a series of commands without equipment.

ASK – why should the line captain be the first one down range?

ASK – why is it important to limit the number of people at a target? EMPHASIZE potential danger from nocks on pulled arrows.

- watch for undershot arrows
 - danger to shooters
 - sharp nocks
 - tripping
 - danger to shafts
 - bending or breaking
 - line captain observes searches for overshot arrows
 - tell shooters to be prepared to shoot next meeting
 - signal to other archers
 - bow over target
 - arrow upright
 - search as a group
 - line captain returns to line last
- C. Field shooting changes
1. Toe to line or stake
 2. Bow across target face
- D. Spacing on shooting line
1. Beginners at least 2 to 3 meters (6 to 10 feet) apart
 2. More advanced shooters need less room
 3. Change in arrow handling
 - Arrows nocked on upright bow
- E. No bows drawn or arrows nocked except on shooting line
- F. Range behavior and etiquette
1. Appropriate clothing
 2. Distraction
 3. Sportsmanship and ethics

VII. Conclusions

- A. Archery is as safe as YOU make it
- B. Basics have not changed with technology advances
- C. Range safety is everyone's job
- D. Proper bow handling is ease and mostly common sense
- E. Some possible exhibits
- F. Next time we start shooting

ASK – why is it important to watch where you are stepping?
EMPHASIZE the damage to either anatomy or arrows.

ASK – why must persons be so careful when looking for overshot arrows? STRESS being out of sight down range.

ASK – why should the line captain be the last one back?

DEMONSTRATE proper way to nick an arrow, first using the bow as a shelf (beginners), then coming straight over shoulder and upper limb.

EMPHASIZE the need for concentration, respect for others and caution in all forms of shooting.

REINFORCE points of safety and range behavior.
EMPHASIZE the need for all shooters to be actively involved in the safety of their sport.