

CUB SCOUT

SHOOTING

SPORTS

FOR
CUB SCOUTING



BOY SCOUTS



OF AMERICA®

Shooting Sports for Cub Scouting



Archery and BB gun shooting are restricted to day camps, Cub Scout/Webelos Scout resident camps, council-managed family camping programs, or to council activities where there are properly trained supervisors and all standards for BSA shooting sports are enforced. Archery and BB gun shooting are not to be done at the pack level.

Archery and BB gun shooting belt loops and sports pins may only be earned at the camps and activities listed above.

These programs are designed to emphasize safety and marksmanship development under the direction of trained range officers using nationally approved instructional methods.

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INTRODUCTION



This manual is for the adults who will teach the shooting sports skills of archery and BB gun shooting to Tiger Cubs with their adult partners, Cub Scouts, and Webelos Scouts. There is potential danger to the untrained participant and others. "Safety through skill" are the watchwords.

Special facilities and supervision are required for shooting sports. Camping reservations of local councils become the center for most of these activities.

Shooting sports training provides fun and adventure for boys. Archery and BB gun shooting teach skills, discipline, self-reliance, sportsmanship, and conservation, all of which are elements of good character valued by Scouters.

Adventure beckons when Tiger Cubs with their adult partners, Cub Scouts, and Webelos Scouts have mastered the skills of shooting sports. Mastery of these skills will help a boy feel confident in his abilities.

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The council's camping reservation usually is an ideal location for shooting sports areas. Here, safely designed areas may be established for the Cub Scout shooting sports program. Under qualified leadership, Tiger Cubs with their adult partners, Cub Scouts, Webelos Scouts, and parents may be given the opportunity to participate in these skills.

Other community resources such as the local chapter of the National Rifle Association (NRA), archery clubs, and sports groups will often provide facilities and resources.

The skills needed to master shooting sports adds color and variety to the Cub Scout program. These activities can become a natural part of our camp setting.

Leadership

In camp, leadership for shooting sports needs special attention by the camp director and his or her program director. Staff members who assume the responsibility for these activities must be at least 18 years old with mature judgment and the ability to teach. Ideally, in Cub Scout/Webelos Scout day or resident camp, the staff should be members of the central camp staff. Volunteer experts who come to camp for shorter periods may supplement their work.

All shooting ranges in the Cub Scout program must be supervised by a qualified range officer who is at least 18 years old and who meets the minimum state requirements. See specific qualifications and training requirements for archery range officers in Chapter 2, Archery, and for BB gun shooting range officers in Chapter 3, BB Gun Shooting.

Some leaders may already be available with the proper training; however, to find other adults in your community who may be interested in being trained as a range officer, try contacting:

- Members of the National Archery Association clubs
- Members of sportsmen's clubs (often include bow hunters)
- College and high school physical education instructors
- Representatives of the archery industry
- Members of the National Rifle Association
- Members of local gun clubs
- Military instructors
- Local and state police department personnel
- State conservation personnel
- Local sporting goods retailers and their employees

Shooting Sports Director

In most councils, the shooting sports director oversees the shooting programs, trains the range officers, is responsible for the operation of archery and BB gun ranges in council camps.

The shooting sports director must be at least 21 years old and hold a current National Camping School shooting sports director's card. National Camping School qualifications include BB, rifle, shotgun, muzzle-loading, and archery instruction, unless otherwise noted on the card. He or she is registered with the Boy Scouts of America.

Note: In addition to shooting sports directors, National Archery Association instructors may train archery range officers; and National Rifle Association instructors may train BB gun range officers.

Directing Shooting Sports in a Council Program

- Know and strictly follow all the safety regulations related to BB guns and archery.
- Train staff about safety regulations for all sports areas.
- Train all campers and leaders in the safety fundamentals.
- Check the performance and safety aspects of all areas.
- Restrict from using an area any person who does not follow all safety instructions.
- Set up all areas in a practical, safe, and inviting manner.
- Provide qualified supervision for each area at all times, even when not in use.
- Train, schedule, and supervise staff to perform daily routines.
- Check the inventory of all shooting sports equipment. Check minimum equipment needed to make sure there is enough equipment and obtain any needed equipment.
- Keep an adequate stock of BB guns and archery equipment on hand and be accountable for all inventories.
- Make sure equipment is properly stored and locked up when not in use.
- Organize and promote individual and team competition.
- Set an example of Scout-like conduct regarding uniforming and general bearing.
- Report any and all operational and personnel problems to the camp director.
- File a closing inventory, a report, and recommendations as instructed.

2-Introduction

Safety Instruction Guidelines

To be effective, instruction should:

- Teach safety through self-discipline. Safety practices should become habits.
- Teach shooting skills using the best methods for the limited time available. Participants learn more by example and doing than by lectures.
- Develop, through participation, the attitudes and habits that will fortify the goals of the movement—to help boys become physically fit men of good character who are prepared for useful citizenship.

Give instruction in simple terms. Controversial methods should be omitted. Make it clear that only one method will be used and that there is not enough time to show alternate methods. Instructors should exactly follow the method they teach.

Shooting sports skills must be learned by practice, with each participant learning the rules of safety and self-discipline by putting them into effect. Participants quickly learn that there is no place for foolishness, carelessness, or horseplay when they handle shooting equipment. The instructor must always be mindful of his or her responsibility to make safety rules thoroughly understood before, during, and after instruction and practice. At the same time, he or she must have warmth, patience, and understanding for the boy who may not understand an instruction or who finds a skill challenging to learn.

Positive Aspects of Shooting Sports

From material by R. A. Soldivera, Shooting Sports Consultant

- Shooting sports are part of the Olympics program events.
- Shooting sports do not require participants to start at an early age to be successful. A person may start shooting in high school and compete on a national level before entering college.
- Age does not seem to be a factor in learning shooting sports. Shooting sports has had a national champion who was more than 60 years old, and one as young as 16 years old.
- Shooting sports are for both boys and girls.
- Shooting sports may be conducted both indoors and outdoors.
- Shooting sports may be featured as both a winter sport and a summer sport.
- Shooting sports may offer individual participation, team participation, or both at the same time.

- Shooting sports are recognized as being very safe with few injuries.
- Shooting sports require a minimum of facilities rather than large arenas, courses, courts, or gymnasiums.
- Students who have participated in shooting sports report a marked improvement in their ability to concentrate when they apply the principles of these sports to their academic pursuits.
- *Purity* is a term used in sports to describe the degree of precision with which a physical function must be executed. Shooting sports require the highest degree of purity.
- Sportsmanship has been described as, “The quality and conduct of a person who accepts victory and defeat graciously.” Shooting sports has a reputation for high sportsmanship conduct among its participants.
- People with physical disabilities are able to compete at high levels of competition in shooting sports.
- College scholarships are awarded in shooting sports.
- In shooting sports, everyone participates.



ARCHERY

Archery is a colorful, interesting, and worthwhile activity for boys. The beginner gets immediate satisfaction, yet finds a continuous challenge as he develops into a skilled archer. This activity provides good physical exercise and develops powers of concentration and coordination.

The goal is to teach Tiger Cubs with their adult partners, Cub Scouts, and Webelos Scouts how to use the bow and arrow safely.

A Brief History of Archery

The advancement of civilization was enhanced by the use and discovery of bows and arrows. The bow and arrow provided a much safer way to hunt and made life easier.

Generally it is thought the spear was the predecessor to the bow. Spearheads have been discovered from many thousands of years ago.

A recognizable bow was discovered dating back to 6000 B.C. that was made from yew or elm.

Egyptians, somewhere around 3500 B.C. to 2800 B.C., are considered the first to use the bow in battle, which gave them superiority over their enemies. This bow was known as a composite bow.

Assyrians developed a shorter recurve bow that provided more power and easier handling around 1500 B.C. Crossbows were also used in ancient China, but were not used until many years later.

About this same time, the Parthians became famous for shooting backwards while riding a horse. The term "Parthian shot" is still used today in archery.

Heracles, a Greek hero, was very well known for his help with the siege of Troy around 1260 B.C.–1240 B.C. As a direct result of Heracles help, the city of Troy fell through the use of the Trojan Horse.

Around 1200 B.C. a famous Egyptian Pharaoh named Rameses II gave archery another boost by putting archers on chariots. This mobility allowed the Egyptians to defeat the Hittite army.

Through the course of time the wooden bow was made longer. The British were famous for improving on the bow, which eventually became known as the British longbow. The most famous battle of the longbow was the battle of Crecy in 1346. In 1500, crossbows were banned in England to promote the use of the longbow. In 1595, the army was ordered to replace all bows with

muskets. Archery has remained a popular sport activity in England.

Some of the first archery clubs were formed in England. Competitions were part of their way of life. The English are noted for the three forms of shooting. Butt shooting is where targets are mounted on mounds at 100 to 140 yards. Clout shooting is where targets are mounted on the ground with a wooden stay in the center. For these two forms, arrows are shot upward to descend on the target. For the third form of shooting, roving, archers shoot at simulated small animals over varying ranges on unprepared ground and courses.

Around 1000 AD, bow and arrow technology swept the Americas. As seen through archeological studies, its use was adopted by most prehistoric native Americans.

In 1879 the National Archery Association was founded. The first national tournament was held in White Stocking Park, Chicago, Illinois, the same year. The first archery club in the United States, the United Bowmen of Philadelphia, was founded in 1928.

In 1900 archery became part of the Olympic games. It was dropped after 1920 because the wide range of rules could not be standardized. In 1931, the Federation Internationale de Tir l'Arc (FITA) was founded in Paris and standardized the rules for International Competition, but it was not until 1972 that archery was again a part of the Olympic program.

Leadership

Archery must be conducted by *trained, qualified* on-site range officers who actually direct the operation of the range program and archery instruction. To qualify as an archery range officer, the range officer must be at least 18 years old and be trained by a National Camping School-trained shooting sports director or a National Archery Association (NAA) instructor.

The archery range officer also must be familiar with the archery section of *Shooting Sports for Cub Scouting*, No. 13-550, and be registered with Boy Scouts of America.

The local council issues a Training Course Pocket Certificate, No. 33767, and keeps a record of those who have been certified. Certification must be renewed every two years.

Training Archery Range Officers

Use this outline to train archery range officers for district or council Cub Scout camps or events.

Section I (40 minutes)

- A. A Brief History of Archery, page 5
- B. Safety Guidelines, page 7
 - 1. Sun Safety on the on the Shooting Range, page 8
- C. Equipment, page 15
 - 1. Review bows, bowstrings, arrows, arm guards, finger tabs, quivers, points of aim, target butts, target faces, and backstops.
 - 2. Review how to string and unstring a bow.
 - 3. Review how to maintain, store, and care for equipment.
- D. Range Layout, page 14
- E. Range Operation Rules, page 15

Section II (40 minutes)

- A. Archery Shooting Basics, page 8
 - 1. Eye Dominance, page 8
 - 2. Stance, page 8
 - 3. Nock the Arrow, page 8
 - 4. Establish the Bow Hold, page 9
 - 5. Draw, page 9
 - 6. Aim, page 9
 - 7. Anchor, page 10
 - 8. Release or Loose, page 10
 - 9. Follow Through, page 10
 - 10. Retrieve Arrows, page 10
- B. Targets and scoring
 - 1. Target Butts, page 17
 - 2. Target Faces, page 17
 - 3. Backstops, page 18
- C. Proper Whistle Codes, page 18
- D. Practice Shooting

Section III (20 minutes)

- A. Training Cub Scouts, page 6
 - 1. Teaching Tips, page 6
- B. Shooting a Competitive Round, page 11
- C. Archery games and activities, page 11
- D. Tiger Cubs and Archery, page 7
- E. Cub Scout Shooting Sports Award, page 12
- F. Archery Belt Loop and Sports Pin, page 12

Training Cub Scouts

The objective is to teach Cub Scouts how to shoot a bow and arrow and to have fun safely.

This instruction is designed for immediate participation and success. For example, beginning students tend to shoot high because they want to look at the point of their arrows. By placing targets on the ground at 10 yards, rather than at the traditional 48-inch level at 25 yards, fewer arrows miss the target. This means more class time can be spent on shooting and less on looking for arrows.

Before handing out equipment, check each participant's eye dominance, page 8. Also, look for loose objects on the participants such as pins, pencils, loose sweaters, and watches that could get in the way of shooting.

For the best learning experience, give each Cub Scout a bow, an arm guard, a finger tab, a quiver, and six arrows. If it is not possible for each to have a bow, one bow might be shared by two or more boys.

Caution the class to hold the items but to not shoot until you give exact instructions to do so. Bows should already be strung at the first session. Stringing and unstringing bows may be taught later.

For beginning instruction, have left-handed shooters grouped at the right end of the shooting line to allow them a better view of the range officer as he or she demonstrates.

Instruction takes place at the shooting line. Explain the use of whistles, page 8.

Teaching Tips

The coach-pupil method is effective for all types of skill training and is particularly effective in shooting sports. To put this method into practice:

1. Put the bow in the Cub Scout's hand as soon as possible so he can understand the tool while the basics are explained.
2. Group participants into pairs (boy and parent/guardian would be ideal.) Check for loose items on the bow side of the student that could interfere with his shooting.
3. The instructor demonstrates the activity or action to be followed before the whole group. When demonstrating techniques, be sure to do them correctly. The instructor then circulates among the pairs, giving a word of advice or assistance, recognizing good work, correcting errors, and determining how well the participants understand the method.
4. Check the student's finger tab closely before he shoots. Watch for four fingers on the string. Look for cramped fingers on the bowstring. Watch the thumb on the drawing hand. If a student masters the draw and anchor quite readily, stand behind him and check the string path before allowing him to shoot.

5. The boy practices while the parent coaches. Let Scouts shoot the first arrow as soon as possible, even if the bow hand, anchor, draw, etc., are not perfect.
6. At a predetermined signal, the positions are reversed.
7. Progressively, participants are learning by observing, by doing, and by coaching
8. Use a positive approach. Use praise sincerely. Before making a correction, figure out the fault to find the cause. Never correct a student after spotting a fault on one arrow shot.
9. Avoid long discussions on learning the parts of equipment used. Teach just enough so participants will know how to safely use the equipment.
10. Allow each boy to feel the satisfaction of hitting the target as quickly as possible.

Cub Scout Archery Training

Use this outline to train Cub Scouts to participate at an archery range at district or council Cub Scout camps or events.

Section I (20 minutes)

- A. Safety Guidelines, page 7
- B. Equipment, page 15
 1. Review bows, bowstrings, arrows, arm guards, finger tabs, quivers, points of aim, target butts, target faces, and backstops.
 2. Review how to maintain, store, and care for equipment.
 3. Review how to string and unstring a bow. (Optional.)

Section II (40 minutes)

- A. Archery Shooting Basics, page 8
 1. Eye Dominance, page 8
 2. Stance, page 8
 3. Nock the Arrow, page 8
 4. Establish the Bow Hold, page 9
 5. Draw, page 9
 6. Aim, page 9
 7. Anchor, page 10
 8. Release or Loose, page 10
 9. Follow Through, page 10
 10. Retrieve Arrows, page 10
- B. Practice, practice, practice

Section III (60 minutes) (optional activities)

- A. Shooting a Competitive Round, page 11
- B. Archery Games and Activities, page 11
- C. Archery Belt Loop and Sports Pin, page 12

Tiger Cubs and Archery

Tiger Cubs and their adult partners may participate in archery activities. The adult partners must be included in all archery activities. Each Tiger Cub must be paired with his adult partner before being allowed to shoot.



Keep in mind that boys of this age have very short attention spans (20 to 30 minutes maximum), and tire easily. They probably have little previous experience working as a group and may require more time to understand how the range operates. Tiger Cubs have a wide range of ability and experience levels, so be ready for anything!

Tiger Cubs may earn the archery belt loop and sports pin.

Safety Guidelines

Tiger Cubs with their adult partners, Cub Scouts, and Webelos Scouts should learn these simple safety rules. When training youth to shoot, be sure to have the proper equipment, secure and safe ranges, and clear safety instruction.

1. Observe all state and local laws on using a bow and arrow.
2. Shoot only with proper range supervision.
3. Always check your equipment before shooting. Break and discard all cracked or fractured arrows.
4. Know the proper whistle codes.
5. Bows and arrows should be used only in places set aside for their use.
6. Always keep your arrows pointed down or toward the target.
7. Only release an arrow when you can see its full clear path to the target.
8. Shoot only at the target in front of you.
9. Keep the arrows in the quiver until everyone is on or behind the shooting line and the range officer has indicated that you may begin shooting.
10. Shoot with your feet behind the shooting (firing) line.
11. Stop shooting immediately upon signal from the range officer or if anyone crosses in front of the shooting line or in front of or behind the targets.
12. Use only arrows that have been measured for your proper draw length. Arrows that are too short may cause personal injury or damage to the bow and arrow.
13. Always wear an arm guard and finger tab or glove.
14. Always practice courtesy and good sportsmanship.
15. Always walk, never run, when on the archery range or while carrying arrows.
16. On a target range, leave the bow standing against the target face while you are looking for lost arrows.

17. Stay on marked paths. Travel the direction in which the targets are marked.

Know the proper whistle codes:

- 2—Two blasts: Move up to the firing line.
- 1—One blast: Fire the proper number of arrows.
- 3—Three blasts: Cease firing. Move to the target. Retrieve and score arrows.
- 4—Four or more blasts: Cease firing. Stay where you are. This is an EMERGENCY. The officials will tell the archers what action to take either verbally or by the whistle code.

Remember that there is only ONE command to shoot, and that is ONE blast of the whistle.

For any command of more than one blast, STOP shooting. Watch and listen for further instructions.

Sun Safety on the Shooting Range

The American Academy of Dermatology advises the following protection tips against damaging rays:

- Limit exposure to sun between 10 A.M. and 4 P.M. when the sun's rays are the strongest.
- Generously apply sunscreen with a sun protection factor (SPF) of at least 15 and reapply every two hours when outdoors, even on cloudy days.
- Wear protective, tightly woven clothing, such as a long-sleeved shirt and pants.
- Wear a 4-inch-wide broad-brimmed hat and sunglasses with UV protective lenses.
- Stay in the shade whenever possible.
- Avoid reflective surfaces, which can reflect up to 85 percent of the sun's damaging rays.

Archery Shooting Basics

The following instructions are written for right-handed shooters. When training left-handed shooters, reverse the instructions as necessary.

Eye Dominance

Before shooting a bow, the participants should determine which eye is dominant. Just as people are either right- or left-handed, one eye is more dominant than the other. Discovering which eye a shooter favors is important because it could determine on which side the bow should be held.

To find which eye is dominant, have participants extend both arms in front of them and form a small hole with their thumbs and index fingers. Instruct them to look at

a distant object through the opening and then pull their hands back to their face. The eye that is in line with the object is dominant.

Practice sight picture and correct sight alignment.

Assign boys, leaders, and parents in pairs to assist each other, then have them check with the range officer.

Stance

Have the archers turn sideways to the target, with their left shoulder toward the target. (Left-handers should stand with their right shoulder toward the target.) Weight should be evenly distributed and feet should be as wide apart as is comfortable (approximately shoulder width.) This is called the square stance.

Another way to enter the square stance is to have the archer lay down an arrow so that the arrow points at the center of the target. The archer then places the toes of both feet against the arrow. Straddle the shooting line. Relax the knees—do not lock them backwards.

After archers are familiar with the square stance, instruct them to move their right foot forward, toward the person in front of them, until the instep of their right foot lines up with the toe of their left foot. Tell archers to raise up on their toes and take a one-eighth turn toward the target. This is called the oblique stance. The oblique stance allows beginners to use their back muscles immediately, moves the string away from the bow arm so there is less chance of string slap, and provides a secure base.

Golf tees pushed into the ground make good foot markers for consistency in placing the feet. Once the feet are properly positioned, stand erect without jutting the hip. Position the head so that vision is parallel with the ground and so that the chin is above the left shoulder.

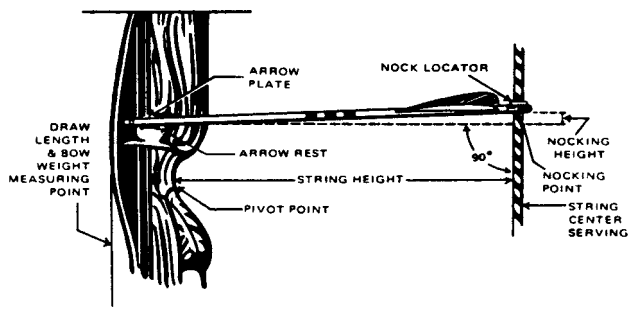
Nock the Arrow

To nock the arrow means to place the arrow on the string and the bow. With your right hand, lay the shaft of the arrow on the arrow rest and nock the arrow by fitting the notched end of the string just below the string's nocking point. Be sure the odd-colored feather (cock) is facing away from the bow.

The left hand holds the bow with the tip tilted away from the body at a 20-degree angle and with the string toward the body. Grasp an arrow by the nock between the thumb and index finger of the right hand.

Each arrow is nocked so it is at a 90-degree angle with the bowstring. Just above the proper nocking point, whip the bowstring with a small piece of brightly colored thread to serve as a nock locator. This mark enables each arrow to be nocked in the same place for consistent shooting.

Nocking the Arrow



Place the index finger of the right hand above the nock and the next two fingers below the nock. “Hock” the bowstring with the first joint of these three fingers without curling them and without applying pressure on the arrow nock.

Establish the Bow Hold

Each archer should extend his left arm toward the target with the left hand in a “handshake” position. Place the pivot point of the bow handle in the “V” formed by the thumb and forefinger of the left hand. Drop the forefinger around the back of the bow with the thumb resting lightly over the forefinger. The other three fingers should be pointing toward the target.

Inform archers that the pivot point should touch only the meaty part of the thumb and that no other part of the hand or palm should touch the bow. Extending the last three fingers toward the target will help the students keep the palm off the bow. This should result in a relaxed hold on the bow and avoid “gripping” the bow handle. The wrist should be straight, but relaxed. Have the student relax and hold the bow at his side with the string up so that the bow does not interfere with students on either side. Tell each student to raise his head, look at the bulls-eye, raise the bow arm to shoulder height, and lower again to the side.

Draw

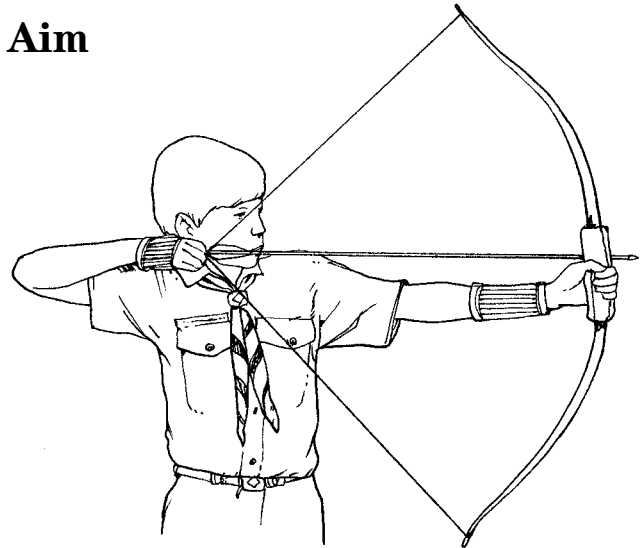
Bring the left hand up, turning the hand so that the bow assumes a vertical position at arm’s length. The heel of the left hand presses against the bow grip with the bow in the “V” between the thumb and index finger. The left hand should not “grip” or “hold” the bow.

Pressure against the lifeline of the hand from drawing the bowstring keeps the bow in place. Keep slight tension on the bowstring so that it rests across the fingertips in between the first joints.

With the three fingers of the right hand serving as hooks, start the draw slowly. The index finger will be above the arrow and the middle two fingers below it. At full draw, the right elbow is back and in direct line with the tip of the arrow. Keep fingers (except the three “hook” fingers), hand, and forearm relaxed.

Keeping the left arm fully extended and the left shoulder down, begin to draw the bowstring with the right hand. The right hand and elbow should stay at shoulder level. The right forearm becomes a straight-line extension of the arrow. Use the strong back muscles to draw the bow, concentrating on smoothly and steadily moving the elbow straight back. Be sure to draw the bow the same length each time.

Aim



Two aiming methods are used:

1. **Bow-sight method.** The bow-sight method of aiming is often the most easily understood and is the most useful for target archery.

To establish sights, attach a wooden match with a small rubber band to the back surface of the upper limb of the bow about 5 inches above the handle. Loop one end of the band around the head end of a match. Stretch the rubber band around the face of the bow and attach its other loop around the other end of the match. The match head now forms a temporary sight that can be adjusted upward, downward, to the right, or to the left.

Establish a sight for 10 yards by measuring the distance from the pupil of the right eye down to the bottom of the chin. Add to this distance the diameter of the arrow you are using. Measure the total distance on the upper limb of your bow, from the top of the handle up. It will be approximately 5 inches. Raise or lower the match and rubber band until they coincide with the upper limit of the measurement. The match head should stick out to the left of the bow about $\frac{1}{4}$ inch.

Choose a small one-inch aiming spot on your target, 10 yards away. When the arrow is fully drawn and anchored, raise or lower the bow so that the match head is in line with the right eye and the aiming spot, and release the arrow. Shoot three to six arrows in the same way and see where they group.

If all arrows hit the aiming spot, you have established the 10-yard sight. Draw a horizontal pencil line across the back of the bow at the elevation of the match, and mark a “10” on it. Later you can remark it with

black ink or a black marker. If the arrows group a little high, push the match up a bit. If the arrows go left, pull the match head out to the left a bit. If they go right, push the match straight to the right.

After establishing the 10-yard sight and recording its elevation in pencil on the upper limb of the bow, stand 20 yards away from the target and try to locate the 20-yard sight. To start, bring the match down about $\frac{1}{8}$ inch below the 10-yard sight and try it out. It will not be far off. The 30-yard elevation mark will be found approximately $\frac{1}{4}$ inch below the 20-yard sight. The 40-yard elevation mark is on sight at nearly $\frac{1}{2}$ inch below the 30-yard sight.

In every case, the sight can only be established by shooting arrows at the new distances and adjusting sights until arrows consistently hit at or near the spot. Sights can be established every 10 yards up to 100 yards. A more permanent and quite satisfactory sight can be made by attaching one or more five- or six-inch pieces of weather stripping to the back of the bow and sticking a steel pin with a black glass or enamel head into it perpendicular to the bow.

2. **Point-of-aim method.** The point-of-aim for a given distance may be located once the sight system is established. For example, to find the point of aim at 40 yards, stand on the 40-yard line with the arrow drawn and anchored with the sight aimed on the center of the bull's-eye. While holding this position, glance downward across the pile or shaft of the arrow to a spot on the ground seen just above the pile. Keeping the eyes glued on this spot, walk forward, and place the point-of-aim on that spot. Conversely, if the point-of-aim for a given distance is known, establish a sight on the bow for it by placing the bow sight on the bull's eye when the pile of the arrow has been sighted on the point-of-aim.

The more experienced archer will raise his bow and draw to anchor point in one smooth flow of motion. The arrow at this point is not immediately released. Several seconds are used to aim before the fingers release the arrow.

Anchor

At the completion of the draw the relaxed thumb of the right hand finds an anchor spot under the jawbone. If this is too difficult, rest the forefinger along the side of the jaw. Using the jawbone as an anchor, the bowstring will touch the nose and the center of the chin.

It is important that the anchor point be the same for every shot. Therefore, through practice, the most comfortable anchor point should be established.

Release or Loose

Proper release of a well-aimed arrow makes the difference between a good or poor shot. It is a delicate action. Hold the bow with a relaxed grip. The hand is opened with the fingers moving quickly and precisely off the nock and the string at the same time. The action of the back muscles will cause the right elbow to come back as the shoulder blades come together. If alignment is kept, the right hand will pass along the side of the neck. This is a natural reaction and not a conscious motion if the back muscles are being properly used.

Keep the left arm in the same position as for a full draw. Relax the wrist. Keep alignment. Avoid tension. Keep the bow at the same level that it was at full draw.

Follow Through

Keep aiming until the arrow hits the target. Throwing the hand out from the shoulder after the arrow is on its way invariably means that the fingers have been jerked away from the string. After release, the fingers should not be more than an inch away from and behind the anchor point. The bow should not drop immediately. If it does, it usually means that it was jerked at release. Hold the position until the arrow strikes the target to make certain the whole process is smooth.

In a good follow-through, your right hand will be at the back of your neck and your arm will be lined up perfectly.

Retrieve Arrows

After all archers have shot their allotment of arrows (usually around six, if time permits), demonstrate and explain the proper methods to retrieve arrows from the target and ground.

First, before any archer goes to retrieve any arrows, permission must be granted by the range officer. The range officer will observe the archers and indicate when all archers have completed shooting and it is safe to retrieve arrows. At this time:

- Withdraw all arrows from the target.
- Retrieve all arrows that missed the target.
- Record scores.

Caution the archers to walk slowly to the target and watch for arrows on the ground. Demonstrate that an arrow buried under the grass should be withdrawn point first and be completely clear of the grass before the arrow is lifted.

No one may stand directly in front of the target while arrows are being withdrawn.

Archery Games and Activities

A variety of games or activities can be done using archery skills. Different ranges could be set up to play a particular game or courses could be set up where participants go from station to station. Archery games and alternate activities work well, especially when youth are in camp for more than one day or if a council sponsors a special archery camp for Cub Scouts.

Remember, any place there is any archery range and there is archery shooting, even when playing a game or activity, a qualified archery range officer must be present.

Shooting games are designed to improve shooting skills. Remember—safety is a must.

The following activities and opportunities would be appropriate for Tiger Cubs with their adult partners, Cub Scouts, and Webelos Scouts.

Shooting a Competitive Round

Listed below are two rounds that can be adapted for instructional use. When conducting a competitive round or tournament, two practice ends should be allowed before scoring begins. The purpose of these rounds is to expose students to the mechanics of a tournament. The scores might be used as a part of the skill evaluation.

Instructional Round I

Distance: 20 yards
Target: 36-inch, 4-color face
Total arrows: 60 (5 arrows per end; 4 ends per game; 3 games pre-round)
Score: 5-4-3-2-1
Total Points: 300

Instructional Round II

(American Archery Council Instruction Round)

Modified Chicago Round

Distance: 20 yards
Target: 36-inch, 4-color face
Total arrows: 30 (5 arrows per end; 6 ends per game; 1 game pre-round)
Score: 5-4-3-2-1
Total points: 150

Instructional Round II (cont.)

(American Archery Council Instruction Round)

Modified Flint Round

Total arrows: 30
Score: 5-3
Total points: 150
Station 1: 4 arrows at 17 yards—18-inch black and white face
Station 2: 4 arrows at 20 yards—12-inch black and white face
Station 3: 4 arrows at 20 yards—18-inch face
Station 4: 4 arrows at 14 yards—12-inch face
Station 5: 4 arrows at 15 yards—18-inch face
Station 6: 4 arrows at 10 yards—12-inch face
Station 7: 1 arrow each at 20 yards, 17 yards, 15 yards, 14 yards, 10 yards, 20 feet—18-inch face
Total points: 300

Tic Tac Toe

Place three rows of three balloons on a target mat. Divide the group into two lines and have them stand in a single file 20 feet from the target. At the signal to shoot, each archer will shoot one arrow and step back. The second and each succeeding person will shoot one at a time. The first team to break three balloons in any line is the winning team.

Wand Shooting

Place a strip of 1-inch masking tape over the target face from top to bottom. A point is scored when an arrow hits the tape anywhere on the target. Divide the group into two lines, and have them stand in a single file 20 feet from the target. At the signal to shoot, each archer will shoot one arrow and step back. The second and each succeeding person will shoot one at a time. The first team to get two points is the winning team.

Shoot the Monster

Participants shoot at a monster face attached or painted on a one-gallon plastic bottle, suspended with shock card within a tire. The object is to hit the plastic bottle. This event can be scored individually or by den or pack.

Drop in the Barrel

Participants lob an arrow into a barrel that is placed as the bull's-eye of a horizontal target on the ground. Outer rings may be formed with chalk, string, circles of small pennants, etc., at five-foot intervals from the barrel. Scoring may be kept by individual or by den or pack.

Spin the Insect

A picture of an insect is glued to a piece of plywood 12 inches square. The plywood is fastened so that it will pivot freely around a centered bar set from post to post when struck with an arrow.

Ring the Bell

Participants shoot at bells through the open end of swinging tires. All tires are swung in unison with a rope tied to the bottom of each tire and extended to an area beyond the limits of firing on the side.

Football Placekick

A scaled-down goalpost is erected behind a four-foot-high canvas sheet. From the firing line the archer can see only the top portion of the goalpost uprights. An arrow shot between the uprights above the crossbar scores as a field goal (three points), while an arrow that passes over the canvas and under the crossbar scores as a touchdown (six points). A raised platform should be set up adjacent to the shooting positions so that an observer can determine the scoring since the archer is not able to see the lower portion of the goalposts.

Archery Practice Fun

Any station that is set up for boys to practice skills is a fun station for the Cub Scouts. Boys have limited times to shoot arrows, so the opportunity to practice at a council camp or event is a great experience for them. A practice station is a simple, basic archery range, but a very fun one for the boys.

Archery stations could also be set up to practice stringing bows or learning how to care for some of the equipment. Helping with some of the archery equipment could be a rainy day activity.

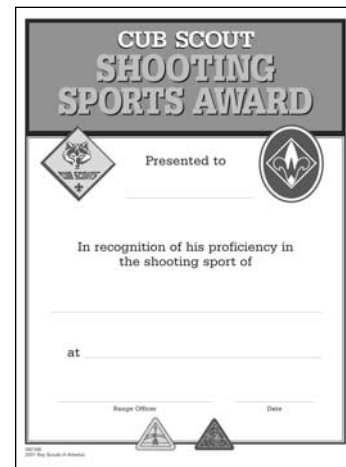
Action Archery Course

An action archery course could be set up using several of these games as different stations in the course. A drawing of a sample action archery course is found on page 48.

Cub Scout Shooting Sports Award

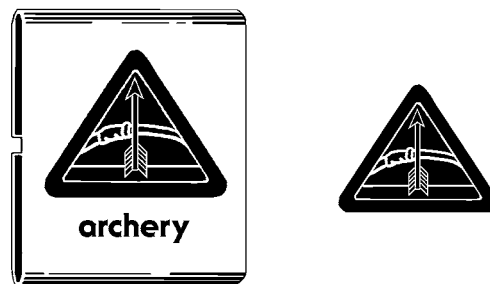
The Cub Scout shooting sports award, No. 34216, may be awarded to a boy whenever he achieves a level of marksmanship or excellence. The archery range officer, with other leaders of the camp or event, may determine special circumstances where a unique award might be useful. The award might be given for proficiency in shooting, best sportsmanship, or for some other appropriate achievement.

The award is available from the National Supply Division in packages of 100.



Archery Belt Loop and Sports Pin

Archery belt loops and sports pins may only be earned through council- or district-sponsored programs.

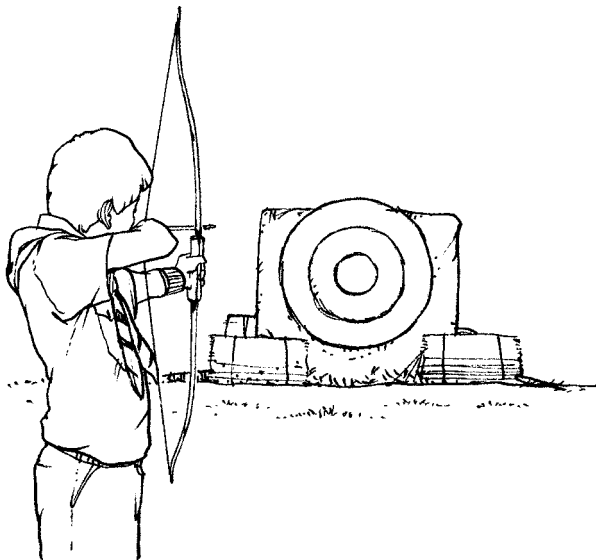


Quality camp programs will offer an archery shooting program that allows boys to meet the requirements for earning the archery belt loop. In a program where boys

come for more than one day, councils should offer activities that meet the requirements for the archery sports pin. Dens and packs enjoy coming to council camps where they have the opportunity to earn belt loops and sports pins that cannot be earned at home.

See the sample certificates on page 40. Use these certificates to show that boys have met the requirements for the loops and pins. Their pack may then purchase the archery belt loops and sports pins at their local Scout shop.

Tiger Cubs complete requirements while working with their parent or adult partner. Parents and partners do not earn loops or pins. All requirements must be completed under the supervision of a certified archery range officer.



Belt Loop Requirements

Complete the following three requirements:

1. Explain the rules for safe archery that you have learned in the district/council camp or activity you are attending to your leader or adult partner.
2. Demonstrate to your leader or adult partner good archery shooting techniques, including the stance and how to nock the arrow, establish the bow, draw, aim, release, follow-through, and retrieve arrows.
3. Practice shooting at your district or council camp for the time allowed.

Sports Pin Requirements

Earn the archery belt loop and complete five of the following:

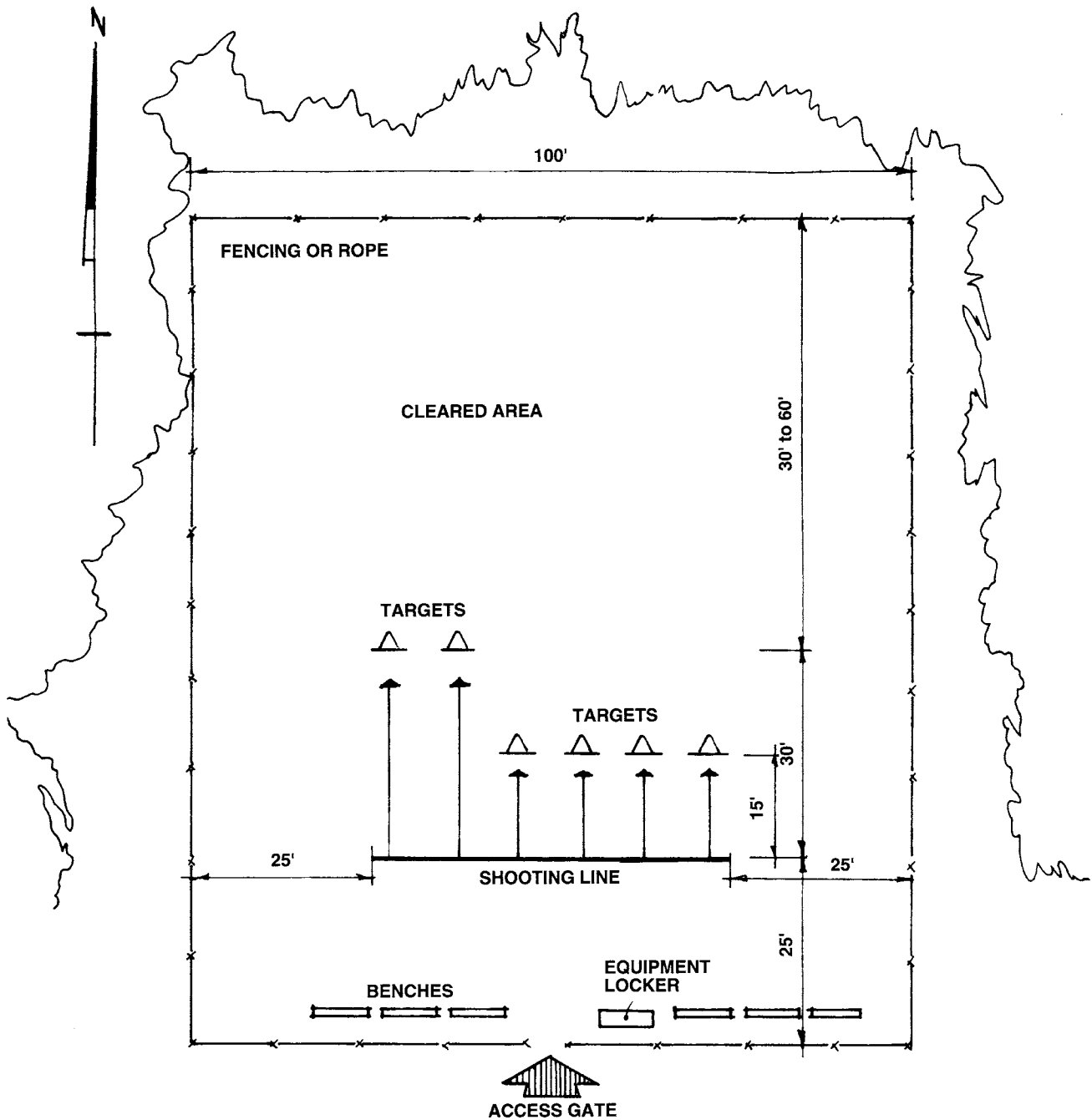
- 1. Explain the parts of a bow and demonstrate how to string the bowstring in a proficient manner.
- 2. Demonstrate how to properly use archery equipment, including arm guards, finger tabs, and quivers, and explain about proper clothing.
- 3. Develop proficient shooting techniques by practicing for three hours.
- 4. Learn the correct scoring techniques for target archery.
- 5. Make a poster that emphasizes the four whistle codes.
- 6. Draw to scale or set up an archery range.
- 7. Shoot 30 arrows from a distance of 30 feet at a target and score at least 50 points, or shoot 30 arrows from a distance of 90 feet and score at least 30 points.
- 8. Help make a type of target for the camp archery range.
- 9. Show how to put away and properly store archery equipment.
- 10. Tell five facts about an archer in history or literature.

Range Layout

Review the archery range layout below. Safety is a primary concern when operating an archery range and the safety rules must be followed.

If at all possible, the range should be laid out so shooting is done in a northerly direction so that archers are never facing the sun. To protect arrows, all outcropping rocks should be reduced to ground level. Grass should be planted so a good sod is developed. Keep grass cut close and raked clear. Sandy soil needs no ground cover.

Important! Arrange facilities so that there is no possibility of non-participants inadvertently walking behind the targets while shooting is in progress.



Range Operation Rules

1. Never operate a range without adult supervision.
2. Be sure that all safety rules are understood and followed.
3. Range flags must be flown while the range is in use.
4. Check all equipment before using to be sure that bows, bowstrings, and arrows are in safe condition.
5. All spectators and boys waiting to shoot must remain behind the waiting line at least three yards behind the shooting line.
6. Archers must wear shoes on the range at all time.
7. Archers may not allow anyone to hold a target for them.
8. Archers must not talk or disturb shooters on either side when they are shooting.
9. Archers stay on the shooting line until their target partners have shot their last arrows, and then both step back together.
10. Use the proper whistle codes.
11. Use the proper scoring techniques.
12. No running is allowed on the ranges at any time.

Sample Range Rule Poster:

Archery Range Rules

1. This range may be opened only by a certified archery range officer.
2. All commands issued by the range officer must be obeyed immediately.
3. Stay behind the firing line. Do not straddle the firing line. Do not reach for objects that fall beyond the firing line.
4. Bows will be placed on ground quivers when shooting has ceased or when retrieving arrows. No bows may be carried to the target butts.
5. Do not pick up a bow or nock an arrow unless told to by the range officer.
6. Absolutely no running on the range. Belt quivers should be used while retrieving arrows.
7. No horseplay or unnecessary talking on the range.
8. If in doubt about these rules, ask your leader or range officer for advice and help.

Equipment

When not in use, archery equipment should be kept in locked storage to protect it from weather, rodents, and theft. (For instructions on how to build storage lockers and other storage equipment see pages 45–47.)

Archery Equipment for 100 Campers

Many of the following items are available through the National Supply Division. For additional sources, see Resources, page 39.

- Six 48-inch target faces mounted on straw target butts and tripods or on stacked, baled straw
- 10 bows—four 15-pound, four 20-pound, and two 25-pound
- 12 bowstrings
- 12 finger tabs
- 12 arm guards
- 60 arrows selected to fit bows
- 36 action archery arrows
- 2 sets of field archery targets
- 60 plastic jugs (various sizes)
- 12 ground quivers (camp-made)

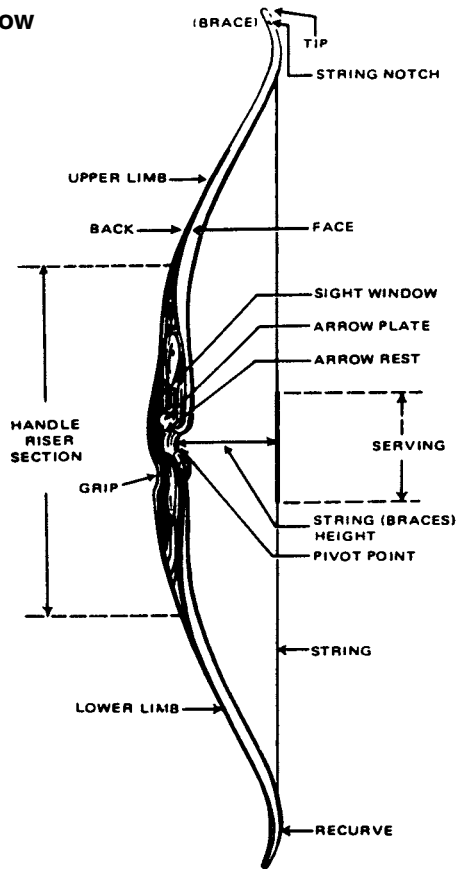
Bows

Beginners should use a very light bow with no more than a 25-pound pull. Pull is the force in pounds required to draw the bow a specified length. Bows of this weight are usually about 56 to 66 inches long. The bow should not be so heavy that the archer tires himself handling it.

The question has been asked as to which bows should be used: compound bows or recurve bows. Most discussions suggest that beginning archers should learn on a recurve bow. The recurve bow allows the archer to better learn proper finger tension, where the compound bow is a programmed bow with little room for variation.

Modern recurve bows are either made entirely of fiberglass or are a composite of wood and fiberglass. Both are satisfactory for beginning instruction. Fiberglass bows require less care, are less expensive, and are more serviceable for beginning classes. Intermediate and advanced groups could use laminated bows, which have superior shooting characteristics.

Parts of a Bow



When purchasing bows, consider that some shooters will be left-handed. If purchasing fiberglass bows, select a type that can be shot from either side. If purchasing laminated bows, about 10 percent should be left-handed.

Care of Bows

Some basics to follow in the care of your bows rather than they be wood, metal or fiberglass:

- Never lay a bow on the ground.
- Never stand a bow on end.
- Store bows by laying them on pegs that support the bow in the handle riser section.
- Although finishes are waterproof, it is best to dry the bow if it gets wet. Bow wax will help to preserve the finish on the bow.
- Carry a bow unbraced in a bow case to protect it from scratches and possible damage.
- Never leave a bow in an automobile as the heat from the sun may cause damage. Store bows unstrung and, if possible, in a cool place with moderate humidity.

Bowstrings

The National Archery Association advises beginners to use bowstrings made of Dacron with a serving (a wrapping of thread that protects the bowstring at the point where the arrow is set) made of multifilament nylon thread.

Keep the bowstring well waxed with either a commercial bowstring wax or one you make yourself using one part resin to three parts beeswax.

Inspect the string carefully before and after each day's shooting. If any of the strings are broken, discard the string. Check the serving and repair or replace it if it is loose or worn.

Replacement bowstrings should be ordered according to the length and weight of the bow. If a bow is marked 56 inches, 20 pounds, order a 56"-20# string. Do not order by the actual measured length of the string.

Bow Stringer

Always use a bow stringer to string a recurve bow. The step-through and push-pull methods can cause permanent damage to bows by torquing their limbs. A bowstringer is a piece of string about 5 feet long that has a leather cap at each end. The larger cap attaches over the bottom bow notch and the smaller cap goes over the upper bow notch. The top cap is small enough for the bowstring to be slipped into the bow notch.

To string a bow, position the bottom end of the bowstring in the bottom notch and slip the caps of the bowstringer over the ends of the bow. Holding the bow by the grip, allow the stringer to rest on the ground. Step on the center of the bowstringer and smoothly pull upward on the bow grip to tension the bow. Using the thumb and index finger, slide the top loop of the bowstringer into the upper bow notch.

Check the bow to make sure that the bowstring is properly in place. To unstring a bow, tension it and guide the top loop down. Bows that are not in use should be unstrung before being stored.

Arrows

Most young beginners will use 26-inch-long arrows. Longer arrows may be provided for larger boys and adults. Arrows of Port Orford cedar, pine, birch, aluminum, or fiberglass are suitable for beginners. Wood arrows are the least expensive, but aluminum and fiberglass arrows are more durable and will last much longer. If there is little possibility of losing them, aluminum or fiberglass arrows may be the best buy.

Advanced archers will become concerned with matched arrows (spine and weight) for their own bows. At this point such equipment should be secured as personal property. Its acquisition becomes a matter of personal preference. Interest in this is a payoff for the instructor.

A general rule for determining bow length is as follows:

- Draw your bow using an extra long arrow to your normal full draw.

- Have someone mark the arrow shaft at least one inch directly in front of the spot where the arrow contacts the most forward position of the arrow rest. This is the correct arrow length for you. Beginners may want to add 1- to 2-inches to correct arrow length to ensure that the arrow will not be too short once their shooting technique improves.

For planning purposes, the following averages may be helpful:

- The average adult male uses a 28-inch arrow.
- The average adult female uses a 26-inch arrow.
- The average teenager uses a 26-inch arrow.
- The average youth 12 years old or younger uses a 24-inch arrow.

Care of Arrows

Feathers on arrows should be kept dry. If the feathers become wet, wipe dry and clean before storing. Separate the arrows until they are dry to allow the feathers to expand and regain their original shape. If the feathers are matted down, they can be steamed to return them to their original shape.

Discard any fiberglass or wooden arrows that have splinters or cracks in the shaft.

The arrows can be kept in the quivers during the season, but if they are not going to be used for several months, it is best to store them in the boxes in which they were received. These boxes have individual holes for each arrow. This will preserve the feathers and help prevent wooden arrows from warping.

Arm Guards

The arm guard is either leather or plastic with at least two elastic straps. It is slipped over the forearm that holds the bow and provides protection from the slap of the bowstring after the arrow is released.

Care of Arm Guards

Arm guard should have laces or elastic replaced when needed. Arm guards should be kept in labeled boxes. All leather goods will last longer if stored in a cool, dry place and occasionally cleaned with saddle soap.

Every shooter must use an arm guard and finger protector.

Finger Tabs

Finger tabs are preferable to gloves for group instruction because they present fewer fitting problems. Made of smooth leather, finger tabs absorb the friction of the bowstring across the fingertips. Without them, painful blisters can develop. Many designs are available, but

for beginners the simplest and most inexpensive type is satisfactory.

Quivers

For the young beginner, having a quiver to use when returning arrows from the target to the shooting line will improve safety procedures. (See “Quiver and Bow Rack,” page 44.)

Point-of-Aim

The point-of-aim is simply a small piece of paper or light-colored plastic that can be readily seen when placed on the ground in front of a target. The archer uses it as a sighting point when shooting at the target.

Target Butts

Targets for beginners should be about 48 inches in diameter and made of straw or Ethafoam. The target butts are placed on soft-pine tripods, about 6 inches off the ground. (Ethafoam is the proper material for a target butt. Styrofoam is messy and does not last long.) Keep the targets close to the ground so that missed arrows will not go far and so younger archers can reach the highest arrows easily.

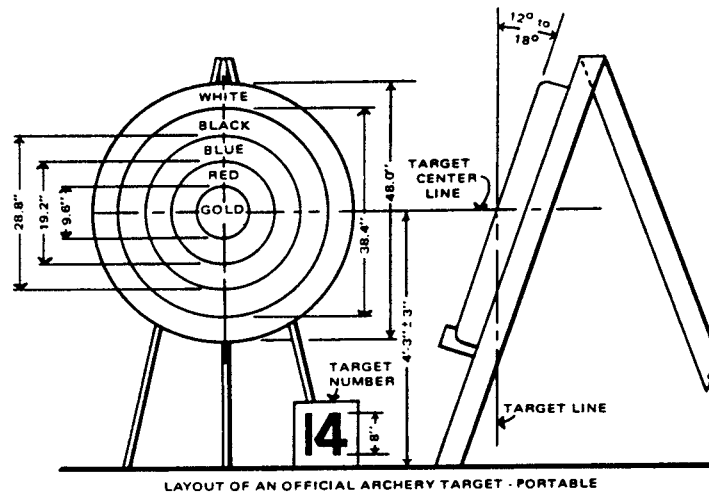
Three to five bales of straw may be stacked to serve as target butts. Make sure that the bales are tied back to a post so that they will not fall forward on someone pulling arrows. Care should be taken in stacking the bales to be sure they are very close together. Keep the bales off the ground by stacking them on old tires.

Target Faces

The 48-inch standard target face is recommended for use on outdoor ranges. These are printed on several types of material, including heavy paper, canvas, and oil cloth. If you use paper targets, paste them to light cardboard or they will not last long. Smaller targets are made to be shot at from shorter distances.

The target is made up of five concentric color zones. Each zone is divided by a thin line into two scoring zones of equal width. Each circle represents the following point values:

- Inner gold = 10 points
- Outer gold = 9 points
- Inner red = 8 points
- Outer red = 7 points
- Inner blue = 6 points
- Outer blue = 5 points
- Inner black = 4 points
- Outer black = 3 points
- Inner white = 2 points
- Outer white = 1 point



Care of Target Faces

Target faces should be removed from mats when the mats are being moistened. Masking tape applied to the back of a target face that is tearing from much use will help it last longer. Center patches that cover the gold and part of the red scoring areas on the target face will double the life of the target faces. The patches must be carefully aligned so the lines marking the scoring areas line up exactly.

Backstops

Baled straw stacked behind the target will catch wild shots. Also, several layers of burlap, old canvas, or rugs hanging loosely over a horizontal pole or plank 1 or 2

inches wide will stop arrows that miss the target. These materials will last much longer if they can be rolled up and stored between seasons.

Any indoor backstop should be a minimum of eight feet from the top to the floor. A backstop should be hung two to three feet from the wall and two to 10 feet behind the targets to prevent arrows from hitting the wall. If there is a possibility of arrows hitting and damaging the floor in front of the targets, such as in a gymnasium, rest the targets on rubber runners, canvas-covered tumbling mats, or on a rug that extends six to eight feet in front of the targets.

BB GUN SHOOTING

BB gun shooting is an exciting, worthwhile activity for boys, and it is one of the most popular program activities held at Cub Scout camps. BB gun shooting provides fun and adventure, yet also teaches skills, discipline, self-reliance, and sportsmanship. We will teach Tiger Cubs with their adult partners, Cub Scouts, and Webelos Scouts how to use BB guns safely.

Intelligent, supervised use of BB guns is consistent with the principle of “safety through skill.”

Approval has been given for BB gun (defined as a smoothbore spring-piston or air rifle propelling shot known as “BBs”) safety and marksmanship programs in district or council Cub Scout programs. No barrel velocity is specified. Tiger Cubs, Cub Scouts, and Webelos Scouts are not permitted to use any other type of handgun or firearm.

A Brief History of BB Guns

In ancient history, blowguns began to appear in many different parts of the world. Although crude, these primitive weapons were very accurate. They were made from bamboo or other hollowed out woods.

A blowgun is a tube into which a hunter blows to shoot a projectile out the other side. This idea was transferred into gun form somewhere in the 1500s. The bellows gun, invented around 1580, is the earliest known air-powered gun.

A few decades later, the first pneumatic (pump-up) air gun was created in France for King Henry IV. The nobility usually owned these early guns, since they were too expensive for the commoners.

In the late 1700s some units of the Austrian army were equipped with air rifles.

In America, records show that in the 1800s, Lewis and Clark had an air gun for hunting and impressing the native Americans. The native Americans called it “the smokeless thunder stick.”

In 1885, in the United States, the Markham Air Rifle Company became one of the first companies to sell BB guns. These pneumatic rifles eliminated bullets and used a small pellet the size of a ball bearing, soon to be called a “BB.”

A few years later, a company that sold steel windmills decided to also sell BB rifles. By 1895, this company had stopped producing windmills and made air rifles full-time and changed the company name to Daisy.

Daisy’s guns were mostly made of steel, which improved the gun’s strength and design. The Daisy air rifle became popular very quickly and within five years Daisy had sold 250,000 BB guns. Soon, Daisy bought out all of its competition.

Daisy also promoted to youth by making special BB guns that related with popular historical characters like Davy Crockett.

In 1984, the Olympic Games featured air guns for the first time.

Today, BB guns are still being produced in both rifle and pistol forms and are very popular among all age groups.

Leadership

BB gun shooting must be conducted *by trained, qualified* on-site range officers who actually direct the operation of the range program and BB gun shooting instruction. To qualify as a BB gun range officer, the range officer must be at least 18 years old and be trained by a National Camping School-trained shooting sports director or a National Rifle Association (NRA) instructor.

The BB gun range officer also must be familiar with the BB gun shooting section of *Shooting Sports for Cub Scouting*, No. 13550, and be registered with the Boy Scouts of America.

The local council issues a Training Course Pocket Certificate, No. 33767, and keeps a record of those who have been certified. Certification must be renewed every two years.

Training BB Gun Range Officers

Use this outline to train BB gun range officers for district or council Cub Scout camps or events. The NRA rifle orientation, when applied to air guns, may also be taught as long as the following topics, including Section IV, are covered.

Section I (40 minutes)

- A. A Brief History of BB Guns, page 19
- B. Safety Guidelines, page 21
 1. Safety Reminders, page 22
 2. What Causes Gun Accidents, page 22
- C. Equipment, page 32
 1. Review air guns, air compression mechanisms, safety devices, air gun ammunition, target faces, and backstops.
 2. Review how to maintain, store, and care for equipment.

Section II (40 minutes)

- A. Range Layout, page 29
- B. Range Operation Rules, page 31

Section III (40 minutes)

- A. Training Cub Scouts, page 20
 1. Teaching Tips, page 20
- B. BB Gun Shooting Basics, page 22
 1. Eye Dominance, page 23
 2. Shooting Shoulder, page 23
 3. Breathing, page 23
 4. Sight Alignment, page 23
 5. Trigger Squeeze, page 23
 6. Follow Through, page 23
- C. Shooting Positions, page 23
 1. Free-arm Standing Position, page 24
 2. Prone Position, page 24
 3. Kneeling Position, page 25
 4. Sitting Position, page 25
- D. Sighting and Scoring Targets, page 26
- E. Range Commands, page 31
- F. Practice shooting

Section IV (30 minutes)

- A. Basic Shooting Activity, page 26
- B. BB Gun Shooting Games and Activities, page 26
- C. Tiger Cubs and BB Gun Shooting, page 21
- D. Cub Scout Shooting Sports Award, page 28
- E. BB Gun Shooting Belt Loop and Sports Pin, page 29

Training Cub Scouts

The objective is to teach Cub Scouts how to use a BB gun safely, to teach basic BB gun shooting skills, and to have fun. They should have the opportunity to fire a BB gun during the first orientation period. This activity is not intended necessarily to produce expert marksmen.

The instructor must always be mindful of his or her responsibility to make safety thoroughly understood before, during, and after instruction and practice. At the same time he or she must have warmth, patience, and understanding for the boy who finds the skill difficult to learn.

Teaching Tips

The coach-pupil method is effective for all types of skill training and is particularly effective in shooting sports. To put this method into practice:

- Put the BB gun in the Cub Scout's hand as soon as possible so he can understand the BB gun while the basics are explained.
- Group participants into pairs (boy and parent/guardian would be ideal).
- The instructor demonstrates the activity or action to be followed before the whole group. When demonstrating techniques, be sure to do them correctly. The instructor then circulates among the pairs giving a word of advice or assistance, recognizing good work, correcting errors, and determining how well the participants understood the method.
- The boy practices while the parent coaches. Let Scouts shoot the first round. At a predetermined signal, reverse the roles. Progressively, participants are learning by observing, by doing, and by coaching.
- Use a positive approach. Use praise sincerely. Before making a correction, question the fault to find the cause. Do show a boy what he is doing wrong.
- Avoid long discussions on the parts of the equipment used. Teach just enough so participants will know how to safely use the equipment.
- Allow each boy to feel the satisfaction of hitting a target as quickly as possible.

Cub Scout BB Gun Shooting Training

Use this outline to train Cub Scouts to participate at a BB gun range at district or council Cub Scout camp.

Section I (20 minutes)

- A. Safety Guidelines, page 21
- B. Equipment, page 27
 1. Review air guns, air compression mechanisms, safety devices, air gun ammunition, target faces, and backstops.
 2. Review how to maintain, store, and care for equipment.

Section II (40 minutes)

- A. BB Gun Shooting Basics, page 22
 1. Eye Dominance, page 22
 2. Shooting Shoulder, page 23
 3. Breathing, page 23
 4. Sight Alignment, page 23
 5. Trigger Squeeze, page 23
 6. Follow Through, page 23
- B. Practice

Section III (60 minutes) (optional activities)

- A. Shooting Positions, page 23
 1. Free-arm Standing, page 24
 2. Prone, page 24
 3. Armrest Standing, page 24
 4. Kneeling, page 25
 5. Sitting, page 25
- B. BB Gun Shooting Games and Activities, page 26
- C. Cub Scouting Shooting Sports Award, page 28
- D. BB Gun Shooting Belt Loop and Sports Pin, page 29

Tiger Cubs and BB Gun Shooting

Tiger Cubs and their adult partners may participate in BB gun shooting activities. The adult partners must be included in all shooting activities. Each Tiger Cub must be paired with his adult partner before being allowed to shoot. In most cases, when Tiger Cubs and their adult partners participate in BB gun shooting, it will be at a day camp.

Keep in mind that boys of this age have very short attention spans (20 to 30 minutes maximum), and tire easily. They probably have little previous experience working



as a group and may require more time to understand how the range operates. Tiger Cubs have a wide range of ability and experience levels, so be ready for anything!

Tiger Cubs may earn the BB gun shooting belt loop and sports pin.

Safety Guidelines

When training youth to shoot, be sure to have proper equipment, secure and safe ranges, and clear safety instruction.

Gun safety is a simple but continuous process. Youth must first learn about safe gun handling. Safe handling skills are developed through practice. The most important safety element is attitude. All the safety knowledge and skills are of little value unless they are used. Being safe means consciously keeping a BB gun under control.

Before handling any gun, a boy must always get permission from his parent or guardian. If this is his first BB gun shooting experience, he should sit down with an adult and discuss under what circumstances the gun can be handled. He must understand that the BB gun is not a toy.

Before using a gun:

- Always get permission from your parent or guardian.
- Always have an adult present when you use a gun.
- Know how the gun works and how to use it.
- Always be sure of your target and what is beyond the target.
- Always wear eye protection.
- Never reuse BBs.

These basic rules apply to handling a BB gun under any circumstances:

1. Always keep the gun pointed in a safe direction. This is the primary rule of gun safety. "Safe direction" means that the gun is pointed so that even if it were to go off, it would not cause injury or damage. The key to this rule is to control where the muzzle or front end of the barrel is pointed at all times. Common sense dictates the safest direction depending on circumstances.
2. Always keep your finger off the trigger until you are ready to shoot. When holding a gun, rest your finger along the side of the gun or the trigger guard. Until you are actually ready to fire, do not touch the trigger.
3. Always keep the gun unloaded until ready to use. When you pick up a gun, carefully point it in a safe direction. Engage the safety, if possible. Then, while keeping your finger off the trigger, open the

action and look inside the chamber(s) to make sure it is clear of ammunition. If the gun has a magazine, remove it before opening the action and make sure it is empty. If you do not know how to open the action or inspect the chamber(s), leave the gun alone and get help from someone who does.

4. Know how to use a gun safely. Before handling a gun, learn how it operates. Know its basic parts and how to safely open and close the action. Know how to remove ammunition from the gun or magazine.
5. Be sure the gun is safe to operate. Just like other tools, guns need regular maintenance to remain in good working order. Regular cleaning and proper storage are part of the gun's general upkeep. If there is any question about a gun's ability to function, then do not use it. Get someone to fix it!
6. Use only the correct ammunition for the gun. Only the BB designed for a particular BB gun can be fired safely in that gun. Do not shoot the gun without loading the proper ammunition.

What Causes Gun Accidents?

Most air gun accidents are caused by ignorance and/or carelessness.

Ignorance: A lack of knowledge

Carelessness: Failure to use knowledge

7. Wear eye protection. Always wear eye protection. Shooters and instructors should wear approved safety goggles at all BB gun ranges. BBs may ricochet.
8. Never use alcohol or drugs before or when shooting. Alcohol or any other substance likely to impair normal mental or physical function must not be used before or while handling or shooting guns.
9. Most guns have a mechanism, called a safety, that helps to prevent the gun from accidentally firing. However, a safety is a mechanical device, which can and will fail. Shooters must be trained that the safety mechanism is not a sure, safe way to prevent a gun from firing. Many accidents have occurred because shooters have relied on the safety mechanism to work.
10. Although not mandatory for BB gun shooting, ear protection may also be worn. Shots fired from guns are loud and the noise could damage the hearing of some shooters.
11. Know your target and what is beyond the target. Be absolutely sure to identify the target beyond any doubt. Equally important, be aware of the area beyond the target. Never fire in a direction where there are people or where any other potential for mishap might exist. Think first. Shoot second.

12. Store guns so they are not accessible to any unauthorized person. Deciding where and how to store guns and ammunition depends on several factors and include security and accessibility. Safe and secure storage means that untrained individuals (especially children) are denied access to guns and ammunition.

Safety Reminders

What should a Cub Scout do if he finds a gun in another place?

STOP!

DON'T TOUCH!

LEAVE THE AREA!

TELL AN ADULT!

Sun Safety on the Shooting Range

The American Academy of Dermatology advises the following protection tips against damaging rays:

- Limit exposure to sun between 10 A.M. and 4 P.M. when the sun's rays are the strongest.
- Generously apply sunscreen with a sun protection factor (SPF) of at least 15 and reapply every two hours when outdoors, even on cloudy days.
- Wear protective, tightly woven clothing, such as a long-sleeved shirt and pants.
- Wear a 4-inch-wide broad-brimmed hat and sunglasses with UV protective lenses.
- Stay in the shade whenever possible.
- Avoid reflective surfaces, which can reflect up to 85 percent of the sun's damaging rays.

BB Gun Shooting Basics

Eye Dominance

Before shooting a gun, the participants should determine which eye is dominant. Just as people are either right- or left-handed, one eye is more dominant than the other. Discovering which eye a shooter favors is important because it could determine on which side the gun is held.

To find which eye is dominant, have participants extend both arms in front of them and form a small hole with their thumbs and index fingers. Instruct them to look at a distant object through the opening and then pull their hands back to their face. The eye that is in line with the object is dominant.

Shooting Shoulder

It is recommended that a shooter use the shoulder that is on the same side of the body as the dominant eye. If the right eye is dominant, place the firearm against the right shoulder. If the left eye is dominant, use the left shoulder.

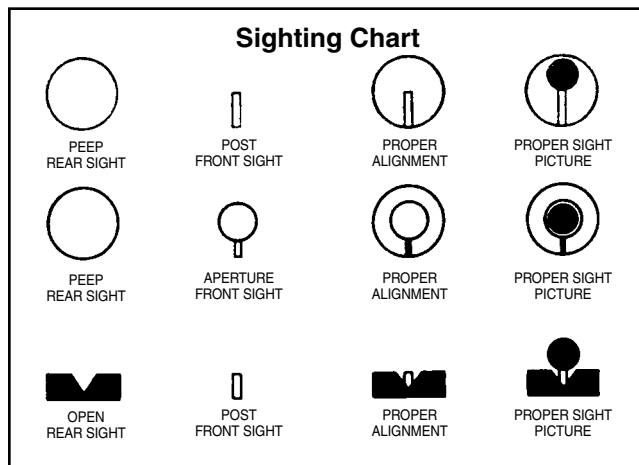
Breathing

When shooting, stop breathing before firing a shot. Breathing causes the body to move and makes it difficult to maintain a steady sight picture. Before firing, relax and get comfortable. Then exhale and stop breathing. This technique will help shooters aim by reducing the body and rifle movement in relation to the target. Do not stop breathing for longer than 8 to 10 seconds while aiming at the target. If you are not able to shoot within that time, stop, take a breath or two, and repeat the process.

Sight Alignment

The shooter must learn proper sight alignment. This is the relationship of the front and rear sights to the eye. The shooter's dominant eye must be lined up with the front and rear sights, and the sights must be positioned so that the front sight device is aligned properly with the rear sight.

Proper sight alignment is a key to accurate shooting. Any misalignment of the front sight with the rear sight introduces an angular error that is multiplied with distance.



A correct sight picture is obtained by achieving the proper alignment and then putting the aligned sights into their proper relationship with the target.

Trigger Squeeze

Trigger squeeze is the term used to explain the manner in which pressure is applied to the trigger. Some other terms commonly used are trigger pull, trigger control, trigger press, and trigger movement. While all of these terms are correct, the preferred term is trigger squeeze because it accurately describes the smooth application of pressure required.

When ready to begin squeezing the trigger, the index finger should be located on the trigger so that the trigger is about halfway between the tip of the finger and the first joint.

The trigger must be squeezed straight back in a smooth, continuous manner without disturbing the sight alignment. Once trigger squeeze has begun, keep squeezing smoothly and continuously—do not speed up or slow down or apply pressure in a start-and-stop manner. Use the same type of pressure that would be used to squeeze a drop of liquid from a medicine dropper—a gradual, steady application of pressure until the drop finally falls. Just as it would be impossible to predict the instant that the drop of liquid will fall, it should be impossible to predict the precise instant that the gun will fire. Each shot should come as a surprise.

For best results, trigger squeeze and sight alignment must be done simultaneously.

Follow Through

The shooter must also master proper follow-through. Follow-through means to continue to do everything that was being done at the time the shot was fired. In other words, keep aiming until the BB hits the target.

The idea is to prevent any unnecessary movement before the projectile leaves the barrel. Because an air gun takes longer to send a projectile out of the barrel, proper follow-through is particularly important.

Shooting Positions

Proper body position is essential to achieve a good shooting score. When learning any shooting position, these basic steps must be followed:

1. Study the position.
2. Practice the position without a gun. (Learn to put the feet, legs, body, head, and arms in the correct position without holding a gun.)
3. Practice the position with a gun.
4. Align the position properly with the target. Adjust the position so that the gun points naturally at the target.
5. Shoot from the position.

A number of positions are used in air rifle shooting. The position used depends upon the type of shooting being done. The free-arm standing position is used most often. The arm-rest standing position is used when a high degree of stability is required, as in competitive shooting events. The prone position or bench rest position is the steadiest because the elbows and almost all of the body is in contact with the ground. Following are some positions described in detail. The directions are for right-handed shooters. Left-handed shooters should adjust their positions accordingly.

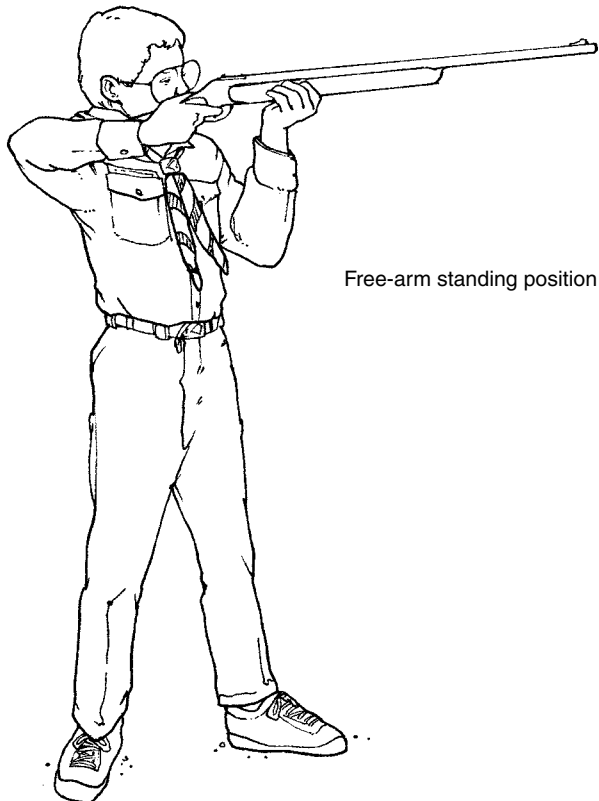
Free-arm Standing Position

Body Position

- **Feet.** Stand with feet shoulder width apart and body weight evenly distributed.
- **Body and head.** Keep the body and head comfortably erect.
- **Knees.** Keep the knees straight, but not locked.
- **Left arm.** Rest the left arm against the rib cage to support the rifle.
- **Left hand.** Place the left hand under the fore-end of the rifle to support the weight of the rifle.
- **Right hand.** Grasp the rifle grip with the right hand.
- **Right shoulder.** Position the rifle butt against the right shoulder so that the sights are at eye level.

How to Move Into Position

- Keep the rifle pointed in a safe direction and the index finger off the trigger. Hold the rifle in both hands and move to the firing point.
- Turn the body so that the left side of the body is closest to the target.
- Raise the rifle to eye level and position it against the right shoulder.
- Align the body's position with the target.
- To correct aim right or left, move the feet. To make vertical adjustments, raise or lower the rifle. To make horizontal adjustments, move the feet.



Free-arm standing position

Prone Position

Body Position

- **Body.** Lie on the ground, facing the target and angled slightly to the left.
- **Right knee.** Slightly bend the right knee.
- **Right leg.** Draw the right leg up, keeping it parallel to the back, and place the right foot on the ground.
- **Left elbow.** Extend the left elbow forward.
- **Left hand.** Hold the fore-end of the rifle with the left hand.
- **Right hand.** Grasp the rifle grip with the right hand.
- **Right shoulder.** Position the rifle butt against the right shoulder so that the sights are at eye level.

How to Move Into Position

- Keep the rifle pointed in a safe direction and the index finger off the trigger. Hold the rifle in both hands and move to the firing point.
- With the rifle held in the left hand and pointed in a safe direction, use the right hand to help lower the body to a kneeling position. Continue to hold the rifle in the left hand, pointed in a safe direction, and lower the body to the floor (again using the right hand to assist).
- Extend the left elbow forward.
- Raise the rifle to eye level and position it against the right shoulder.
- Align the body's position with the target. To correct aim right or left, pivot the body around the left elbow. To correct aim up or down, move the left hand forward to lower the rifle or backward to raise the rifle.



Prone position

Kneeling Position

- Kneel in a comfortable position.
- Keep the right knee on the floor with the foot directly under the center of the buttocks.
- With the instep and toes of the right foot flat on the ground, sit on the bottom of the heel, not on the back of the foot. Use a kneeling roll on the instep to take pressure off the foot.
- Place the flat part of the left elbow on the flat part of the left kneecap.
- Lay the rifle in the left hand for support. To correct aim, pivot the body on the right foot. Adjust the left foot for balance.



Kneeling position

Sitting Position

Sitting is a new variation on the arm-rest standing position.

- Sit cross-legged at a 45-degree angle to the line of fire.
- With the sides of the feet flat on the ground, rest the calves on the upper sides of the feet.
- Rest both elbows on the legs just behind the knees.
- Hold the rifle in the left hand with fingers relaxed.
- Grasp the rifle grip with the right hand.
- To correct aim to the right or left, pivot the body. To correct aim up or down, move the supporting arm forward lower the rifle or backward to raise the rifle.
- To help with proper sight alignment, position the stock against the shoulder.



Sitting positions



Sighting and Scoring Targets

Have the instructor zero all BB guns before the range is used the first time. Use a supported position (sandbags or other type rest placed on the deck or on a sturdy table) to zero BB guns. The objective is to determine where the BB gun places holes in the target when the effects of human factors (including breathing, trigger squeeze, and position) are minimized by using a rest. A correct sight picture and alignment with a six o'clock hold must be used. Adjust the sights to achieve a 10-ring score.

When the BB gun is properly zeroed, fire a minimum of three shots onto a final target for a sighting record. Put the BB gun number on the target, sign and date it, and post it on the range bulletin board.

When a camper fires a good group outside the 10-ring, review sight adjustments. Sighting aids are available that can be used for instruction. The Paige Instructional Sighting Device, available through the National Rifle Association, is a popular aid.

Basic Shooting Activity

This shooting activity covers many of the basic fundamentals needed in shooting a BB gun. Pair boys and adults as shooters and coaches.

1. Greet the participants.
2. Bring the participants onto the range. Stand behind position and explain shooters and coaches.
3. Show the gun and say "This is a BB gun."
4. Point to the barrel and say, "This is the barrel."
5. Point to the muzzle and say, "This is the muzzle. It is the end the BB shoots out."

Always keep the gun pointed in a safe direction.

6. Point to the action and say, "This is the action. It has the trigger or the part you squeeze to shoot."

Always keep your finger off the trigger until you are ready to shoot.

7. Say, "The action also has the chamber where you put the BB to load the gun."

Always keep the gun unloaded until ready to use.

8. Point to the stock and say, "This is the stock." Then demonstrate how to hold the gun: Put the butt of the stock against your shoulder, hold the grip with the hand of the same arm, keeping your finger off the trigger and pointed in the same safe direction as the gun. Hold the forestock with your other hand.
9. Say, "You will use the free-arm standing position like this." Demonstrate the position that is recommended for your range.

10. Have everyone on the range put on eye protection, either safety glasses or goggles.
11. Say, "Shooters, please move forward at my command." Then give the command, "ON THE FIRING LINE."
12. Assume the shooting position.
13. Have shooters pick up their guns, keeping them pointed in a safe direction down range.
14. Have shooters again assume the shooting position, this time with the gun, and look through the sights. Explain how the sights are used.
15. Once all shooters know how to assume the shooting position and how to properly hold the gun, explain and demonstrate how to charge the gun.
16. Have shooters pick up one BB and load it into the chamber. (Explain further.) Close and ready the gun.
17. Return to your shooting position. Note that everyone can make ready and load the gun.
18. Give the command "READY ON THE FIRING LINE."
19. When shooters are in the ready position, give the command "COMMENCE FIRING". Shoot all your five shots.
20. Watch for safety and help as needed.
21. Give the command "CEASE FIRING." Everyone is to stop shooting.
22. Give the command "CLEAR ALL GUNS." Have everyone clear their gun.
23. Explain and demonstrate how to make a gun safe. Explain how to ground the gun for position and range.
24. Have shooters and coaches switch positions.
25. Repeat from step 10.

Groups may continue to rotate shooting or may exit the range.

BB Gun Shooting Games and Activities

A variety of games or activities can be done with BB gun shooting skills. Different ranges could be set up to play a particular game or courses could be set up where participants go from station to station. BB gun shooting games and alternate activities work well especially when youth are in camp for more than one day or if a council sponsors a special BB gun hooting camp for Cub Scouts. Shooting games are designed to improve shooting skills. Remember—safety is a must.

The following games and activities are appropriate for Tiger Cubs with their adult partners, Cub Scouts, and Webelos Scouts.

Fun Target Activities

- Make 8½-by-11-inch targets with several squares on each. Put a number in each square. Shooters can see the squares but not the numbers in them. After firing at the page, the shooter adds up the numbers from the squares that his BBs hit. The highest score is the winner.
- Place dots on a target, then shoot at the back side of the target. Count the score from the dotted side.
- Suspend table tennis balls in a box to use as targets.
- Create a target by taping round candy to the back of a box. When the target is hit by the BB the candy shatters.
- Set up balloons as targets.
- Set up crackers as targets. Have participants shoot at the narrow edges of the crackers.

Tic Tac Toe

Place three rows of three balloons on a target mat. Divide the group into two lines and have them stand in a single file 20 feet from the target. At the signal to shoot, each shooter will shoot 1 BB and step back. The second and each succeeding person will shoot one at a time. The first team to break three balloons in any line is the winning team.

BB Gun Shooting Practice Fun

A practice station is a simple, basic BB gun shooting range, but is very fun for the boys. Many boys have few opportunities to shoot guns, so having the opportunity at a council camp or event to practice is a great experience for them.

Discuss and emphasize the primary rules of proper gun handling. Point out that all guns are potentially dangerous.

Practice the following skills:

- Have participants always point the muzzle in a safe direction and to be sure of their target.
- Show how to handle a gun while standing and when walking.
- Demonstrate and practice various gun-handling situations—how to pass the gun to another person, how to cross a fence with it, how to store it in an automobile, and how to get in and out of a boat with it. Use real or artificial situations, but use the Scouts as demonstrators and require them to practice with others watching.
- Review sight pictures and sight alignment. Give reasons for sighting in a gun before shooting. Tell how little mistakes in sight alignment cause big misses on the target.
- Explain sight adjustment—move the rear sight in the direction you want the BB to go.

- Have relays, prone position without magazine, using sling or sandbag and paper targets.
- Explain the use of BB dishes.
- Demonstrate sitting, kneeling, and standing shooting positions.
- Shoot five rounds per Cub Scout using the standing position.

Bikathlon

The bikathlon event is modeled after the winter Olympic bikathlon where competitors cross-country ski and shoot rifles.

In the bikathlon, the Cub Scouts bike around an off-road course, stop at various points, dismount from the bikes to shoot targets that fall over when struck, and then continue along the course. Though the sport requires a certain amount of strength for the biking portion, the BB gun shooting is the key to the event. It takes real skill to hold a gun steady and shoot when one is puffing from an all-out bike ride.

Equipment and Materials

- Bikes
- Elbow and knee guards
- Safety helmets
- Stopwatch or other timing device
- BB guns
- Safety glasses to be worn at the firing line
- Cub Scout shooting sports certificates, No. 34216

Personnel

Assign adults to the following positions:

- Match director (responsible for the event)
- Jury (three people who are responsible for solving any dispute that may arise during the match and to ensure compliance of the rules by participants)
- Range officers (responsible for safety on the range)
- Statistical officer (responsible for tracking participants' total lapse time)
- Starter (the official who starts each relay or heat)
- Other personnel needed are: timers, first aid personnel, course marshals, and repair personnel (for guns and bikes)

Setting Up the Course

Make the course approximately one-third mile in length, in the form of a loop so that the starting line and a finishing line are in the same position. One point along the course becomes the firing line—with a separate position for each racer. Identify each firing point with a color, as assigned to each participant. Place a bike rack in a safe place with easy access. The course should not be in a rocky area, and the instructors should walk it to

ensure that all dangerous obstacles have been removed. The course can be an existing track or laid out with cones or rope guides to make sure each biker follows the same route.

Running the Race

The bicycle is ridden to the shooting point, the youth dismounts, parks the bike, and shoots the targets. The biker shoots at each target until it is hit and knocked over, then remounts the bike and finishes the race. A limit may be imposed on the number of shots for each target and a time penalty imposed if the target is not knocked over.

The youth finishing the race in the shortest time is declared the winner. The key to the event is not only to pedal fast, but also to shoot quickly and accurately.

Shooting is normally done from the standing position but may be changed at the camp director's discretion. Participants are never allowed to ride the course with the gun. The guns are to remain at the firing point at all times.

Every participant is required to attend a 10-to-15 minute session on bike safety and air gun handling before being allowed to participate in the bikathlon.

This safety session should, as a minimum, cover the following:

- Course layout and general rules
- Range procedure and safety
- How the match is scored
- How to operate and load the guns
- Shooting safety and safe gun handling
- Basics of sighting and shooting
- Bicycle use and riding safety
- Hands-on practice as time, personnel, equipment, and facilities allow
- A written test on air gun and bicycle safety (optional)

Action BB Gun Shooting Course

Set up an action BB gun shooting course using several games or targets as different stations in the course. Each station could encourage the shooters to use a different shooting position. One station could be used to do maintenance work for the BB gun shooting program.

Cub Scout Shooting Sports Award

A Cub Scout Shooting Sports Award, No. 34216, may be awarded to a boy whenever he achieves a level of marksmanship or excellence. The BB gun range officer, with other leaders of the camp or event, may determine special circumstances where a unique award might be useful. The award might be given for proficiency in shooting, best sportsmanship, or for some other appropriate achievement.

The award is available from the National Supply Division in packages of 100.

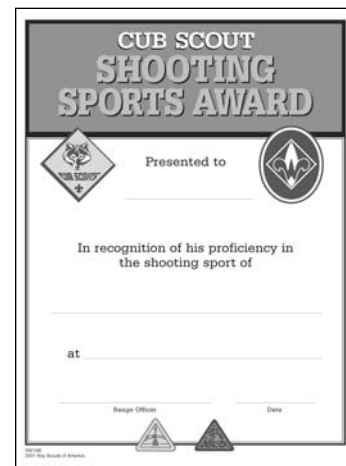
Belt Loop and Sports Pin Activities

Archery belt loops and sports pins may only be earned through council- or district-sponsored programs.

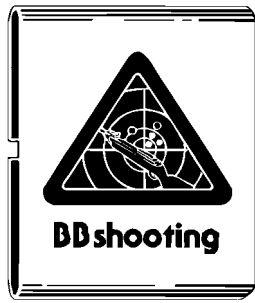
BB shooting belt loops and sports pins may only be earned through council- or district-sponsored programs.

Quality camp programs will offer a BB gun shooting program that meets the requirements for boys to earn the BB gun shooting belt loop. In a program where boys come for more than one day, councils should offer activities that meet requirements for the BB gun shooting sports pin. Dens and packs enjoy coming to council camps where they have the opportunity to earn belt loops and sport pins that cannot be earned at home.

See the requirements for the BB gun shooting belt loop and sports pin on page 29. Also see the sample certificates on page 40. Use these certificates to show that boys have met the requirements for the loops and pins. Their pack may then purchase the BB gun shooting belt loops and sports pins at their local Scout shop.



BB Gun Shooting Belt Loop and Sports Pin



Tiger Cubs complete requirements while working with their parent or adult partner. Parents and partners do not earn loops or pins. All requirements must be completed under the supervision of a certified BB gun shooting range officer.

Belt Loop Requirements

Complete three requirements.

1. Explain the rules for safe BB gun shooting you have learned to your leader or adult partner.
2. Demonstrate to your leader or adult partner good BB gun shooting techniques, including eye dominance, shooting shoulder, breathing, sight alignment, trigger squeeze, and follow-through.
3. Practice shooting at your district or council camp for the time allowed.

Sports Pin Requirements

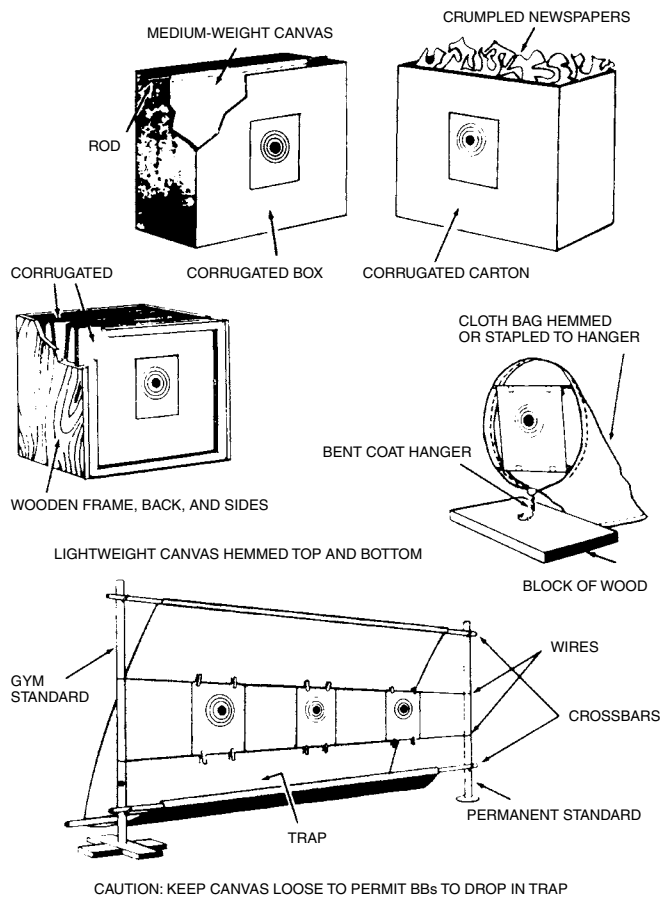
Earn the BB gun shooting belt loop and complete five of the following.

1. Explain the parts of a BB gun and demonstrate how to properly load the gun.
2. Demonstrate the shooting positions.
3. Develop proficient shooting techniques by practicing for three hours.
4. Learn the correct scoring techniques for target BB gun shooting.
5. Make a poster that emphasizes the proper range commands.
6. Draw to scale or set up a BB gun shooting range.
7. Show improvement in your shooting ability with an increase in scoring points.
8. Help make a type of target for the camp BB gun shooting range.
9. Show how to put away and properly store BB gun shooting equipment after use.
10. Explain how to use the safety mechanism on a BB gun.
11. Tell five facts about the history of BB guns.

Range Layout

Review the BB gun range layouts on the following page. Safety is a primary concern when operating a BB gun range and all safety rules must be followed.

Cub Scout BB Gun Range



Shooting on a Safe Range

A safe range must have three things:

1. **A safe area.** Whether inside or outside, be sure the range is set up so that no one can accidentally walk in front of the firing line. When indoors, make sure doors and side windows are locked. When outside, make sure to always shoot in a safe direction. In either case, never point the gun toward windows or where people might walk.
2. **Safe distance.** Maintain at least 15 feet between the shooter and the target.
3. **Safe backstop.** A backstop to trap BBs and hold the target can easily be made from a large cardboard box. Do not shoot at a hard surface that could cause a ricochet.

Contact the parks and recreation department for a list of local shooting facilities. A local gun shop dealer can usually tell you where shooting clubs may be found in your community.

Important! Arrange facilities so that there is no possibility of anyone inadvertently walking behind the targets while shooting is in progress. No one may stand directly in front of the target while shooting is in progress.

Suggested Range Layout

NOTE:

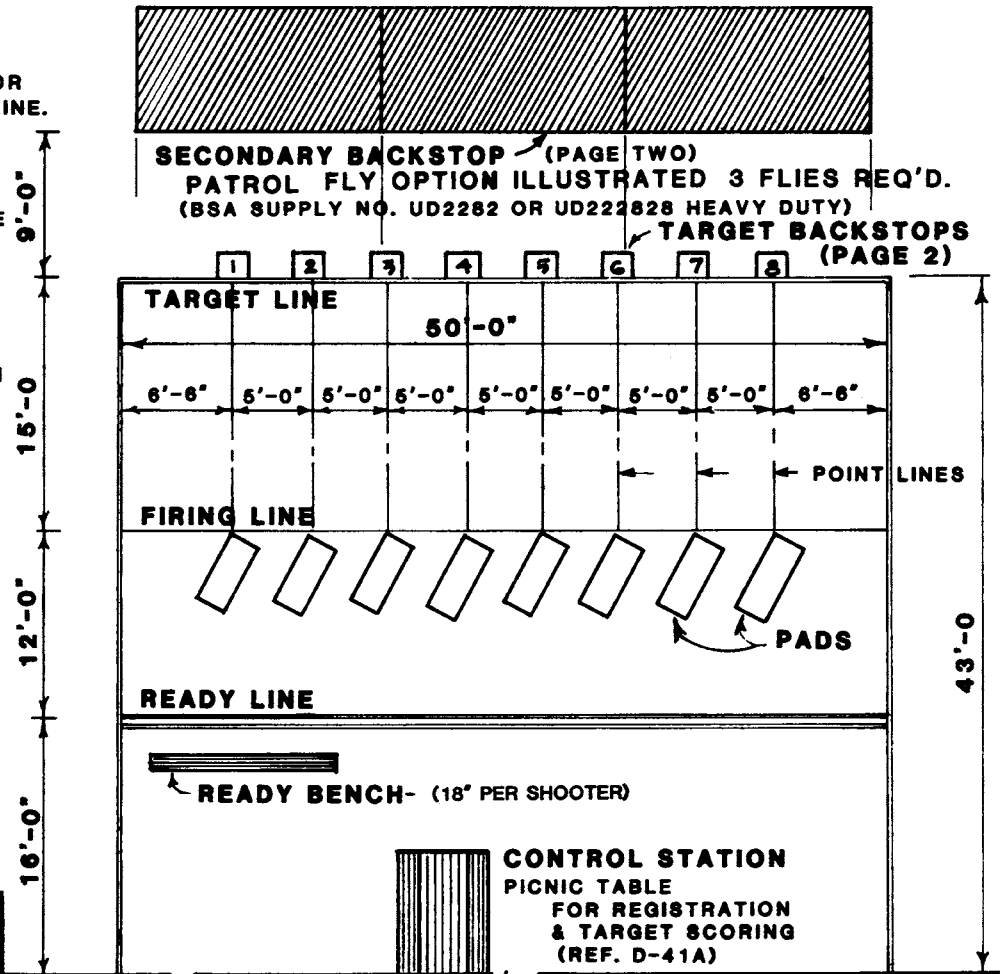
1. 8 POINTS MAXIMUM PER CERTIFIED INSTRUCTOR PRESENT ON THE FIRING LINE.
2. POINTS SPACED 5' APART WILL ACCOMMODATE ONE SHOOTER AND ONE COACH PER POINT, WHO WILL ALTERNATE POSITIONS ON COMMAND.
3. MARK ALL LINES WITH ATHLETIC FIELD CHALK (LOGS, CURBS, ETC. CAUSE RICOCHETS.)
4. POINT LINES ARE OPTIONAL, BUT WILL HELP TO MINIMIZE CROSS FIRING.



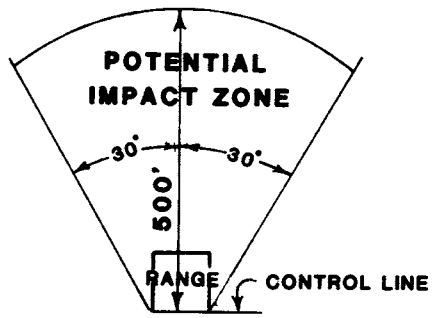
NORTHERLY ORIENTATION WILL MINIMIZE ADVERSE SUNLIGHT CONDITIONS

CAUTION
 A SPRING TYPE AIR RIFLE CAN FIRE A BB OVER 500 FEET
 A BB CAN REBOUND/RICOCHET OFF ALMOST ANYTHING
THINK SAFETY

(ACCOMMODATES 16)

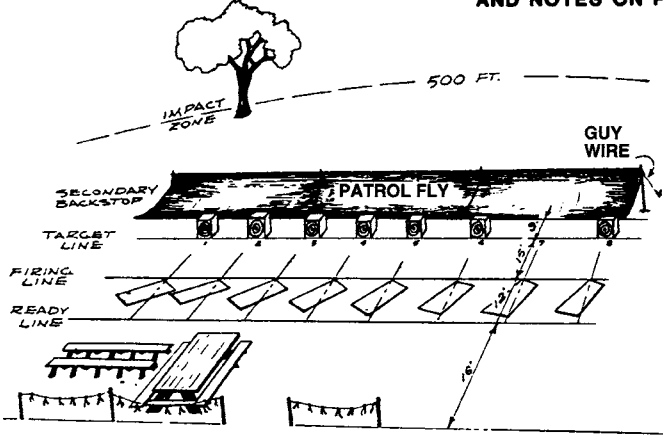


CONTROL LINE
 NO UNAUTHORIZED PERSON BEYOND
 SEE DIAGRAM BELOW
 AND NOTES ON PAGE 2.



SITE CONDITIONS WILL DETERMINE ACTUAL IMPACT ZONE. ZONE SHOULD BE FLAGGED.

THIS STANDARD IS SPECIFICALLY FOR
 SPRING TYPE AIR RIFLES ONLY
 4.5 MM STEEL AIR GUN SHOT (BB CAL.) ONLY



30-BB Gun Shooting

Range Operation Rules

When operating the range, the safety rules must be remembered and constantly obeyed.

1. If the range is outdoors, fly a red range flag whenever the range is in use. The flag should be large enough and high enough on a flagpole to be seen from all approaches to the range.
2. Shooters reporting to the firing line will be issued a specific number of BBs and a BB dish that will be placed in plain sight at the firing point.
3. Shooters will be instructed that in case of a misfire the BB gun will be kept pointed at the target. The instructor will be called. If the malfunction is due to a broken part, the gun, after being cleared of BBs, will be removed from the firing line.
4. BB guns must be left with the action open or at half-cock, in the case of lever action spring-piston air guns, except when the shooter is in position on the firing line and has been given the command to load. (Half-cock position on a lever action spring-piston air gun is with the lever down, but without the spring compressed or cocked. To check to see if the gun is cocked, pull the lever forward; if there is no pressure on the lever, the spring is compressed and the gun is cocked.)
5. As soon as the command to cease firing is given, the BB guns must be opened and placed on the shooting mat with their muzzles pointing down range, actions open or at half-cock, whether or not the shooter has completed firing all his shots. This rule must be enforced and obeyed absolutely.
6. In preparing to fire, the targets are first placed in position. The shooters then take their places on the firing line. While the first group is firing, the targets are prepared for the next group of shooters and they are told their firing point. When the first group has completed firing and all BB guns are unloaded and actions open or at half-cock, the fired targets are taken down and the new targets set up.
7. No one, shooter or instructor, is allowed in front of the firing line after the order has been given to load and before the order has been given to cease firing—actions open.
8. No one is allowed on the firing line except the shooters and their coaches or instructors.
9. Horseplay of any kind is forbidden on the range. Spectators and those who are waiting their turn to fire are not permitted to do anything that may distract the attention of the shooters from the business of shooting accurately and safely.
10. All BB guns not in use should be kept in racks with the actions open or at half-cock.

Sample Range Rule Poster:

BB Gun Shooting Range Rules

1. This range may be opened only by a certified BB gun shooting range officer.
2. All commands issued by the range officer must be obeyed immediately.
3. Stay behind the firing line. Do not straddle the firing line.
4. Do not pick up a gun unless told to by the range officer.
5. Absolutely no running on the range.
6. No horseplay or unnecessary talking on the range.
7. If in doubt about these rules, ask your leader or range officer for advice and help.

Range Commands

When ready to start firing, the range officer commands:

“ON THE FIRING LINE.”

Immediately, each shooter takes his assigned place at his firing point and prepares to fire, but does not load. The range officer checks the location of each shooter to ensure correct firing point and target number.

The range officer makes sure the range is clear, then asks:

“IS THE LINE READY?”

If there is any shooter who is not ready or whose target is in bad order, that shooter immediately raises his arm and calls:

“NOT READY” and gives the number of his target.

The range officer will immediately call:

“THE LINE IS NOT READY.”

The range officer will investigate the difficulty and assist in correcting it. When the difficulty has been corrected, the range officer calls:

“IS THE LINE READY?”

If all is ready, the range officer then calls:

“THE LINE IS READY.” (This means the line is ready on the right, ready on the left, and ready on the firing line.)

Range Commands (cont.)

The range officer calls:

“LOAD.” Shooters load the BB gun chambers.

The range officer calls:

“READY ON THE FIRING LINE.”

The range officer commands:

“COMMENCE FIRING.”

After firing, the range officer commands:

“CEASE FIRING—CLEAR ALL GUNS.” All BB gun chambers and magazines are unloaded and shooters leave the firing line with the actions of their BB guns open.

Repeat the above steps for all succeeding shooters.

The range officer will immediately command “CEASE FIRING” if any incident occurs that could result in possible injury to some living thing should firing continue.

“AS YOU WERE” means to disregard the command just given.

“CARRY ON” means to proceed with whatever was being done before the interruption occurred.

Equipment

BB shooting equipment may be secured from gun retailers. See Resources for Equipment, page 39.

BB Gun Shooting Equipment for 200 Campers

- 1 range—50-foot range with eight firing points 15 feet from firing line to target
- 12 BB guns
- 1,200 targets
- 18,000 BBs
- 8 target backstops
- 1 set of 17-by-22-inch instruction wall charts
- 10 safety glasses
- Each BB gun should be equipped with an adjustable sling of $\frac{1}{8}$ -inch-wide nylon webbing and with target sights.

Range Accessories

- Tarps to provide shade over the pads protecting the shooters and the guns

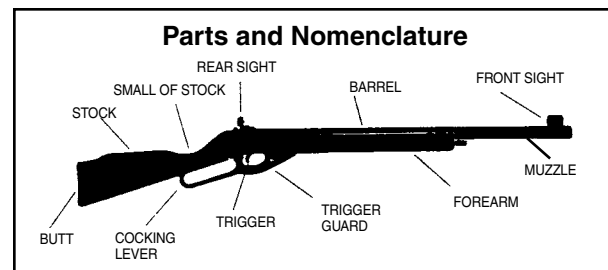
32—BB Gun Shooting

- BB dishes at each firing point
- Shooting mats at each firing point
- A desk with storage space for equipment for recording scores. It should be behind the ready line and near the bulletin board
- Ample waste receptacles behind the firing line for fired targets and trash
- Sandbags or other rest equipment for each firing point
- Range flag and pole for use during range operation
- BB gun racks to store BB guns that are not in use

Air Guns

Air guns, traditionally regarded as guns for beginners, are now enjoyed by shooting enthusiasts at all skill levels. Some, such as the familiar BB gun, are excellent for beginners, while other types are designed for the seasoned competitor. Whether used for recreation or sport, for field use or as an inexpensive training tool, air rifles are an excellent way to enjoy shooting.

In recent years, air guns have undergone dramatic improvements, making them more reliable, durable, and accurate. Air guns can be fired safely by shooters of all ages and experience levels on a wider variety of ranges than any other type of firearm.



Spring-Piston Guns

Spring-piston air guns use a manually operated lever, pivoting barrel, or other device to move a piston that in turn compresses a mainspring located in the frame or receiver portion of the gun.

When the piston is completely retracted, the mainspring is fully compressed. The piston will remain in this retracted position until the shooter releases it by pulling the trigger. The piston, under pressure from the compressed mainspring, moves rapidly forward when it is released, and compresses the air in front of it. The compressed air then forces the projectile out of the barrel.

In this type of air gun, the air that propels the projectile is not stored in a reservoir prior to firing; the air is compressed by the movement of the piston after the trigger is pulled.

Pneumatic Guns

Pneumatic air guns use the principle of stored compressed air or gas and can be divided into two categories:

1. **Single-stroke and multi-pump pneumatic air guns** that use a manually operated lever (or a pivoting barrel that acts as a lever) to force air through a valve mechanism in order to compress and store the air in an air reservoir or chamber.

In the single-stroke model, one stroke of the lever charges the air reservoir with enough compressed air for one shot. After the air reservoir has been charged, additional strokes of the lever are not required. In some models, additional strokes will have no effect; in other models, additional strokes may result in damage to the gun.

In the multi-pump model, a similar lever and valve mechanism is used to compress and store air; however, the lever must be pumped several times in order to build sufficient air pressure for one shot. The amount of air pressure in the reservoir is determined by the number of times that the lever is pumped. This adjustable air pressure feature allows the velocity of the projectile to be varied, thereby enabling the shooter to use this type of air gun for a variety of activities.

In both the single-stroke and multi-pump models, all of the air that has been compressed will remain in the reservoir until the shooter initiates its release by pulling the trigger. The movement of the trigger releases a spring-driven hammer that strikes an air exhaust valve. This valve immediately releases the stored air, which then propels the projectile out of the barrel. Little or no compressed air remains in the reservoir. For the next shot, the shooter must again use the lever to compress and store air.

2. **Compressed CO₂/air pneumatic guns** that use CO₂ or air that has been compressed and stored in a metal cylinder, or air that is compressed by an external air pump.

In some models, a small disposable CO₂ metal cylinder is inserted into the gun. When the shooter pulls the trigger, a measured portion of the compressed gas stored in the cylinder is released to propel the projectile out of the barrel. Since not all of the gas is released at one time, additional shots may be fired without having to recharge the gun.

Air Compression Mechanisms

Various mechanical designs employing levers, pivoting barrels, or other devices are used to compress the air in spring-piston air guns and in pneumatic single-stroke and multi-pump air guns. Five current designs are break-barrel (also known as barrel-cocking), over-lever, under-lever, side-lever, and slide.

Air Gun Ammunition

There are five basic types of air gun ammunition: pellets, lead balls, darts, bolts, and BBs.

BBs, the most familiar air gun ammunition, are made of steel and are coated to prevent rust. BBs are fired in a smoothbore air rifle and are intended for plinking and target competition. Some brand names are Beeman, Crosman, Daisy, and Marksman.

Equipment Maintenance and Storage

Keep BB gun shooting equipment in good condition. Repairing guns and keeping target faces and mats in good condition can save money and make shooting experiences more successful.

Even when shooting is occurring daily, BB gun shooting equipment should be kept in locked storage when not in use to protect it from weather, rodents, and theft. (See page 46 for instructions on how to build storage lockers and other storage equipment.)

OTHER SHOOTING SPORTS

Many council programs have shooting activities that include wrist rockets (slingshots), catapults, balloon launchers, rockets, and some other creative devices. These items are fun and, in most cases, seem harmless. However, any type of shooting activity can be dangerous, and if safety precautions are not taken, accidents can happen easily. Great care should be taken that safety is the key factor for any activity where items are shot through the air.

- All safety guidelines enforced in archery and BB gun shooting apply to all other types of shooting sports.
- A safe range must be provided for any activity, such as wrist rockets, catapults, or rockets, that involves shooting objects or water in the air.
- A range officer must supervise the range.
- All shooting activities must be approved by a National Camp School-trained shooting sports director.

Shooting on a Safe Range

A safe range must have three things:

1. A safe area
2. A safe distance
3. A safe backstop

1. **Safe area.** Whether inside or outside, be sure the range is set up so that no one can accidentally walk in front of the firing line.
2. **Safe distance.** Maintain at least 15 feet between the shooter and the target.
3. **Safe backstop.** A backstop designed to trap items and hold the target is required.

Pellet Guns

Pellet guns are not approved for Cub Scouting.

Approval has been given for BB gun (defined as a smoothbore spring-piston or air rifle propelling shot known as “BBs”) safety and marksmanship programs in district or council Cub Scout camps or activities.

Tiger Cubs, Cub Scouts, and Webelos Scouts are not permitted to use any other type of handgun or firearm.

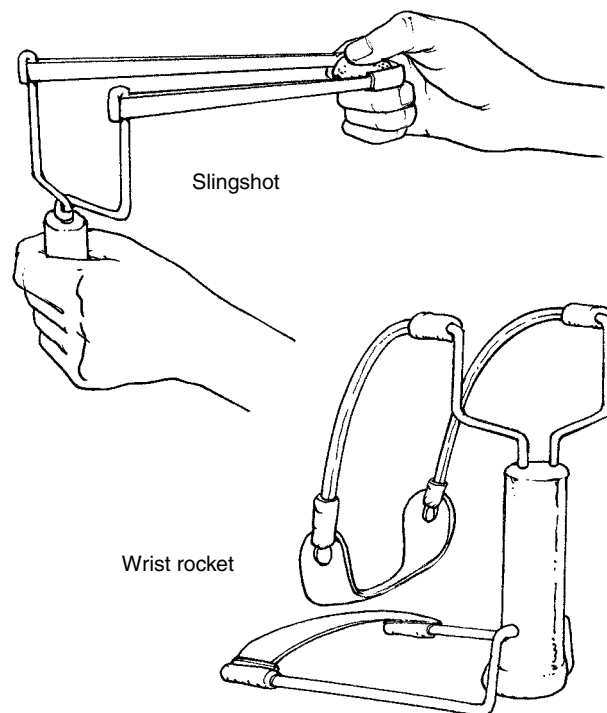
Some BB guns can shoot both BBs and pellets; however, only BBs may be used.

Slingshots and Wrist Rockets

Using slingshots is an affordable, fun activity in council-sponsored camps. Boys love to shoot slingshots, and many have not had previous experience with them. Although exciting and fun, slingshots are not toys. Boys must understand that they must follow the rules when shooting or they will not be allowed to participate. Remember the story of David and Goliath.

Shooting items from slingshots and wrist rockets can be dangerous. For these activities, follow the same safety guidelines and rules as used for BB gun shooting. Always shoot at a range such as an archery or BB gun shooting range.

Equipment



Slingshots are usually fork-shaped (“Y”) and made out of very strong and durable wood or aluminum. Broom wood, which is both strong and lightweight and lends itself to carving, is also good for slingshots.

Wrist rockets are a type of slingshot. They are designed to brace against the wrist and therefore seem to be steadier.

There are many companies that sell excellent slingshots and wrist rockets. Companies that sell BB guns or archery equipment would be good resources for these items. Less expensive slingshots and wrist rockets are available from chain stores.

Targets

Targets for slingshots and wrist rockets can be made from a variety of materials, including paper, cans, plastic bottles, and balloons. Paper targets can be home-made or purchased. Cans are excellent as they make a great sound when hit. Cans, plastic bottles, and balloons can be hung from strings or attached to netting. A sample target is shown on page 42. Practice with the sling shot or wrist rocket on a bulls-eye about 2 inches in diameter on a with the target 10 feet away, then move the target out to 25 yards.

Ammunition

Items shot from slingshots and wrist rockets are considered ammunition. Generally people use small rocks and pebbles, however, this is not appropriate for Cub Scouts. Instead, use a softer ammunition such as pinto beans or even soft chunky dog food. Ammunition such as ball bearings may not be used.

Slingshot and Wrist Rocket Guidelines

(Instructions are for right-handed shooters. Reverse instructions for left-handed shooters where applicable.)

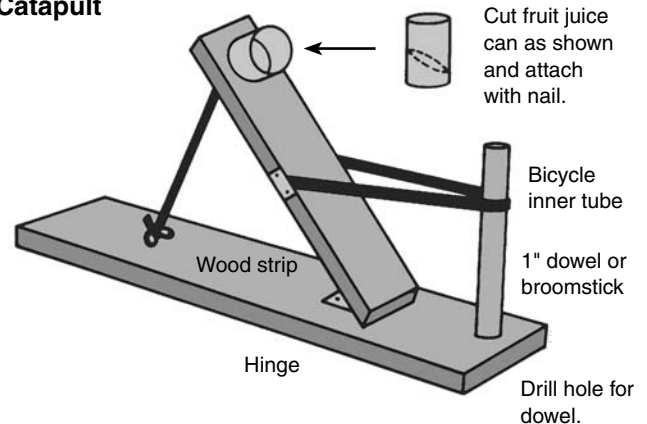
1. A range officer must be present and a 1:1 adult/boy ratio must be used.
2. Use a safe shooting range such as a BB gun range or archery range.
3. Wear protective eyeglasses or goggles.
4. Do not pick up a slingshot until told to do so.
5. Never shoot at anything if you cannot see what is behind it.
6. Do not use a slingshot with a power band damaged by age or weather.
7. Never shoot up into the air.
8. Never cross the firing line when shooting.
9. Point your left foot and shoulder directly at the target with the body turned to the right. Turn the head directly toward the target.

10. Center the ammo in the middle of the leather pouch. Hold the handle firmly in the left hand and pinch the ends of the leather pouch together with the thumb and index finger of the right hand, encompassing the ammo.
11. Hold the left arm out straight and firm. Draw the right hand back level with right cheek—NEVER TO THE EYE—while holding the leather pouch securely between the thumb and index finger of the right hand.
12. Aim and release the leather ammo pouch to shoot.
13. Always practice courtesy and good sportsmanship!

Catapults and Other Shooting Devices

Catapults can be a fun activity at Cub Scout camps. Catapults were ancient war machines used to throw huge rocks over castle walls. Today, a type of catapult is used to launch planes from aircraft carriers. A slingshot is also a kind of catapult.

Catapult



Balloon launchers and peashooters can also be used at camp.

Paintball guns are not approved.

Although specific rules have not been written about each type of shooting activity, these general guidelines apply:

1. Have fun and be responsible!
2. Do not aim any shooting device at a person. Never shoot any projectile, even if it is soft or seems to be harmless, at or near people, animals, or personal property. This includes water balloons.
3. A balloon launcher is not a toy and is made for the sole purpose of launching water balloons. Never launch water balloons at eye level.
4. Do not use any projectiles such as rocks, pebbles, or ball bearings, that are hard or that could cause harm.
5. Never use a launcher if there are signs of wear. Check before each use.

6. When using a slingshot or balloon launcher, never put your finger or hand between the tubing connection and the handle.
7. Always wear eye protection.
8. Targets may be made similar to those for archery and BB gun shooting. Creative targets may also be made that relate to the camp theme. Targets should not look like humans or animals.
9. A range officer must supervise the range at all times.
10. The range must meet the criteria of a safe range: safe area, safe distance, and safe backstop.
11. The range must be established. Make certain that no one will wander into the landing zone of the projectiles.
12. The use of catapults or other shooting devices must be approved by a National Camp School-trained shooting sports director.

Ammunition

For water balloons, use biodegradable small balloons filled no larger than a ping pong ball.

When using a catapult, use an object that is soft and is no larger than the opening of a small juice can.

RESOURCES, CERTIFICATES, AND PATTERNS

Resources

Archery Manufacturers and Merchants Organization
304 Brown St. E
P.O. Box 258
Comfrey, MN 56019
866-266-2776
<http://www.amo-archery.org/>

Association of Professional Archers
2156 N. Oak Road
Plymouth, IN 46563
219-935-6666

National Archery Association (NAA)
One Olympic Plaza
Colorado Springs, CO 80909
719-866-4576
www.USArchery.org

National Field Archery Association (NFAA)
31407 Outer I-10
Redlands, CA 92373
909-794-2133

Daisy Manufacturing Company
P.O. Box 220
Rogers, AR 72757-0220
800-643-3458
<http://www.daisy.com/index.html>

Marksman Products
5482 Argosy Drive
Huntington Beach, CA 92649
800-822-8005
<http://www.marksman.com/>

Crosman Corporation
Routes 5 and 20
East Bloomfield, NY 14443
800-724-7486 or 716-657-6161
<http://www.crosman.com/>

National Rifle Association (NRA)
11250 Waples Mill Road
Fairfax, VA 22030
703-267-1000
<http://www.nra.org/>

Webelos Scout Book
Boy Scouts of America
No. 33108

Certification

Cub Scout Academic and Sports Program Archery Belt Loop and Pin Certification



This certifies that _____ has earned
the Archery:

Belt Loop

Sports Pin

Earned at _____ (authorized camp)

On _____ (Date)

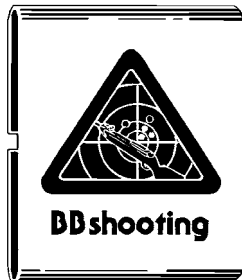
Certified by _____ (Range officer)

And _____ (adult leader or parent)



Present this completed certification to your council Scout shop
to purchase the Cub Scout archery belt loop or sports pin.

Cub Scout Academic and Sports Program BB Shooting Belt Loop and Pin Certification



This certifies that _____ has earned
the BB Shooting:

Belt Loop

Sports Pin

Earned at _____ (authorized camp)

On _____ (Date)

Certified by _____ (Range officer)

And _____ (adult leader or parent)



Present this completed certification to your council Scout shop
to purchase the Cub Scout BB shooting belt loop or sports pin.

Sample Archery Scorecard

These cards may be reproduced for campers in the archery program to keep their score as they strive to improve their shooting skill.

Arrow Score			Hits	End Score	Running Score
Total					

Signature

Arrow Score			Hits	End Score	Running Score
Total					

Signature

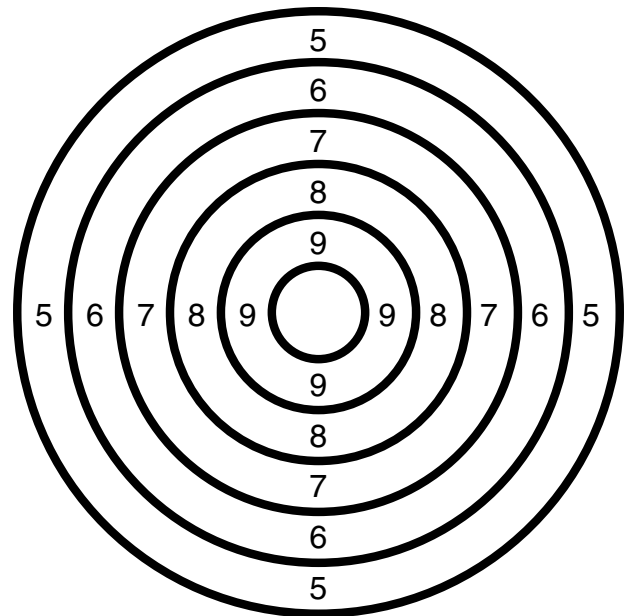
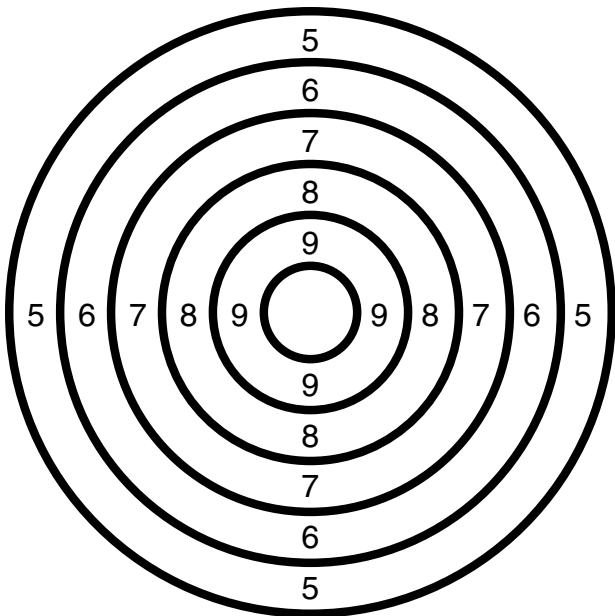
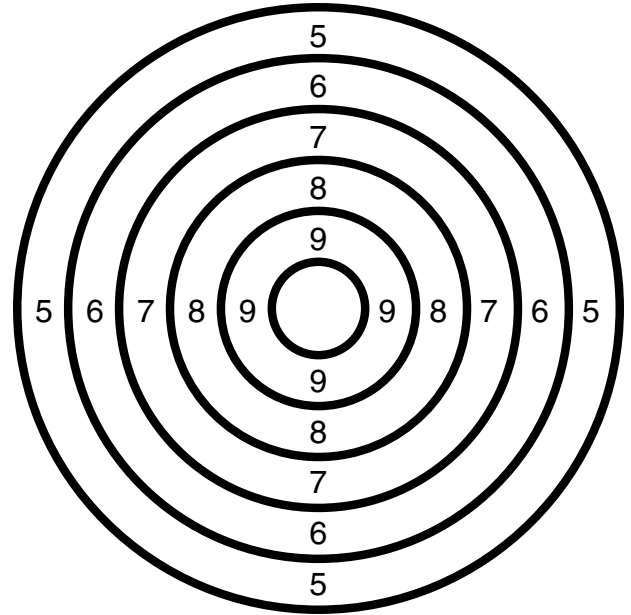
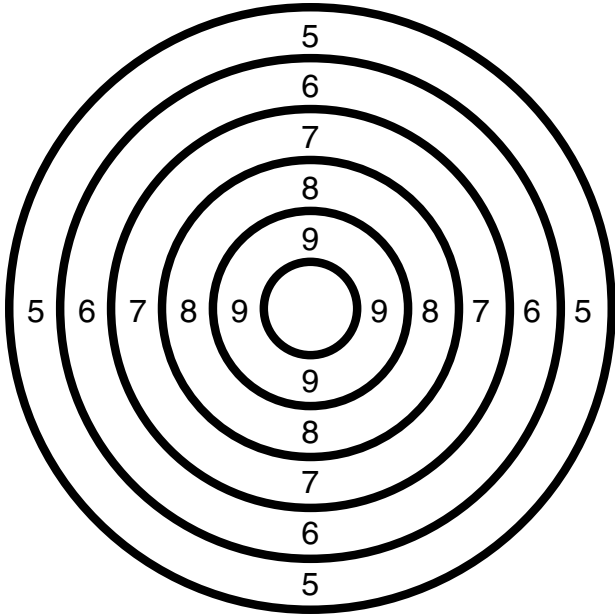
Arrow Score			Hits	End Score	Running Score
Total					

Signature

Arrow Score			Hits	End Score	Running Score
Total					

Signature

Sample Targets

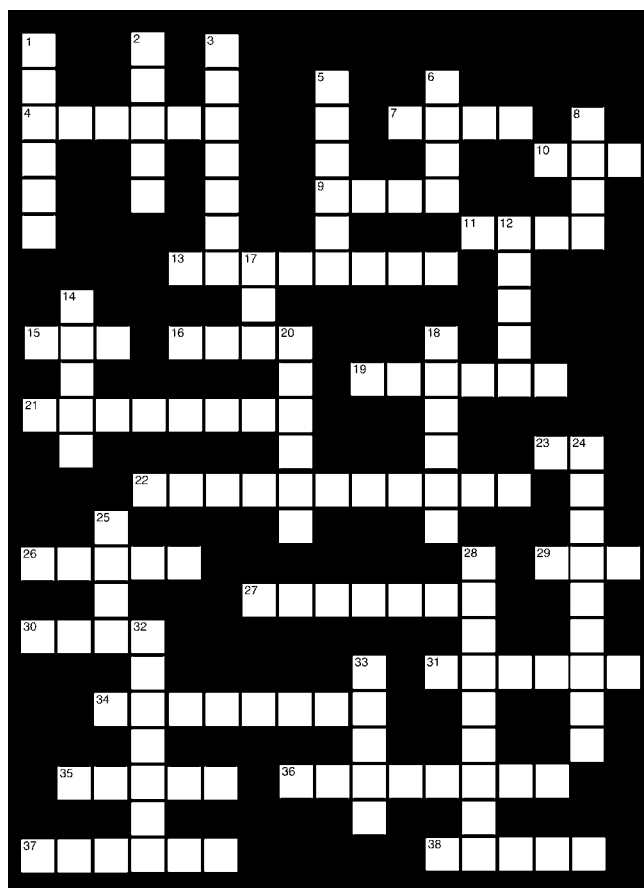


Crossword Puzzle: Air Gun Shooting

So you think you know a lot about air gunning? Here's a crossword puzzle to test your knowledge of air guns, ammunition, and common shooting terms.

If you find yourself stumped, you can check the answers on the next page.

1. You shoot at this.
2. Your point total.
3. The diameter of a bore determines this.
4. An air gun has none. Kick.
5. Soft lead air gun projectile.
6. Olympic shooters strive for this.
7. The inside of the barrel.
8. You catch pellets, BBs, and mice in one of these.

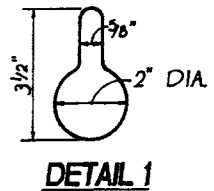
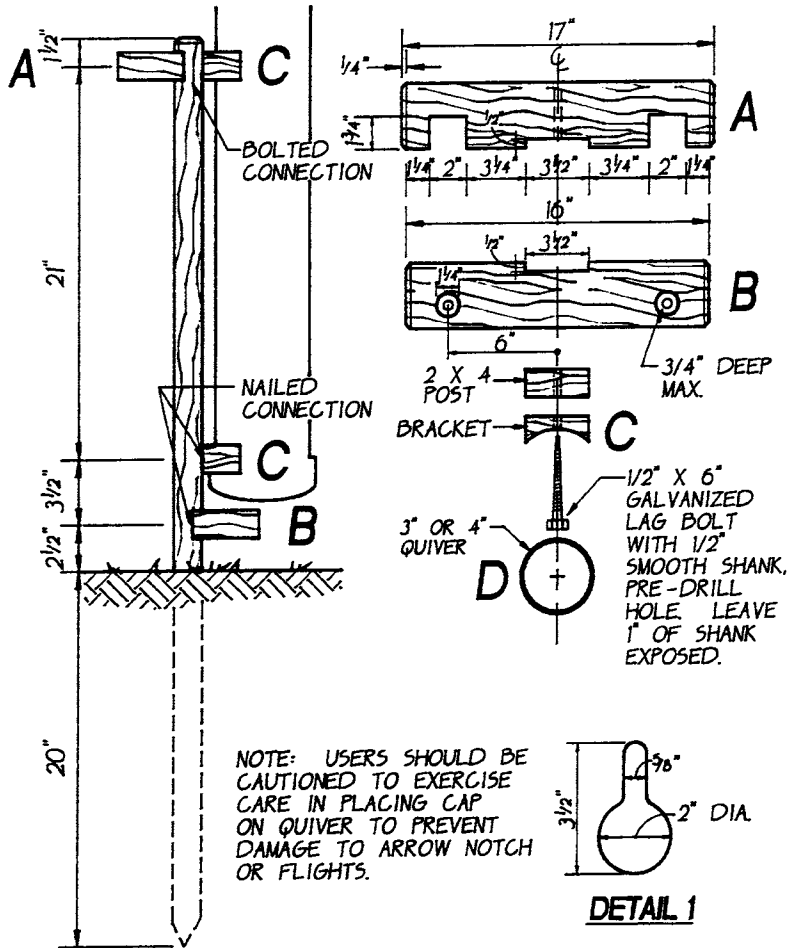
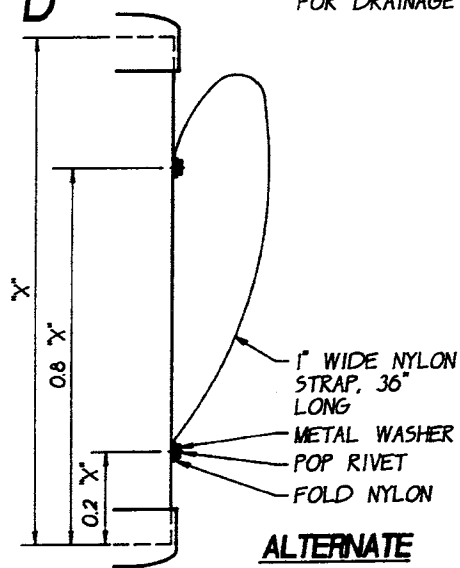
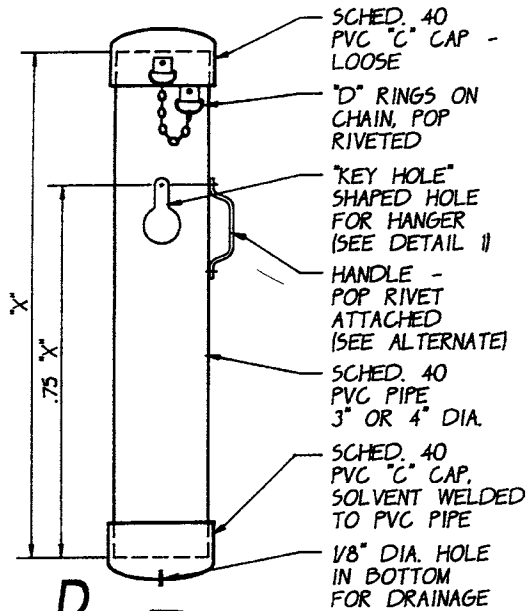


9. You do this when you put pellets or BBs in an air gun's receiver.
10. National Rifle Association.
11. The part by which you hold a pistol.
12. The place where you shoot.
13. Lots of this will make you a better shooter.
14. You hold this type of air gun against your shoulder.
15. The opposite of a miss.
16. A pneumatic air gun requires you to do this to increase air pressure.
17. You do this when you line up the sights on a target.
18. Every shooter's primary responsibility.
19. Handle every gun as if it were this.
20. A hand-held air gun.
21. The highest level of international air gun competition. It takes place every four years.
22. The metal targets that are profiles of rams, turkeys, pigs, and chickens. Use only pellets to shoot them.
23. A perfectly round, copper-covered steel ball fired from some air guns.
24. A new sport that combines the challenges of air gunning and off-road bicycling.
25. This opens a rifle's action.
26. The position air gunners take lying down.
27. The world leader in air gun technology. A bikathlon sponsor.
28. This type of air gun is powered by a pump system similar to a bicycle pump.
29. The largest silhouette target.
30. This part of the rifle goes against your shoulder.
31. Always point this in a safe direction. The end of a barrel.
32. Squeeze this to make an air gun fire.
33. The grip, comb, and butt are on this part of a rifle.
34. Never shoot BBs at metallic silhouette targets because they might do this.
35. The aiming device on an air gun.
36. The most important component of an air gun range.
37. The projectile travels from the receiver to the muzzle through this.
38. A telescopic sight.

Crossword Puzzle Answers

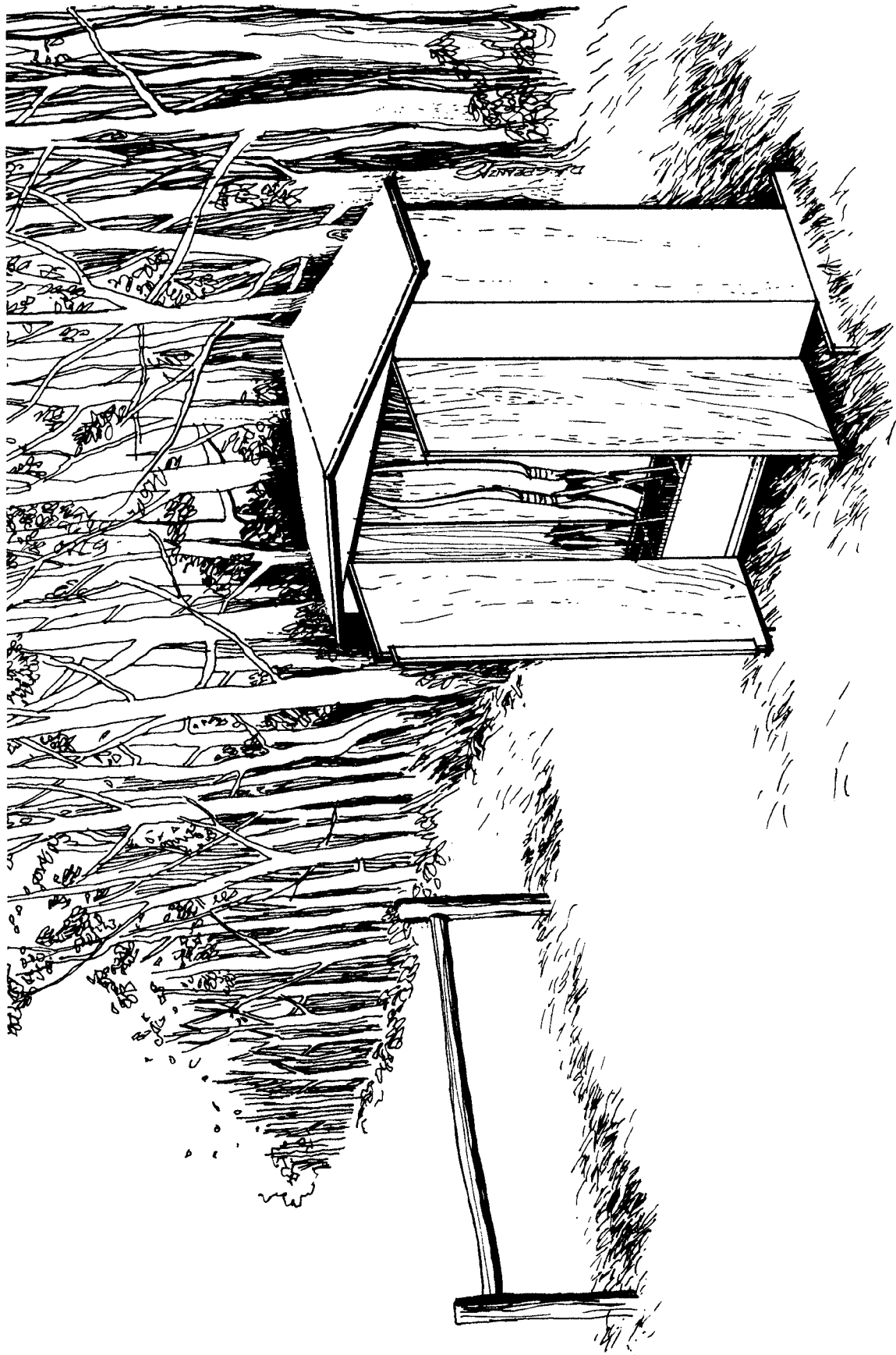
- | | | | | |
|------------|--------------|-----------------|---------------|--------------|
| 1. Target | 9. Load | 17. Aim | 25. Bolt | 33. Stock |
| 2. Score | 10. NRA | 18. Safety | 26. Prone | 34. Ricochet |
| 3. Caliber | 11. Grip | 19. Loaded | 27. Crosman | 35. Sight |
| 4. Recoil | 12. Range | 20. Pistol | 28. Pneumatic | 36. Backstop |
| 5. Pellet | 13. Practice | 21. Olympics | 29. Ram | 37. Barrel |
| 6. Gold | 14. Rifle | 22. Silhouettes | 30. Butt | 38. Scope |
| 7. Bore | 15. Hit | 23. BB | 31. Muzzle | |
| 8. Trap | 16. Pump | 24. Bikathlon | 32. Trigger | |

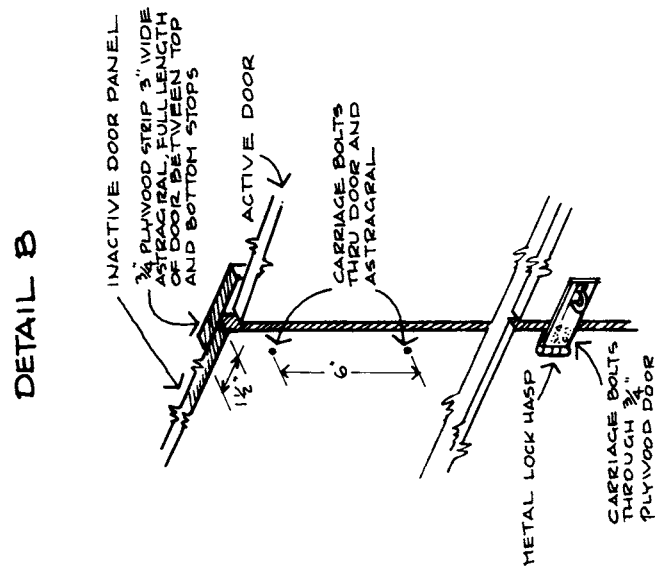
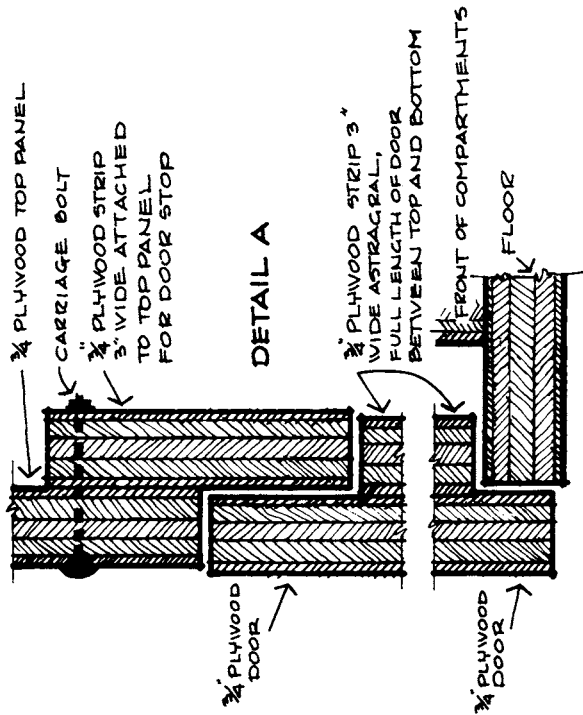
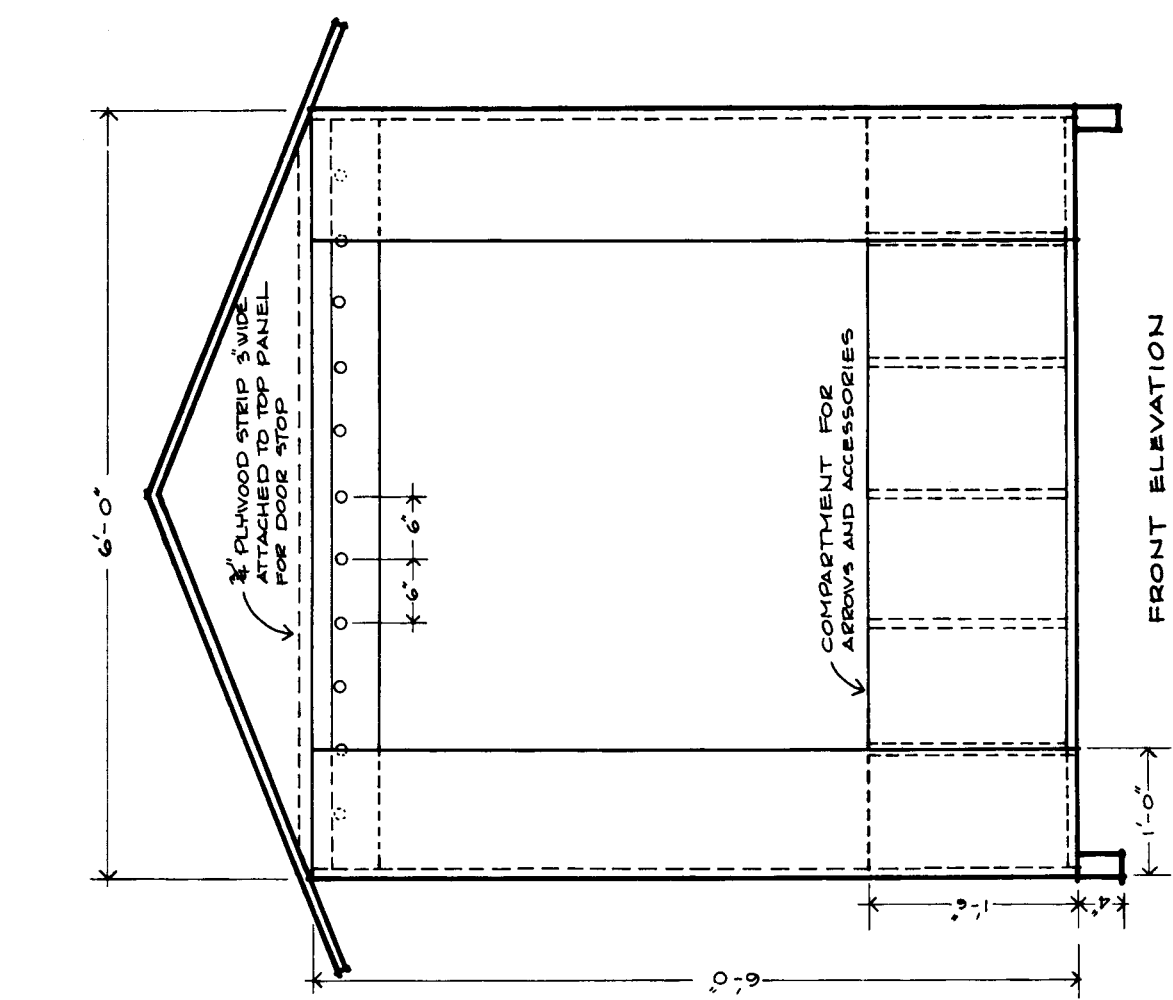
Quiver and Bow Rack

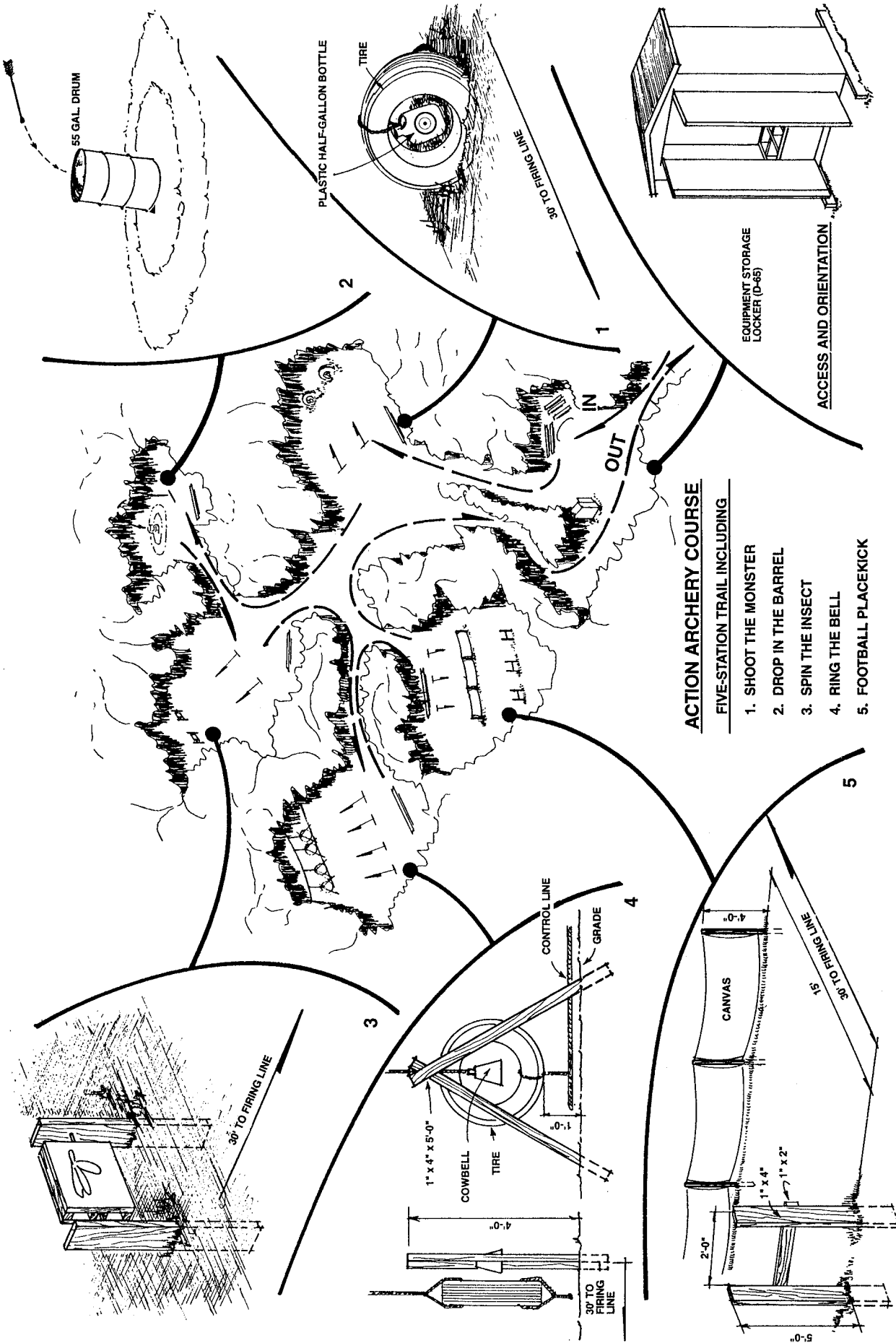


NOTE:
 X' = 27" FOR 26" LONG ARROW
 X' = 29" FOR 28" LONG ARROW

Archery Storage Locker







ACTION ARCHERY COURSE

FIVE-STATION TRAIL INCLUDING

1. SHOOT THE MONSTER
2. DROP IN THE BARREL
3. SPIN THE INSECT
4. RING THE BELL
5. FOOTBALL PLACEKICK

GLOSSARY

action. A group of moving parts used to cock, compress air (in some models), load, fire, and unload an air gun.

air gun. A gun that propels a projectile through its barrel by use of compressed air or carbon dioxide gas (CO₂). Gunpowder is not used in this type of gun.

anchor point. The particular spot on the archer's face to which the index finger comes on the draw to give consistency to shooting.

arm guard. A piece of leather or plastic that is worn on the inside of the forearm to protect the arm from the bowstring.

arrow plate. A substance on the side of the bow to give point contact with the arrow.

arrow rest. An extraneous device on the bow to provide point contact; also a resting point.

back. The side of the bow that is away from the shooter.

BB. The term BB is used to describe spherical steel pellets that are .177 inch (4.5 mm) in diameter. However, steel BBs actually have a maximum diameter of .175 inch. BB projectiles for air guns should not be confused with the .181-inch-diameter BB pellets used in shotgun shells.

blunt. A blunt-tipped arrow, often used for small game.

bolt. A hard, metal projectile with a sharp, pointed nose and plastic fins inserted in the rear portion of the projectile.

bore. The inside of the barrel of a gun.

bow arm. The arm that holds the bow (not the string).

bow sight. A device attached to the bow that allows the shooter to sight directly on the target (which cannot be done with the arrow tip except at point-blank range).

bowstring. The string of a bow, usually made of Dacron.

broadhead. An arrow with a sharpened metal tip for hunting live game.

butt. A backstop for holding arrows shot at a target. The shoulder end of a rifle stock.

caliber. The diameter of a projectile, the distance between the lands in a rifled barrel, or the bore diameter in a smoothbore barrel.

cant. The act of holding the bow tilted or slightly turned while shooting.

cast. The distance a bow can shoot an arrow.

CO₂ cylinder or tank. A metal cylinder tank that contains carbon dioxide gas (CO₂). Available in small disposable cylinders for insertion in some models of CO₂ pneumatic air guns; also available in large tanks that are used to charge refillable cylinders and internal gas reservoirs in other models.

cock feather. The arrow feather at right angles to the nock; often of a different color than the other feathers.

cocking lever. The part of a spring-piston air gun used to cock a spring-loaded piston that compresses air at the instant of firing.

compressed CO₂ /air pneumatic gun. A type of air gun using carbon dioxide gas (CO₂) or air that has been compressed and stored in a metal cylinder, or air that is compressed by an external air pump. This type of air gun allows the firing of multiple shots without recharging.

creeping. Letting the string hand edge forward before release.

crest. Paint or decoration on the arrow shaft near the feathers.

cylindrical pellets. A cylindrically shaped air gun pellet that usually has a raised band encircling its base to act as an air seal.

dart. A hard metal projectile with a sharp pointed nose and organic or artificial hair or feathers inserted in the rear portion of the projectile.

dieseling. The ignition and detonation of low-flash point lubricants due to the high temperature generated during the rapid compression of air in a spring-piston air gun.

draw. The acting of pulling the bowstring back into the anchor position.

drawing arm. The arm that draws back the bowstring.

drift. Natural deflection of an arrow from its normal path due to outside factors, such as wind.

end. A specified number of arrows shot at one time (or from one position) before retrieving.

end loop. The part of the string that fits over the bow nock.

face. The part of the bow facing the shooter; also a target face.

fast. An expression used to warn people of arrows being shot.

field archery. A competitive round shot at various distances and laid out like a golf course.

field arrow. An arrow with a field point; used outdoors for field archery, stump shooting, roving, and small game.

finger tab. A tab worn on the drawing hand to protect the fingers and give a smooth release of the bowstring.

fletching. The feathers of the arrow that give guidance to the arrow's flight.

flight. A competitive round of shooting for distance; also, the path of an arrow.

forearm. The part of the arm between the elbow and the wrist.

free style. Shooting with the aid of a bow sight.

front sight. The sight on the muzzle of a gun.

glove. A covering worn to protect the fingers from the string.

grooves. The shallow, spiral cuts in a bore that, together with the lands, make up the rifling in the bore of a barrel.

handle riser. The center part of the bow.

head. The tip or point of the arrow.

hen feathers. The two feathers not at right angles to the nock; usually the same color (but different from the cock feather).

hold. The act of gripping the bow; hesitating at full draw.

index. The raised piece of plastic on the nock of an arrow that is in line with the cock feather.

instinctive shooting. Aiming and shooting arrows instinctively rather than using the pre-gap or point-of-aim methods or a bow sight.

jerking. Letting the drawing hand jerk too far back as the arrow is released.

kick. The recoil of the bowstring and bow after the arrow is released.

laminated. A composite bow, usually of wood and fiberglass.

lands. The ridges of metal between the grooves in a rifled barrel.

limbs. The two ends of a bow, from the handle riser out.

longbow. A bow with no recurve.

multi-pump pneumatic air gun. A type of pneumatic air gun that uses several strokes of a lever to compress and store enough air in a reservoir or chamber for one shot.

muzzle. The front end of the barrel from which a projectile exits.

NAA. National Archery Association.

NRA. National Rifle Association.

nock. The groove in the end of the arrow in which the bowstring fits; also, the groove at each end of the bow which holds the bowstring in place.

nock locator. The material on the bowstring used to indicate the exact nocking point for the arrow.

nocking point. The marked place on the bowstring where the arrow nock is placed before drawing and releasing.

over-bowed. Using a bow that is too heavy for the individual.

overdraw. Drawing the arrow back too far so that the tip passes the face of the bow. This is a dangerous practice.

plinking. Informal shooting at a variety of targets.

pneumatic air gun. A type of air gun that uses stored compressed air. Divided into two subcategories: single-stroke or multi-pump pneumatics and air pneumatics.

point. The tip on the end of the arrow.

point-blank range. The only distance from the target at which the point-of-aim is right on the target center.

point-of-aim. A method of aiming using a point, usually in front of the target, with which the point of the arrow is aligned; allows for trajectory of the arrow.

pre-gap (pre-draw gap). A method of aiming.

projectile. A body projected forward such as a bullet from a gun.

quiver. A container to hold arrows; can be ground, back, side, or pocket type.

range officer. A trained, certified, on-site adult who directs the operation of a range program in a shooting sport.

rear sight. The sight nearest the breech of a gun.

recurve. A bow that is curved on the ends.

reflexed bow. A bow with limb ends curving toward the back rather than toward the face of the bow.

release. The act of letting the bowstring slip off the fingertips.

rifling. Spiral grooves and lands in the barrel bore that provide a stabilizing spin to a projectile so that it will be more accurate in flight.

roving. An outdoor game played by two or more in which natural targets such as stumps, trees, or bushes are selected for accuracy competition.

self arrow. An arrow made entirely of one piece of wood.

self bow. A bow made entirely of one piece of wood, as opposed to other types of bows such as laminate.

serving. The thread wrapped about the bowstring to prevent fraying of the string.

shaft. The middle of an arrow; an unfletched arrow.

shelf. The place on the bow where the arrow rests.

shooting sports director. The person who has overall responsibility for the operation of the shooting program for council camps and activities.

sight alignment. The relationship between the front and rear sights, where the shooter sees that the post bead, disc, or front sight device is aligned properly with the rear sight.

sights. Mechanical, optical, or electronic devices used to align the axis of the barrel on the target.

sinking. The gradual loss of a bow's power.

single-stroke pneumatic air gun. A type of pneumatic air gun that uses one stroke of a lever to compress and store enough air in a reservoir or chamber for one shot.

small of stock. The narrow part of a rifle stock.

smoothbore. An informal name for a gun that has a smoothbore barrel.

smoothbore barrel. A barrel that does not contain rifling.

solid bow. A common reference to a bow that is made entirely of fiberglass or plastics.

spring-piston air gun. A type of air gun that uses a manually operated lever or other device to cock a spring-loaded piston, which compresses air at the instant of firing. The air that propels the projectile is not stored in a reservoir prior to firing.

stance. A standing position assumed when shooting an arrow.

stock. The wooden or metal piece to which the barrel or mechanism of a rifle are attached.

string. Preparing a bow for shooting; also, the bowstring.

string fingers. The three fingers used to draw back the bowstring.

string height. The distance between the bow and the bowstring at the handle.

strung bow. A bow that is ready to shoot.

target archery. A competitive round shot at affixed distances in an open area.

target arrow. A lightweight arrow with a target point.

throwing. Moving the bow hand to the left upon release.

understrung. A bow with a bowstring that is too long.

vane. A plastic fletching on an arrow.

weight. The amount of effort (in pounds) required to draw the bow a given length (normally measured at 28 inches).

weight in hand. The actual weight of the bow.

windage. The amount of drift in the flight of an arrow caused by wind.

wobble. The erratic motion of a flying arrow.

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