

How To Set Up Outdoor Target Archery Range

Set up for wide-open, cleared space.

1. Select the Orientation of the Range

- Avoid shooting into the sun by facing North.
- The ground should be flat and free of obstacles.
- Look for a natural backstop such as a berm to stop arrows. *(If there is no berm, provide a minimum of 150 feet of open area behind the targets.)*

2. Place Range and Safety Lines

- Rope, eco-friendly spray paint or chalk are ways to lay down the range lines outdoors. Follow the guidelines illustrated on the following page.
- Target Line – The purpose of the Target Line is to provide archers a safe place to stand when waiting for their turn to pull arrows from the target.
- Shooting Line – The shooting line is placed close enough to the Target Line to ensure success for the archers to hit the target. This line can be moved back to greater distances as archers become more advanced. The Shooting Line is placed 15-30 feet from the Target Line.
- Waiting Line – Archers stand behind the Waiting Line before and after shooting their arrows. It is meant to act as a safety area between the class and the Shooting Line. The Waiting Line is placed 15 feet behind the Shooting Line.
- OPTIONAL: Controlled Access/Spectator Line – Anyone who wants to watch archers shoot can gather behind this line. This line needs to be placed far enough behind the Waiting Line to prevent distraction from the spectators (at minimum 15 feet)

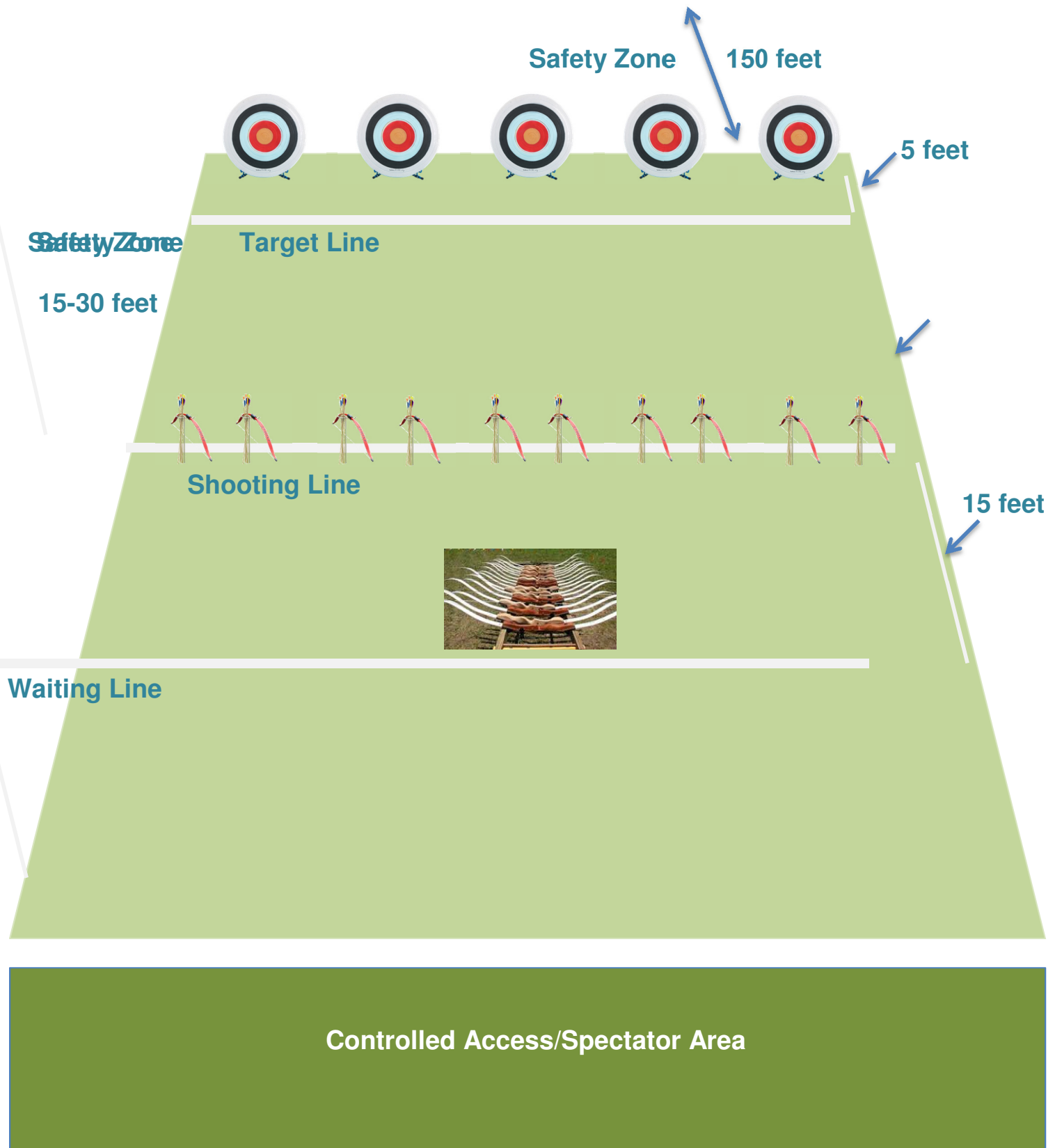
3. Set Up Targets

- Place targets in front of the natural berm. If a natural berm is not available, place targets in a wide-open space with a minimum safety zone of 150 feet behind the targets.
- Evenly space targets in front of the berm. It is best to place the targets five feet, or two arrow lengths, from target-center to target-center. Evenly spaced targets allow for multiple people to shoot at the same target safely.

4. Place the Equipment

- Bows – The bow rack is placed between the Waiting Line and the Shooting Line. The bows are placed in the bow rack.
- Ground Quivers – Ground quivers are evenly spaced apart on the Shooting Line. Two quivers per target are suggested.
- Arrows – Place arrows in a central location near the bow rack. Once the instructor is comfortable with an archer's skill level, arrows may be placed in each individual archer's ground quiver.

Outdoor Range Layout: Wide Open Space



Chapter 9: Introduction

Archery and BB gun shooting for Cub Scouts and Webelos Scouts are restricted to day camps, Cub Scout/Webelos Scout resident camps, council-managed family camping programs, or to council activities held on or off BSA property where there are currently trained BSA shooting sports range masters and all standards for BSA shooting sports are enforced. Archery and BB gun shooting for Cub Scouts and Webelos Scouts are not to be done at the pack level or den level.

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

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

This section is for the BSA shooting sports director with archery and/or NRA rifle certification or for NRA instructors or USA Archery/NFAA archery instructors 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” is the watch phrase.

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.

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, 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 must be certified per BSA qualifications for these activities and 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 master who is at least 18 years old and who meets the minimum state requirements. See specific qualifications and training requirements for archery range master and for BB gun shooting range masters in Chapter 1.

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 master, try contacting:

- Members of USA Archery/NFAA
- Members of sportsmen’s clubs (often including 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

BSA National Camping School Shooting Sports Director

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

The BSA National Camping School 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, muzzleloading, 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, USA Archery/NFAA instructors may train archery range masters, and National Rifle Association rifle instructors may train BB gun range masters.

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 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.

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 Olympic 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 have 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.

Chapter 10: 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.

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 A.D., 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 in Chicago 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 masters who actually direct the operation of the range program and archery instruction. To qualify as an archery range master, the range master must be at least 18 years old and be trained by a National Camping School-trained shooting sports director or a USA Archery/NFAA instructor.

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 Masters

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

Section I (40 minutes)

- A. A Brief History of Archery, page 75
- B. Safety Guidelines, page 77
 1. Sun Safety on the Shooting Range, page 77
- C. Equipment, page 82
 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, and have the participants demonstrate this.
 3. Review how to maintain, store, and care for equipment.
- D. Range Layout, page 81—This procedure is to be taught on the archery range. Review range layout, safety fencing, backstop, entryway, range flag, target spacing, waiting line, shooting line, and bow racks and quivers.
- E. Range Operation Rules, page 82

Section II (40 minutes)

- A. Archery Shooting Basics, page 77
 - 1. Eye Dominance, page 77
 - 2. Stance, page 78
 - 3. Nock the Arrow, page 78
 - 4. Establish the Bow Hold, page 78
 - 5. Draw, page 78
 - 6. Aim, page 78
 - 7. Anchor, page 79
 - 8. Release or Loose, page 79
 - 9. Follow-Through, page 79
 - 10. Retrieve Arrows, page 79
- B. Targets and Scoring, page 84
 - 1. Target Butts, page 84
 - 2. Target Faces, page 84
 - 3. Backstops, page 84
- C. Know the Proper Whistle Codes, page 77
- D. Archery Practice Fun, page 80

Section III (20 minutes)

- A. Training Cub Scouts, page 76
 - 1. Teaching Tips, page 76
- B. Shooting a Competitive Round, page 80
- C. Archery Games and Activities, page 80
- D. Tiger Cubs and Archery, page 77
- E. Cub Scout Shooting Sports Award, page 81
- F. Archery Belt Loop and Sports Pin, page 81

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 77. 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 master as he or she demonstrates.

Instruction takes place at the shooting line. Explain the use of whistles, page 77.

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—Youth

Section I (20 minutes)

- A. Safety Guidelines, page 77
- B. Equipment, page 82
 - 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 77
 - 1. Eye Dominance, page 77
 - 2. Stance, page 78
 - 3. Nock the Arrow, page 78
 - 4. Establish the Bow Hold, page 78
 - 5. Draw, page 78
 - 6. Aim, page 78
 - 7. Anchor, page 79
 - 8. Release or Loose, page 79
 - 9. Follow-Through, page 79
 - 10. Retrieve Arrows, page 79
- B. Practice, practice, practice

Section III (60 minutes) (optional activities)

- A. Shooting a Competitive Round, page 80
- B. Archery Games and Activities, page 80
- C. Archery Belt Loop and Sports Pin, page 81

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. Be sure to include all of the safety guidelines and 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 master has indicated that you may begin shooting.
10. Archers straddle the shooting line, with one foot on either side.
11. Stop shooting immediately upon signal from the range master 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

Two blasts. Move up to the firing line.

One blast. Fire the proper number of arrows.

Three blasts. Cease firing. Move to the target. Retrieve and score arrows.

Five or more whistle blasts. Cease firing. Stay where you are. This is an EMERGENCY. Officials will tell the archers what action to take either verbally or by the whistle code.

Remember there is only ONE command to shoot—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 it every two hours when outdoors, even on cloudy days.
- Wear protective, tightly woven clothing, such as a long-sleeved shirt and pants.
- Wear a hat with a wide, 4-inch brim 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 master.

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 backward.

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 rise 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 vision is parallel with the ground and so 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.

Place the index finger of the right hand above the nock and the next two fingers below the nock. This is known as a split-finger nock. USA Archery suggests teaching beginners to shoot with three fingers under the nock, though the organization approves of the split-finger technique as well. "Hook" 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 the bow does not interfere with students on either side. Tell each student to raise his head, look at the bull's-eye, raise the bow arm to shoulder height, and lower it again to the side.

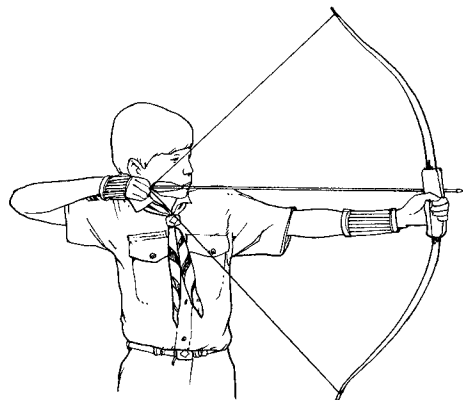
Draw

Bring the left hand up, turning the hand so 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 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 1-inch aiming spot on your target, 10 yards away. When the arrow is fully drawn and anchored, raise or lower the bow so 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 5- or 6-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 down 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. USA Archery also suggests teaching a beginner to use the corner of his mouth as an anchor.

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 master. The range master 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 an archery range and there is archery shooting, even when playing a game or activity, a qualified archery range master 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 1

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

Instructional Round 2

(American Archery Council Instruction Round)

Modified Chicago Round

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

Modified Flint Round

Total arrows: 30
Score: 5-3
Total points: 150
Station 1: four arrows at 17 yards—
18-inch black-and-white face
Station 2: four arrows at 20 yards—
12-inch black-and-white face
Station 3: four arrows at 20 yards—18-inch face
Station 4: four arrows at 14 yards—12-inch face
Station 5: four arrows at 15 yards—18-inch face
Station 6: four arrows at 10 yards—12-inch face
Station 7: one 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 cord 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 5-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 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 4-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 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 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 114.

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 master, 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 Distribution Center in packages of 100.



Archery Belt Loop and Sports Pin

Archery belt loops and sports pins may be earned only 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 an opportunity to earn belt loops and sports pins that cannot be earned at home.

See the sample certificates on page 106. 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 master.

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:

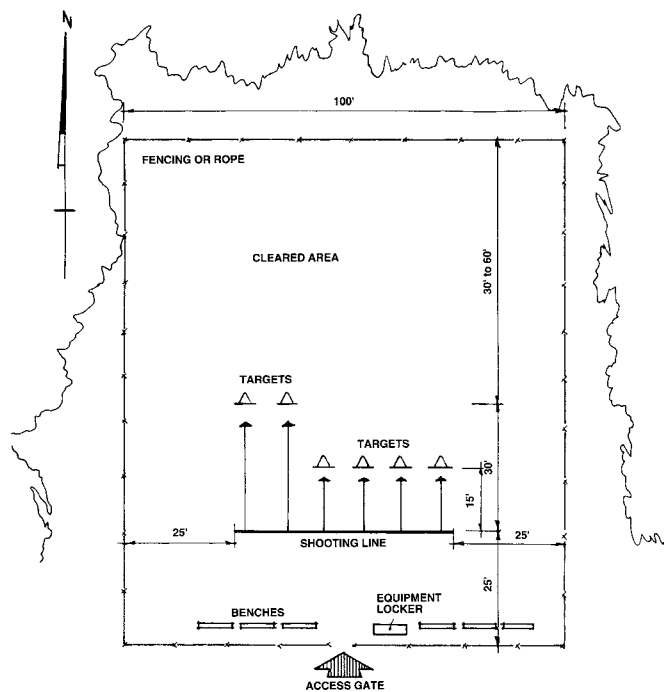
1. Explain the parts of a bow and demonstrate how to string the bowstring in a proficient manner.
2. Demonstrate how to properly use archery equipment, including arm guards, finger tabs, and quivers, and explain about proper clothing.
3. Develop proficient shooting techniques by practicing for three 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 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 soils needs no ground cover.

Important! Arrange facilities so 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 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 bows, bowstrings, and arrows are in safe condition.
5. All spectators and boys waiting to shoot must remain behind the waiting line at least 3 yards behind the shooting line.
6. Archers must wear shoes on the range at all times.
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 Rules Poster

Archery Range Rules

1. This range may be opened only by a certified archery range master.
2. All commands issued by the range master 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 master.
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 master for advice and help.

Range diagrams and range rules posters are available from USA Archery if needed. (See Chapter 13, "Resources, Certificates, and Patches," for contact information.)

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 111–114.)

Archery Equipment for 100 Campers

Many of the following items are available through the National Distribution Center. For additional sources, see Resources, page 105.

- 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
- Two sets of field archery targets
- 60 plastic jugs (various sizes)
- 12 ground quivers (camp-made)

Bows

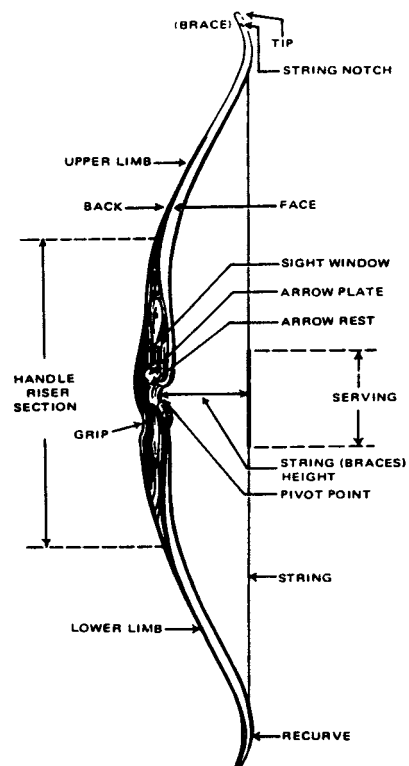
Beginners should use a very light bow with no more than a 25-pound pull. Pull is the force in pounds required to draw the bow a specified length. Bows of this weight are usually about 56 to 66 inches long. The bow should not be so heavy that the archer tires himself handling it.

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.

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.

PARTS OF A BOW



Care of Bows

Some basics to follow in the care of your bows whether 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 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

USA Archery 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 bow-stringer 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 bow-stringer 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 bow stringer and smoothly pull upward on the bow grip to tension the bow. Using the thumb and index finger, slide the top loop of the bow-stringer into the upper bow notch.

Check the bow to make sure 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, though USA Archery suggests using 30-inch arrows in group settings to reduce the risk of injury. Longer arrows also 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 1 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 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 them 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 guards 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 page 110.)

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.

Targets and Scoring

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. Plastic foam is messy and does not last long.) Keep the targets close to the ground so missed arrows will not go far and so younger archers can reach the highest arrows easily.

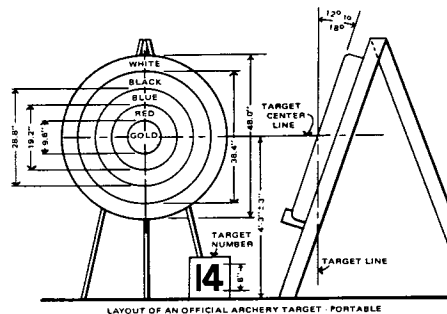
Three to five bales of straw may be stacked to serve as target butts. Make sure the bales are tied back to a post so they will not fall forward on someone pulling arrows. Care should be taken in stacking the bales to be sure they are very close together. Keep the bales off the ground by stacking them 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 8 feet from the top to the floor. A backstop should be hung 2 to 3 feet from the wall and 2 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 6 to 8 feet in front of the targets.

Chapter 11: 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. **The barrel velocity has been changed to 350 feet per second maximum.** Tiger Cubs and Cub Scouts are not permitted to use any other type of handgun or firearm.

The use of pellet air rifles is restricted to Webelos Scouts in a resident camp setting and qualifies when in compliance with the following:

- The air rifle pellet gun range meets or exceeds BSA and NRA recommendations and appropriate BSA Outdoor Programs/Properties design standards. The range is on council-owned property.
- All rifles in good repair are provided. All rifles used in BSA shooting sports have a trigger pull in excess of 2.5 pounds and are tested with a 2.5-pound weight or scale at least once a week while in use. If any trigger mechanism fails, the air rifle is immediately removed from service. Documentation of the tests is maintained.
- All air rifles (CO₂, pump, break barrel, etc.) are limited to single-shot designated for target shooting, velocity of 500 to 540 feet per second, and energy levels not to exceed 7.5 joules.
- Safe, separate and locked storage (can be the same building) is provided for pellet guns, pellets, and CO₂ cylinders and bulk tanks.
- Air rifle propellant is limited to CO₂ cylinders or air compressor/scuba tanks. Refilling is conducted by qualified adults with appropriate controls. If scuba tanks are used, each tank must be visually inspected annually and hydrostatically tested every five years by a qualified technician.

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 end. 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 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 masters who actually direct the operation of the range program and BB gun shooting instruction. The ratio of BB gun range masters to shooters is 1-to-8 on the firing line. To qualify as a BB gun range master, the range master must be at least 18 years old and be trained by a National Camping School-trained shooting sports director or a National Rifle Association rifle instructor.

The BB gun range master also must 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 Masters

This training should be conducted on a BB gun range. Include a practical exercise on how to set up a BB gun range, referencing page 93 in this manual for the range layout, and have the participants walk through the process of running the range.

Use this outline to train BB gun range masters 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 85
- B. Safety Guidelines, page 87
 - 1. Safety Reminders, page 87
 - 2. What Causes Gun Accidents?, page 87
- C. Equipment, page 94
 - 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 93
- B. Range Operation Rules, page 94

Section III (40 minutes)

- A. Training Cub Scouts, page 86
 - 1. Teaching Tips, page 86
- B. BB Gun Shooting Basics, page 88
 - 1. Eye Dominance, page 88
 - 2. Shooting Shoulder, page 88
 - 3. Breathing, page 88
 - 4. Sight Alignment, page 88
 - 5. Trigger Squeeze, page 88
 - 6. Follow-Through, page 88
- C. Shooting Positions, page 89
 - 1. Free-Arm Standing Position, page 89
 - 2. Prone Position, page 89
 - 3. Kneeling Position, page 90
 - 4. Sitting Position, page 90
- D. Sighting and Scoring Targets, page 90
- E. Range Commands, page 94
- F. BB Gun Shooting Practice Fun, page 91

Section IV (30 minutes)

- A. Basic Shooting Activity, page 90
- B. BB Gun Shooting Games and Activities, page 91
- C. Tiger Cubs and BB Gun Shooting, page 87
- D. Cub Scout Shooting Sports Award, page 92
- E. BB Shooting Belt Loop and Sports Pin, page 92

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.
- Scouts do not have to load one BB at a time and shoot before loading another BB. They can load at one time all the BBs they are given.
- In the following outline, "Cub Scout BB Gun Shooting Training," the time needed to conduct each section is not indicated because it will vary depending on the number of Cub Scouts participating.

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

- A. Safety Guidelines, page 87
- B. Equipment, page 94
 - 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

- A. BB Gun Shooting Basics, page 88
 - 1. Eye Dominance, page 88
 - 2. Shooting Shoulder, page 88
 - 3. Breathing, page 88
 - 4. Sight Alignment, page 88
 - 5. Trigger Squeeze, page 88
 - 6. Follow-Through, page 88
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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 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 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.
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 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 untrained individuals (especially children) are denied access to guns and 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

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 the 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 hat with a wide, 4-inch brim 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.

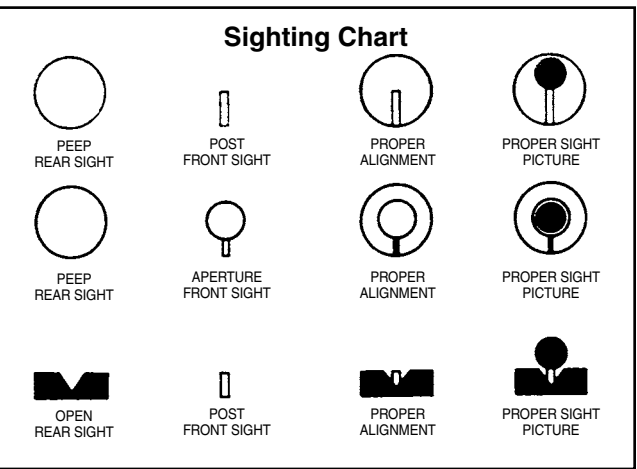
To find which eye is dominant, have participants extend both arms in front of them and form a small hole with their thumbs and index fingers. Instruct them to look at a distant object through the opening and then pull their hands back to their face. The eye that is in line with the object is dominant.

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 eight 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 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 how pressure is applied to the trigger. Some other terms commonly used are trigger pull, trigger control, trigger press, and trigger movement. While all 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 on the trigger so 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 the drop of liquid will fall, it should be impossible to predict the precise instant 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:

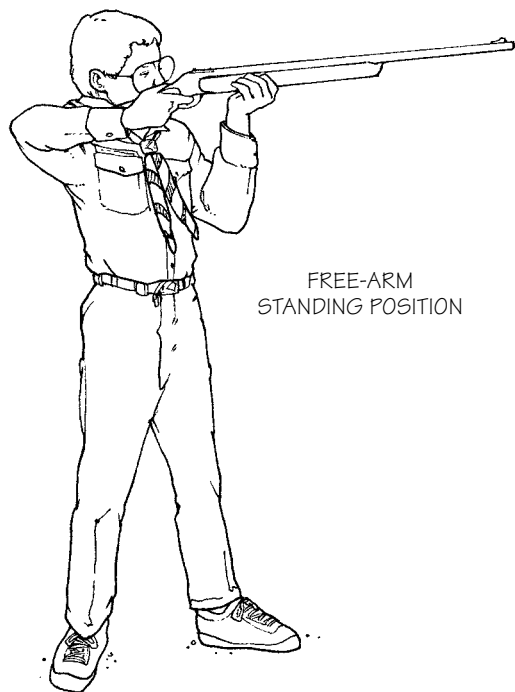
1. Study the position.
2. Practice the position without a gun. (Learn to put the feet, legs, body, head, and arms in the correct position without holding a gun.)
3. Practice the position with a gun.
4. Align the position properly with the target. Adjust the position so the gun points naturally at the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

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 the sights are at eye level.

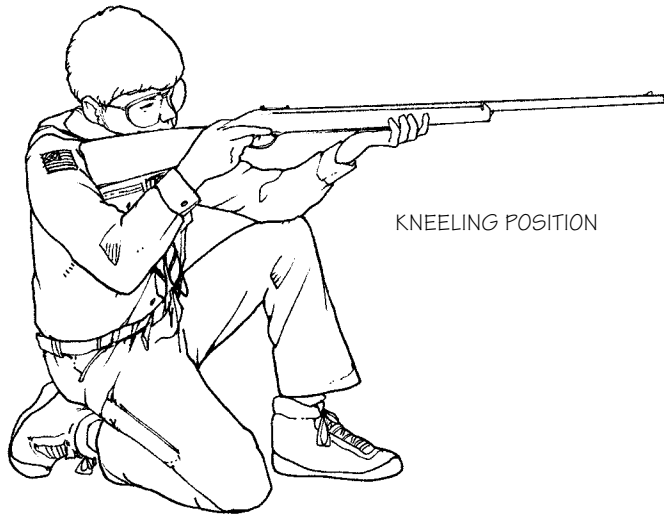
How to move into position:

- 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.



Kneeling Position

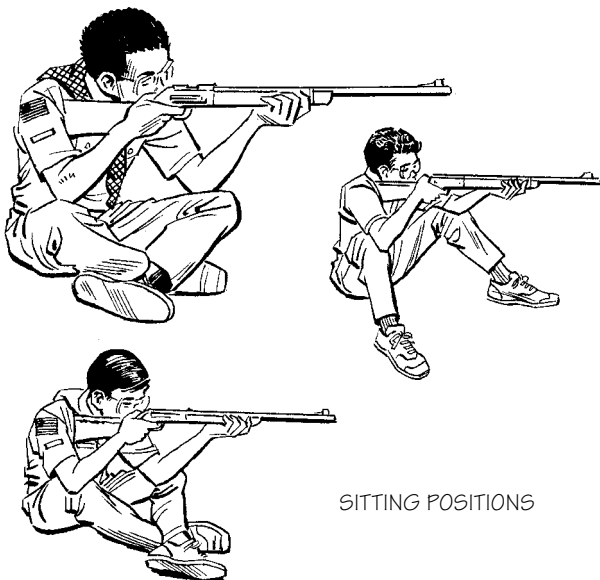
- Kneel in a comfortable position.
- Keep the right knee on the floor with the foot directly under the center of the buttocks.
- With the instep and toes of the right foot flat on the ground, sit on the bottom of the heel, not on the back of the foot. Use a kneeling roll on the instep to take pressure 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.



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 to lower the rifle or backward to raise the rifle.
- To help with proper sight alignment, position the stock against the shoulder.



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.
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—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 fore stock 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 downrange.
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 load BBs 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 shooting 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 8.5-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 one 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 biathlon 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 Award 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 masters (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 of a mile in length, in the form of a loop so 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

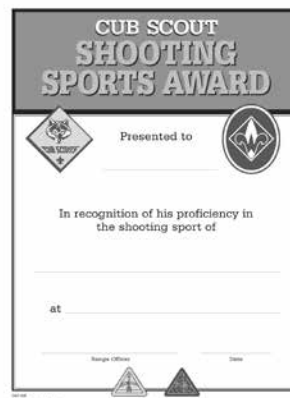
A Cub Scout Shooting Sports Award, No. 34216, may be awarded to a boy whenever he achieves a level of marksmanship or excellence. The BB gun range master, with other leaders of the camp or event, may determine special circumstances where a unique award might be useful. The award might be given for proficiency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

The award is available from the National Distribution Center in packages of 100.

Belt Loop and Sports Pin Activities

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



See the requirements for the BB Shooting belt loop and sports pin. Use the certificates to show that boys have met the requirements for the loops and pins. Their pack may then purchase the BB Shooting belt loops and sports pins at their local Scout shop.

BB 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 master.

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.

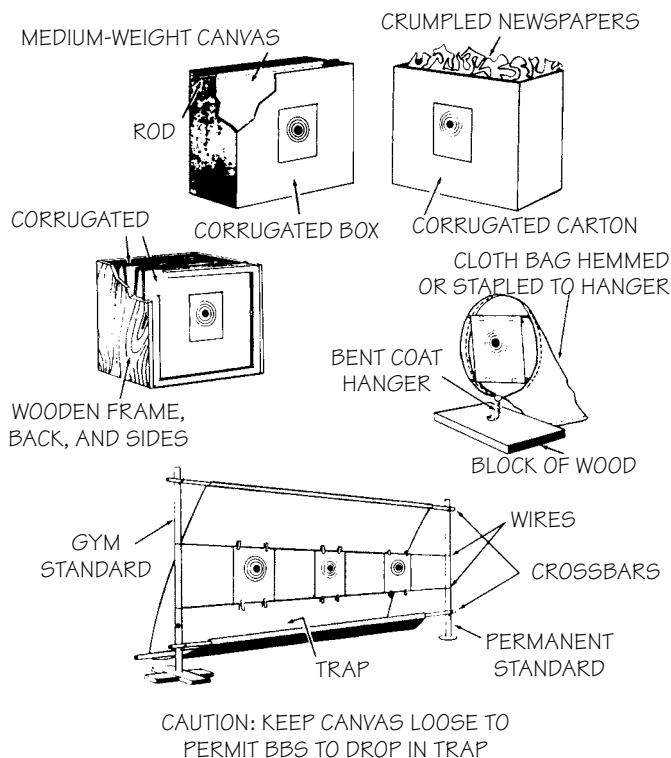
Sports Pin Requirements

Earn the BB 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 layout on this page. Safety is a primary concern when operating a BB gun range and all safety rules must be followed.



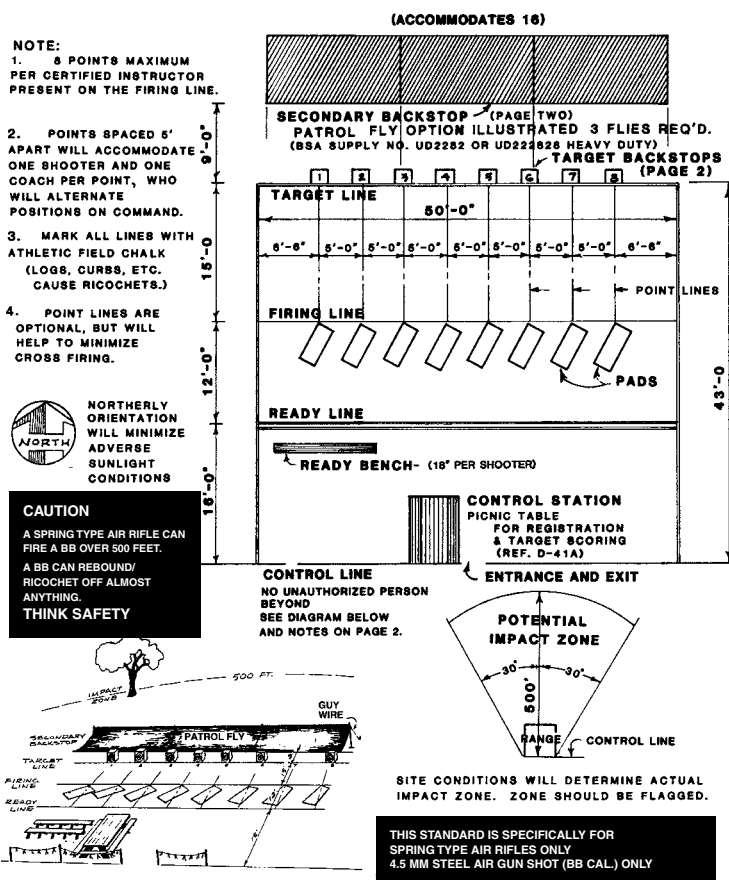
Shooting on a Safe Range

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 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. If using a tarp as a backstop, it is important to verify that the tarp is made of a heavy canvas material and not a thin plastic canvas material. It is best to hang the material at a 45-degree angle. Bales of straw also work well. Crosman offers a ballistic fabric that is by far the best, and it can be reused.

Important! Arrange facilities so 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!



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 downrange, 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 rules poster:

BB Gun Shooting Range Rules

1. This range may be opened only by a certified BB gun shooting range master.
2. All commands issued by the range master 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 master.
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 master for advice and help.

Range Commands

When ready to start firing, the range master 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 master checks the location of each shooter to ensure correct firing point and target number.

The range master 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 master will immediately call:

“THE LINE IS NOT READY.”

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

“IS THE LINE READY?”

If all is ready, the range master 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.)

The range master calls:

“LOAD.” Shooters load the BB gun chambers.

The range master calls:

“READY ON THE FIRING LINE.”

The range master commands:

“COMMENCE FIRING.”

After firing, the range master 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 master 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 gun shooting equipment may be secured from gun retailers. See “Resources” on page 105.

BB Gun Shooting Equipment for 200 Campers

- One range—50-foot range with eight firing points 15 feet from firing line to target
- 12 BB guns
- 1,200 targets
- 18,000 BBs

- Eight target backstops
- One set of 17-by-22-inch instruction wall charts
- 10 safety glasses
- Each BB gun should be equipped with an adjustable sling of 5/8-inch-wide nylon webbing and with target sights.

Range Accessories

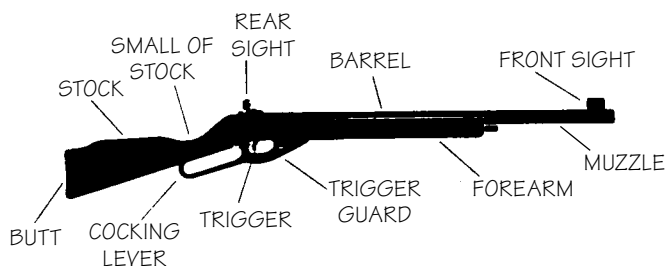
- Tarps to provide shade over the pads protecting the shooters and the guns
- BB dishes at each firing point
- Shooting mats at each firing point
- A desk with storage space for equipment for recording scores. It should be behind the ready line and near the bulletin board.
- Ample waste receptacles behind 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: single-stroke/multi-pump guns and compressed CO₂/air guns.

1. **Single-stroke and multi-pump pneumatic air guns** use a manually operated lever (or a pivoting barrel that acts as a lever) to force air through a valve mechanism 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 to build sufficient air pressure for one shot. The amount of air pressure in the reservoir is determined by the number of times 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 the air that has been compressed will remain in the reservoir until the shooter releases it by pulling the trigger. Pulling 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** 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 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.