

4-H Archery Project Book



*Sheboygan County
Wisconsin*



Introduction

4-H Archery in Sheboygan County, Wisconsin

Your archery booklet was made up as a practical guide for learning to use a bow and arrow. This booklet is intended to introduce you to the basics of archery. The booklet is intended as a guide only. Your participation in classes and the Skill Level Program, along with on the line shooting will enhance your archery learning experience and abilities.

The state certified 4-H archery adult leaders of Sheboygan County have been teaching youth successfully for many years following the basic guidelines described in our project booklet. The leaders are volunteers who want to help you become a better archer. Ask them questions and listen to their suggestions.

Safety is the number one priority of 4-H shooting sports. Make sure that you read and understand the archery safety rules before you begin shooting. Follow these rules and range etiquette and share them with others around the shooting range.

You will be shooting at a short distance until you're proficient before moving farther away from the target. It's a lot more fun becoming a consistent shooter before accepting more difficult challenges. Repetitive shooting with a comfortable draw weight is more enjoyable and the best way to learn good shooting form.

Be patient and give yourself an opportunity to develop good shooting skills that will lead to a lifetime of enjoyment on the shooting line for yourself and members of your family.

Archery History: The bow is among one of the most significant discoveries in the evolution of man and was used over 20,000 – 40,000 years ago. Bows and arrows enabled hunters to safely hunt for food and were used for protection. About 4000 years ago the Egyptians mastered the design and construction of the long bow. Soon thereafter, the bow and arrow was used in wars between nations. Centuries later the Turks introduced the recurve bow. The compound bow was invented in 1966 in the United States and has become the favorite in target archery and hunting.

Sheboygan County 4-H Archery Safety Rules

Archery is lots fun, but the fun can quickly turn into tragedy unless every archer observes some common sense rules. Before you even think about using your bow, learn these rules and make up your mind to follow them every time you hold a bow. Remember, most accidents are the result of carelessness and thoughtlessness.

As an archer, you must learn and practice these few simple rules:

1. Follow the instructions of the range commander. Give attention and listen to the range commander. Ask questions if you do not understand what is said.
2. Always use proper safety equipment, including an arm guard, finger tab or glove. A leader will ask the youth to reposition their safety equipment to prevent injury if the equipment is incorrectly positioned. If still incorrect the leader will ask the youth if the leader can reposition the equipment.
3. Always use arrows of the proper length for you. Arrows that are too short can cause injuries.
4. Always inspect your equipment before shooting, damaged equipment should be repaired or replaced to avoid injuries. Replace the bowstring whenever it becomes worn.
5. Wear snug fitting clothes, tie back long hair, remove large earrings, and clear off any pins or remove anything from chest pockets.
6. Always aim and shoot only at definite target; never shoot just for the sake of shooting. Always be sure you know what your target is and that it is safe to shoot. If you're not sure, take a closer look, you are still not sure, do not shoot.
7. Always be sure the area around and behind your target is clear before you shoot. Never shoot if there is a chance your arrow may ricochet from the target or another object and hit someone.
8. POINT, DRAW, and AIM your arrow only in the direction of your target. The arrow must always be pointed (aimed) in a proper, safe shooting position. A leader will ask the youth to change their shooting position if their stance is incorrect. If it is still incorrect the leader will ask the youth if the leader can reposition the archer.
9. Never "DRYFIRE" your bow. Always have an arrow on the string when shooting the now." DRYFIRING", shooting a bow without an arrow, can seriously damage a bow.
10. Always walk, never run, on the archery range. If you run, you might accidentally cross in front of another archer, step on arrows lying on the ground, or trip and fall into the target and be injured by arrows sticking out of it.
11. Shoot only with the knowledge and approval of your parents.
12. Follow the whistle commands given by the range commander. If you are not familiar with the whistle commands ask the range commander to give verbal commands with the whistle blasts until you are familiar with them.

WHISTLE: TWO BLASTS

VERBAL: "Archers to the shooting line."

Meaning: Pick up the bow and move into position on the shooting line. Do not pick up the arrows.

WHISTLE: ONE BLAST

VERBAL: "Begin Shooting"

Meaning: Archers may take the arrows out of the quivers and begin shooting.

WHISTLE: THREE BLASTS

VERBAL: "Walk forward and get your arrows,"

Meaning: Archers have completed shooting. All archers have set their bows down and are standing behind the waiting line. They may now go forward to the target line and pull their arrows.

WHISTLE: FIVE OR MORE BLASTS (series of blasts)

VERBAL: "STOP, STOP, STOP, STOP, STOP" or CEASE FIRE"

Meaning: Immediately let down and put arrows back in the quiver, step back behind the waiting line. There is an emergency on the range.

Remember to follow those unspoken rules in archery that we call Range Etiquette.

Ask your leader for a copy.

References: N.A.A. Rules of Target Shooting; N.A.A. Instructor Manual
Archery merit badge pamphlet, Boy Scouts of America

N.A.A. Junior Olympic Archery Development Program
Sheboygan County, WISCONSIN Wash Co SS/2010

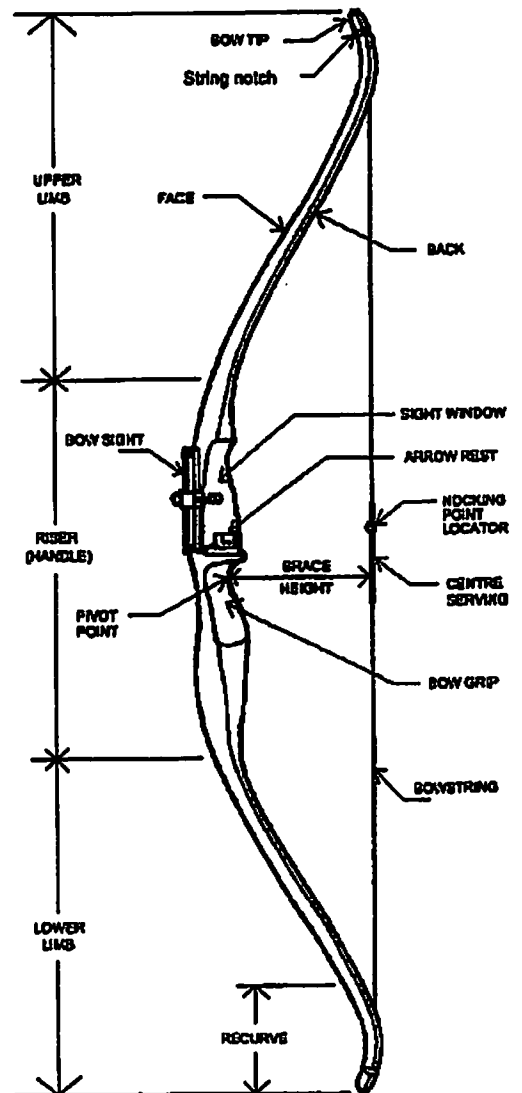
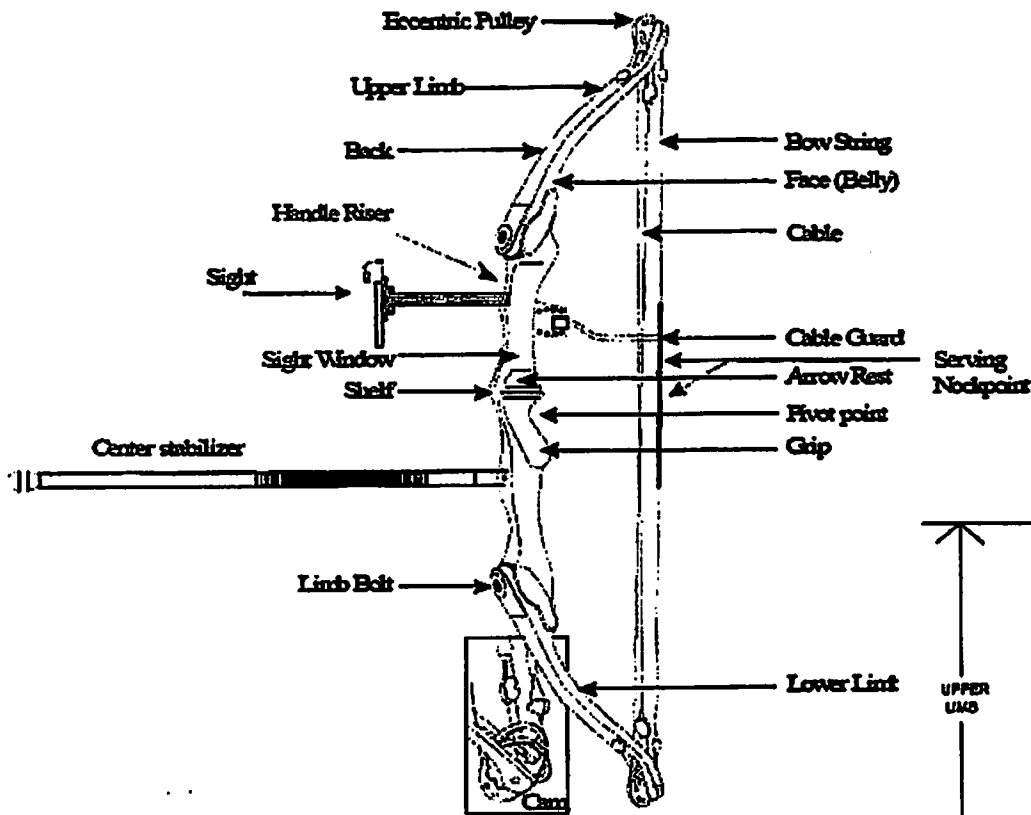
Archery Range Etiquette

There are a lot of spoken and unspoken rules in archery. How many of us actually know what the unspoken rules are? Many of the unspoken rules are what we know as range etiquette.

- Follow the range commands and rules as posted.
- Know who the range commander is and who will be calling questionable arrows whether it is the range commander or designated official.
- If there is a questionable call, you have the right to have the range commander or designated person make the final decision. It is o.k. to question doubtful arrows. HOWEVER you need to accept the decision that is made by officials without complaint.
- Be sure that you are in your lane. You need to straddle your lane number.
- No loud or inappropriate noises should be made on the range. No knuckle cracking, no chewing bubble gum etc.
- Don't leave the shooting lane if someone is at full draw on either side of you. Wait until the arrow is released.
- If you are on the line with your team...wait until all members of the team have shot all their arrows until you leave the shooting line.
- If you try to promote conversation on the shooting line and the person next to you does not respond to your conversation, respect his privacy and do not continue to talk. Also do not be afraid to tell someone politely that you prefer not to talk while shooting.
- Turn off cell phones or any listening devices inside the building or on the range. This is a distraction when on the range.
- Know the rules of the tournament before the tournament and then follow them.
- **General apparel guidelines for youth and leaders in the shooting sports program:**
 - Clothes should be clean and neat.
 - Items of clothing which exposes bare midriffs, bare chests, or undergarments are prohibited. All shirts must adequately cover the mid-section while shooting. Shirts and tops must meet your pants in the standing position.
 - Clothes must not be excessively baggy or loose fitting, exposing undergarments.
 - Tie back long hair; remove large earrings, clear off pins, necklaces, or anything from the chest pocket. Tuck in drawstrings from hooded sweatshirt.
 - Articles of clothing which display gang symbols, profanity, products, or slogans which promote tobacco, alcohol, sex, or are in any other way distracting are prohibited.
 - Check tournament rules for dress codes for each tournament.
- **Exercise GOOD SPORTSMANSHIP.**

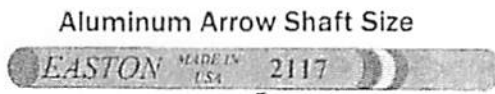
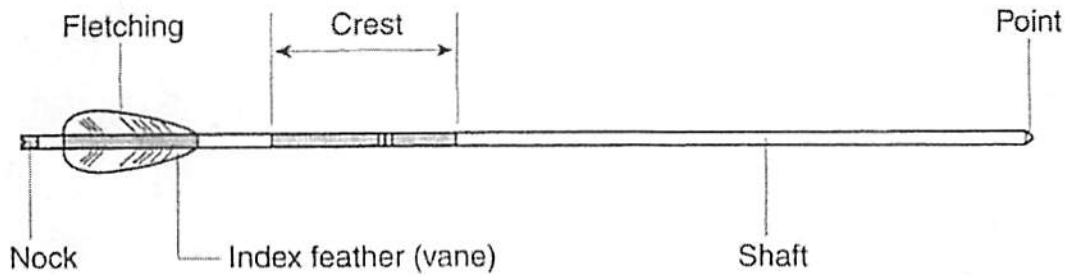
**Sheboygan County 4-H Shooting Sports
Sheboygan County, Wisconsin**

Parts of a Bow (Recurve and Compound)



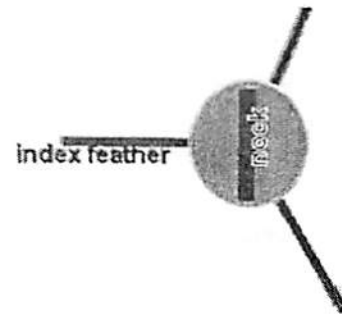
THE BASIC RECURVE BOW

Parts of an Arrow



SHAFT
DIAMETER
21/64

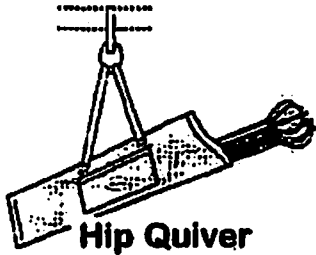
WALL
THICKNESS
17/1000



Types of Arrows

Type of arrow	Advantages	Disadvantages
Aluminum	Durable, wide range of sizes, arrow tips can be interchanged, can be straightened and reused	expensive
Carbon	Fast; maintain velocity at longer ranges; less wind resistance, straightness and thin diameter	Expensive; carbon layers break down if struck
Wood	Inexpensive	Cannot be matched to each other; not easily matched to archers draw length and weight
Fiberglass	Can be sized to draw length and weight; can be better matched than wood	Break easily
Aluminum-carbon	Fast; high strength; combine straightness of aluminum and strength of carbon; maintain velocity at longer ranges; less wind resistance, straightness and thin diameter	Very expensive; small diameter needs special arrow rest for fletching clearance

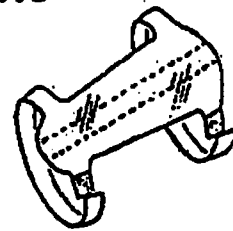
Archery Accessories & Equipment



Hip Quiver



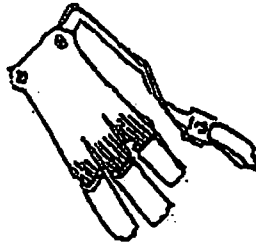
Finger tab



Armguard



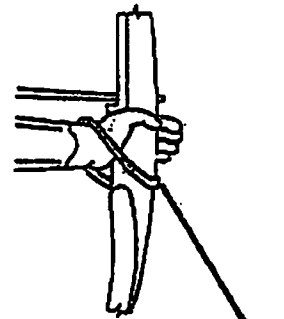
Kisser Button



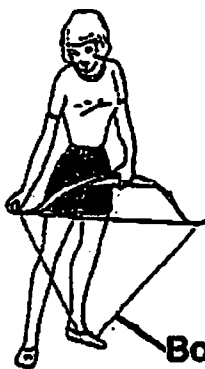
Glove



Peep Sight

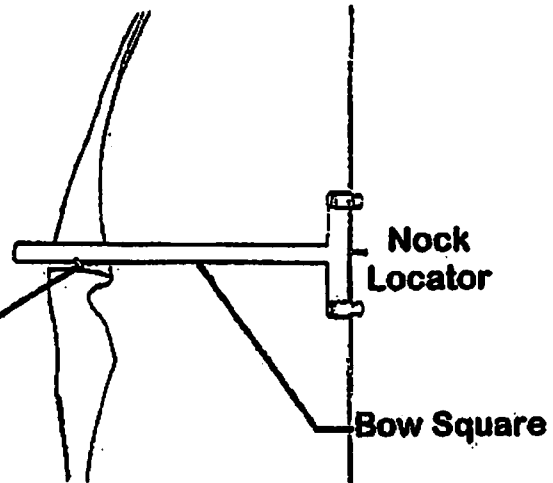


Bow Sling



Bow cord stringer

Arrow Rest



Nock Locator

Bow Square

Determining Eye Dominance

Most people have a dominant eye, just as they have a dominant hand or foot. When a person looks at an object with both eyes, the dominant eye aligns directly with the object unless an obstruction interferes with a clear line of sight. Under normal conditions, when finger is pointed at an object, or two or more objects are aligned visually, the dominant eye determines the alignment. Just as some people are truly ambidextrous, a very small number of people have indeterminate eye dominance. The majority, however, have a dominate eye. In most cases eye dominance and hand dominance are on the same side, but many people are cross-dominant. That is, their handedness and eyed ness are on opposite sides.

Humans have binocular vision – they get slightly different images from each eye and blend them in the brain to yield one image and sense of depth or distance. With both eyes open, you have a wider field of vision with more peripheral vision and better motion detection. In short, you simply see better when both eyes are used. Experience shows that shooting skills are learned more easily and often better developed when a shooter learns from the dominant eye side. Where eyed ness and handedness are on the same side, new shooter easily uses the dominant side. Cross-dominant shooters have a greater challenge, but they do better when they learn to shoot with the dominant eye.

Some shooters, particularly those with successful experience in shooting with the non-dominant eye, are reluctant to switch. The switching process usually involves a brief period of reduced success and frustration, followed by improved skill levels beyond their original level. Some experienced shooters have learned to shoot one-eyed, closing the dominant eye or obstructing it with a shield, blinder, spot of tape or a small object on the lens of the shooting glasses. Others have learned to override their dominate eye through practiced concentration or to compensate in some other fashion. Learning to shoot well is a challenge. You need every advantage to meet that challenge effectively. Learning from the dominant-eye side is a major advantage.

How to Determine Eye Dominance

Four basic methods for determining eye dominance are described. Those that provide a check for “cheating” are more effective in an instructional setting. Regardless of the method selected, the exercise should be repeated several times. Instructors should remain alert for eye dominance related problems with shooting performance.

Coach Pupil Method

Shooters should get into their coach-pupil pairs, standing several arm-lengths apart and facing each squarely. The “pupil” should place on thumb over the other, then cross the fingers of the top hand over those of the bottom one. This leaves a small, triangular opening. Raise the hands, keeping both eyes open, and center the coach’s nose in the triangular opening. At this point the coach should note which eye is visible in the opening. Then the “pupil” should bring his or her hands slowly back to the face keeping the coach’s nose in the opening. The hands should come to the dominant eye. Coaches must watch closely for wavering between the eyes, an indication of “cheating” or forcing the hands to a predetermined eye. The exercise should be repeated several times to confirm the original results with both partners checking their eye dominance. *Option:* Shooter could cup their hands together, leaving small openings between the bases of the little finger and thumbs. A card or sheet of notebook paper with a small hole centered in it could also be used.

Distant-Object Method

Use any of the methods of making an aiming device outlined above. Center a distant object in the opening. Make sure both eyes stay open and face the object squarely. Without losing sight of the opening, bring the hands, card or paper to the face. The aiming device will come to the dominant eye.

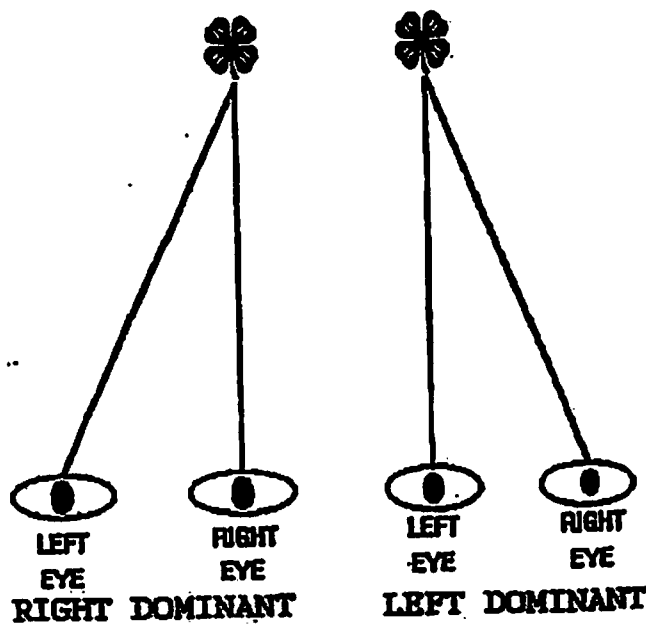
Finger-Point Method

With a pointing method, a distant object or a partner is used. The finger is pointed naturally at the object with both eyes open and the face square to the object. The eyes are covered or closed alternately. When the dominate eye is closed or covered the finger appears to jump away from the original location.

Tube Methods

Kaleidoscopes, toilet paper tubes and similar objects can be used with many young people to determine eye dominance. When the person is not aware of being tested for eye dominance, the tube will almost always be brought to the dominate eye. This also occurs with spotting scopes, telescopes and similar tolls where one-eyed viewing is needed.

*The above excerpt taken from the 4-H 428 "4-H Shooting Sports Guide Leader Manual"
University of WI Extension



Selecting a Bow

Many factors are important when choosing the correct bow for yourself.

After determining your dominant eye you will know if you need a left hand or right hand bow. If you are right eye dominant you will hold the bow in your left hand and pull the string back with your right hand. The arrow rest of the bow will be on the left side of the bow. For a left eye dominant person you will hold the bow in your right hand and pull the string back with your left hand. The arrow rest on the bow will be on the right side of the bow.

Choose a bow with a draw weight that you can easily pull and hold. You will repeatedly doing this over an hour of shooting so it should not be hard work. If possible, try a friend's bow that you can easily pull.

The draw weight listed on a recurve bow is measured at "Standard Draw Length" of 26 $\frac{1}{4}$ ". Older bows Standard Draw Length is 28". If your draw length is shorter than the standard, the resulting lower string tension means you will be shooting fewer pounds than the weight stated on the bow. In order to estimate the actual bow weight you will be shooting, you can add or subtract approximately 2 pounds for every inch your draw length is above or below or standard, respectively.

A recurve bow will be correct when it is about the same length as your height.

46-48" BOW	8-9 years old	under 22" draw length
54" BOW	8-12 years old	under 24" draw length
62-66" BOW	11 year-adult	62" under 26" draw length 66" - 27-28" draw length

The draw length should be matched to the shooter when using a compound bow. You must be easily able to pull the bow to the "let-off" of the bow and be able to come to your anchor point. If it is past your ear or 6" in front of your face, it is the wrong size for you. Do not use an incorrectly sized compound bow.

Another factor to consider when purchasing a bow is the cost.

Selecting Your Arrows

You need to use arrows of proper length. Arrows that are too short for the archer are dangerous. Arrows that are too long do not fly well.

Arrows for beginning shooters should be about 3 inches* longer than the finger tips of both hands extended in front of you. When the arrow is correctly sized it should prevent a hand injury if the bow is incorrectly overdrawn by several inches.

To determine correct arrow length:

1. Place nock of an arrow on your breastbone.
2. Extend both arms straight out in front of you with palms and fingers against each other with the arrow in between.
3. The length of the arrow must be 3 inches beyond the tips of your fingers.
4. For experienced archers, arrows can be 2 inches beyond finger tips.

To Select the proper arrows for your bow use, an approved "arrow selection chart" for correct spine and weight of the arrow to match your arrows to your bow.

Stringing a Recurve or Long Bow

All recurve or long bows should always be strung and unstrung using a bow cord stringer. Do not leave your recurve or long bow strung for long periods (overnight). If you do not use a bow stringer you can either damage the bow or if your hand slips, you could injure yourself.

RECURVE: A bow string has a large loop and a small loop. The small loop goes on the lower limb. The larger loop goes over the upper limb. When unstringing a bow, do not remove the string from the bow, but slide the string down on the upper limb of the bow. To help remember which end of the string to un-loop, place a rubber band over the lower limb and string (just above the string notches). The end without the rubber band will be unstrung.

1. Grip the bow with your left hand (if right handed). The limbs should be pointed downward with the string below the bow.
2. Put the pocket or cup end of the cord stringer on the tip of the lower limb (the end with the rubber band over the bow string) with the cord stringer toward the floor.
3. Put the loop end of the cord stringer with the rubber triangular piece on the upper limb. Position this rubber triangular piece on the upper limb about 6-8" below the upper string notch.
4. While holding the bow about waist-high, firmly stepping on the mid point of the hanging cord stringer and then lightly lift the bow straight upward. (Make sure the cord stringer doesn't move and you have the cord stringer positioned correctly.)
5. Firmly lift the bow bending the limbs. Using your right hand, slide the loose bow string loop into the upper limb notch, keeping your fingers on the sides of the bow limb. Keep firm pressure on the bow with your left hand, so you don't pinch your fingers on the bow string. (When stringing the bow keep your fingers from getting between the string and the limb. If you push the string into the string loops by sliding the fingers on the flat of the limb you can pinch the fingers when letting the pressure off the stringer).
6. Slowly let down the bow with your left hand and make sure the bow string is in the notches and centered on the bow limbs.
7. Remove the bow cord stringer.
8. To unstring the bow reverse the procedure, after placing the cord stringer properly on the bow.

Steps to Shooting(11) and Shooting Procedure

1. Archer has armguard, glove or tab, arrows in quiver and bow. Archer stands behind the "waiting line".
2. Archers waits for two whistle blasts from range commander. After hearing two whistle blasts, the archer goes to the shooting line.
3. **STANCE (1):** stand straight and tall, with feet shoulder width apart, sideways to the target. Do not pull an arrow from your quiver.
4. The range commander blows one whistle blast. One whistle blast means that the archer can nock an arrow and begin shooting.
5. **NOCK(2)** your arrow below the nock locator. (see attached for details).
6. **SET BOW HAND GRIP(3):** Set your bow hand on the bow grip comfortably with loose grip in your bow hand. Keep fingers relaxed;
7. **SET HOOK(4):** place your string hand on the sting below the arrow (three fingers below the arrow for beginner archers). The string should be in the first joint of the fingers. Do not use your little finger or thumb.
8. **RAISE AND EXTEND BOW (PRE-DRAW)(5):** Raise your bow arm and look toward the target and raise your string arm with elbow at shoulder height.
9. **DRAW(6):** While looking at the target with your string arm at shoulder height, pull back the string so that your body is in the shape of a "T". Keep a loose grip on your bow hand.
10. **ANCHOR(7):** If you are a beginner, draw the string back to your face and touch the tip of your index finger to the corner of your smile. As you become more skilled you may wish to lower your anchor point to the underside of your jaw. Your anchor point is a point that you will draw to consistently.
11. **AIM(8):**
 - a. **Barebow using point of aim:** Focus on your target reference point. Line the string next to your arrow and the tip of the arrow on your reference point. (also see details on "point of aim" method)
 - b. **Bow with sights:** Focus the pin of your sights on the center of the target or bull's eye.
12. **RELEASE(9):** With your eyes focused on the target, pause and relax your string fingers releasing your bow string.
13. **FOLLOW THROUGH(10):** After the string and arrow have been released, continue drawing back your string hand past your head. Keep your bow hand in place until you hear the arrow hit the target. Do not peek to see where the arrow hits the target.
14. **RELAX AND EVALUATE.(11):** After follow-through evaluate or reflect upon your just completed shooting steps. After the arrow hits the target lower your bow and draw hand and then look at the target. The archer puts the bow in the rack and stands behind the waiting line until all archers have completed shooting.
15. The range commander blows three whistle blasts. The archer Proceeds to the target backstop and scores arrows. (see scoring a target). The archer retrieves his arrows. (see also pulling arrows)

Nocking an Arrow (right eye dominant archers)

1. While standing on the shooting line and holding the bow with your left hand place the bowstring against your left leg or hip with a slight tilt to the right for a right eye dominant archer.
2. Your hip quiver is on your right side and slightly behind your hip.
3. Place your right hand (fingers downward) with your palm facing the arrow in your hip quiver.
4. Grip the arrow below the fletching and slowly pull upward removing it from the quiver. Your hand stays on the arrow until pre-draw.
5. Lift the arrow only high enough to get it out of the quiver. Keep it close to your side and tilt the arrow point forward toward your left hand.
6. Tilt and move the arrow forward between the bowstring and your body over your left arm. Do not lay the arrow on the arrow rest.
7. While looking under your right wrist rotate the arrow (using your right thumb and index finger until the index feather faces your body.
8. Place the arrow nock below the metal nock locator on the string and slowly pull the nock end of the arrow backward onto the bowstring. You will hear a snap or click sound when the arrow is nocked.
9. Lay the arrow shaft on the arrow rest.
10. Now you are ready for your pre-draw.
11. For a Left hand archer use opposite right or left designations as listed above.

INSPECTING EQUIPMENT: It is important before every archery class for the instructors to check and inspect equipment to make sure it is safe and in good working condition. Students should also learn to inspect equipment to help keep their archery experience safe and fun.

WHAT TO LOOK FOR:

Bowstrings: frayed or broken strands (replace string or if slightly frayed just wax string)

Serving: unwrapped serving needs to be replaced or re-wrapped

Nock Locator: should be checked to make sure it is not loose or missing

Bow limbs: cracks or splinters; bow needs to be taken off line and limbs replaced

Arrow rest: bent or missing or broken; replace as needed

e-clips on both sides of cam axle (on compound); if missing replace

Limbs are adjusted equally (on compound bow): observe gap between limb pockets and riser on compounds (it should be equal) adjust as needed

Cable guard & sliding cable cage (compound): check that cable guard & slide are in correct position

Bent arrows: remove from quiver for replacement

Broken nocks in arrows: remove from quiver for replacement of new nock

Point of Aim

Point of Aim: a method of aiming in which the arrow point is aligned with some point usually in front* of and below the target when shooting at a long distance.

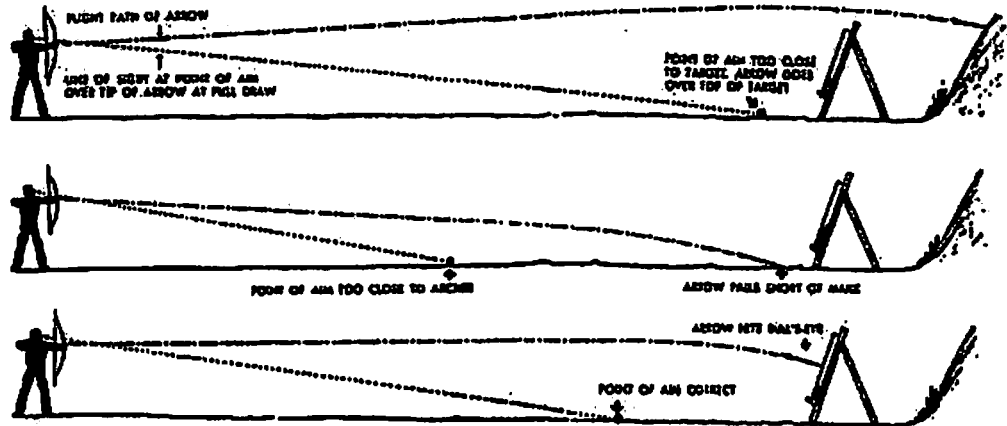
In this method, you have three fixed points with which to aim - *your eye*, (the bow string will look like a fuzzy line in front of your eye and should be next to the arrow.), the *point of the arrow* and your *anchor point*.

* For short ranges your point of aim will be in front of the target. As you move farther back your point of aim will be closer to the bull's-eye, and there will be one point at which your point of aim coincides with the bull's-eye. This is called point blank range.

Many people think arrows travel in a straight line, just like light. When an arrow leaves the bow, it does *not* fly flat. When studying the physics of projectiles (in this case, arrows), you understand that arrows have mass and they respond to gravity. Therefore, as soon as the arrow leaves the string it begins to fall. We call this a trajectory.

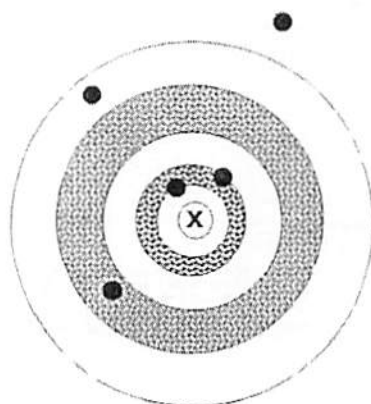
Taking into account the trajectory of an arrow, the theory of "point of aim" method of aiming is to compensate for the fact that you *can't get your eye in a direct line with the arrow's flight*. You aim at a point on the ground called the point of aim.

See examples of pictures of arrow flight and sight line.

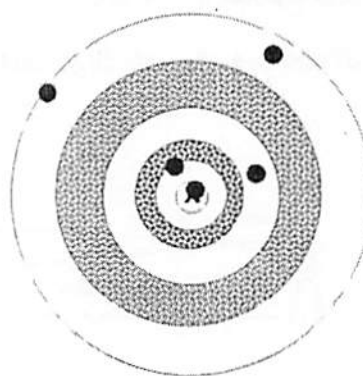


Archery Scoring

1. Place your scorecard (that has been filled out with your name etc.,) and pencil on the floor 3-4 feet in front of your target face before shooting.
2. After three whistle blasts, go to the target backstop to score your target. Pick up your pencil and scorecard from the floor.
3. Do not touch the arrows. Any arrow touched before scoring will be scored as "0" points.
4. Enter scores from the center out.
5. Points on a single spot NFAA target face are 0-1-2-3-4-5 or "5X". The "5X" counts as 5 points and is used as the first tiebreaker. The "5X" is scored when an arrow is in the small circle of the bulls-eye ring.
6. Points on a 5-Spot NFAA target face are 0-4-5 or "5X". The "5X" counts as 5 points and is used as the first tiebreaker. The "5X" is scored when an arrow is in the small circle of the bulls-eye ring. Typically one arrow is shot at each spot in any order. You may shoot any number of arrows on a spot except in a NFAA Championship Round.
7. The arrow shaft must touch the scoring ring to count for the next higher point. The range commander will make decisions on questionable shots. The range commander's decision is final.
8. Bounce out and pass through arrows will be re-shot at the end of the round.
9. Return scorecard and pencil to the floor 3-4 feet in front of the backstop after scoring and before pulling your arrows.
10. Total your scores after completing all shooting. Record the total number of "5X"'s in the box on your card. Sign your score card.
11. Give the completed score card to your instructor.



End 1



End 2

End						End Score	X's	Running Score
1	5	4	2	1	0	12	0	12
2	5X	5	3	1	1	15	1	27
3								
4								

Pulling Arrows

1. **Rule: Three whistle blasts — go to target backstop to score and then retrieve your arrows.**
2. **Pick up arrows near the shooting line after pulling your arrows. Use care not step on arrows.**
3. **If scoring, pick up score card and pencil from the floor 3-4 feet in front of the target back stop, then score the arrows and put the score card and pencil back at 3-4 feet again.**
4. **Never bend down in front of the arrows because of potential injury especially to the face or eye.**
5. **Do not pick up arrows laying on the floor/ground in front of the back stop. Use care not to step on arrows lying in front of the backstop.**
6. **Step to the side of your arrows or on the outside if using a double target face backstop. You may have to wait if an archer is already there pulling arrows at the station next to you.**
7. **Do not pull arrows if someone is standing less than 4 feet in front of your backstop.**
8. **The arrow highest from the floor must be removed first and proceed to the lowest arrow using the following procedure. Arrows lying on the floor must be picked up last.**
9. **Place you're the palm of your hand flat against the target face or backstop with the arrow between your thumb and index finger.**
10. **Grip the arrow with your second hand touching your hand that is around the arrow on the target face.**
11. **Slow pull backward in the same direction as the arrow entered the backstop. You may have to slightly twist the arrow when pulling back, but be careful not to bend the arrow.**
12. **Check for a loose arrow tip and turn the tip tight if needed. Place the arrow in your hip quiver before taking out the next arrow.**
13. **Repeat arrow-pulling procedure and lastly pick up arrows on the floor. Do not reach under another archer's arrows to get an arrow. Pick the arrows up after they have left the area.**
14. **Do not shoot damaged arrows. Give them to your instructor. Return to the waiting line.**

What is Sportsmanship?

What is sportsmanship? *Webster's Third International Dictionary* defines sportsmanship and the elements of sportsmanship this way:

- sportsmanship:** conduct becoming to an individual involving fair and honest competition, courteous relations and graceful acceptance of results.
- becoming conduct:** a mode or standard of personal behavior, especially as based on moral principles; behavior in a particular situation or on a specified occasion.
- fairness:** the quality or state of being honest and just; free from fraud, injustice, prejudice, or favoritism; conforming to an established commonly accepted code or rules of a competitive activity.
- honesty:** fairness and straightforwardness of conduct; integrity; adherence to the facts; freedom from subterfuge or deception; truthfulness; sincerity; free from fraud or deception; of unquestionable authenticity; genuine; real; virtuous in the eyes of society; reputable; characterized by integrity.
- competition:** the act or action of seeking to gain what another is seeking to gain at the same time, usually under fair or equitable rules or circumstances; a common struggle for the same object; rivalry; a contest, match or trial between contestants.
- courtesy/courteous:** well-mannered conduct indicative of respect for or consideration of others; consideration, cooperation, and generosity in providing or according,
- relations:** dealings; connections; affairs; state of affairs existing between those having dealings or relationships.
- grace/graceful:** disposition to kindness, favor, or compassion; the display of kindly treatment; a manner of acting with the intention of pleasing or charming; consideration; thoughtfulness.
- acceptance:** the act of accepting; favorable reception; the quality or state; to take without protest; to endure or tolerate with patience; to regard as proper, suitable, or normal; acknowledge or recognize as appropriate, permissible or inevitable; agree to; to regard and hold as true.
- results:** consequences, effects, or conclusions; decisions or resolution; that which is achieved, obtained or brought about through a process such as competition.

The above excerpt taken from "Developing Sportsmanship" 1996 by Kathryn J. Cox
CES – Ohio State University.

Talks and Demonstrations at Your 4-H Club Meetings

Why not do a talk or demonstration on archery or wildlife ecology at your next 4-H meeting?

Share the fun you're having here with other members of your 4-H club.

There are many topics to choose from and you can get help from youth and adult leaders to make your talk or demonstration a success. See your archery leader if you need props for your demonstration.

Examples are:

- 1. Discussing safety rules or whistle commands.**
- 2. Parts of a recurve or compound bow.**
- 3. Parts of an arrow.**
- 4. Scoring a target face.**
- 5. Point of aim reference.**
- 6. Archery safety equipment.**
- 7. Determining your draw length and / or your arrow length.**
- 8. Determining your dominant eye.**
- 9. Sportsmanship.**
- 10. Stringing and unstringing a recurve bow.**
- 11. Wildlife food or habitat (homes)**
- 12. Upland birds Identification**
- 13. Identification of Large mammals**
- 14. Waterfowl/raptors**
- 15. Trees and leaves identification.**
- 16. Animal track identification.**

Statewide Competition 4-H Shooting Sports

The 4-H Shooting Sports web page provides information on competitive events around the state. You can get registration information as well as rules for the events.

State 4-H SS web address is: <http://fyi.uwex.edu/wi4hshootingsports/>

**Local information on Sheboygan County 4-H Shooting Sports is also on the internet
See the Shooting Sports link on the Sheboygan County 4-H Youth Development page at
: <http://Sheboygan.uwex.edu/4-h-youth-development/projects/shooting-sports/>**

Sheboygan County, Wisconsin 4-H Archery Project

**Written by Sheboygan County, Wisconsin, 4-H Certified Archery Leaders.
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Acknowledgements

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Archery Terms

ALIGNMENT: Relationship of eye-string-sight and target center at full draw.

ANCHOR POINT: The point on an archer's face which the index finger or drawing hand touches during the act of holding and aiming.

ARCHER'S PARADOX: The arrow undergoes cycles of bending left and right as it leaves the bow, gradually stabilizing into smooth flight.

ARCHERY GOLF: The adaptation of the bow and *arrow* to the game of golf.

ARM GUARD: A piece of leather or other material worn on the arm holding the bow to protect the forearm from being slapped by the bowstring after release.

ARROWHEAD: The tip of an arrow, designed to protect the front end of the shaft or to aid in killing.

ARROWPLATE: A piece of material that is glued to the side of the bow at the point where the arrow contacts it. It provides protection for the bow from the friction of the arrow. Some modern bows have adjustable arrow plates to help tune the bow more precisely.

ARROW REST: A small protrusion on the bow at the point where the arrow will rest during the draw.

BACK: The Outer side of the bow, farthest away from the string.

BARBS: The two sharp points of an arrowhead that project backward.

BARE BOW: The style of shooting that does not allow for the use of sights, stabilizers, or other shooting aids.

BOW ARM: The arm that holds the bow while shooting.

BOW SIGHT: A sighting device attached to the bow which the archer uses to aim directly at the target.

BOW STRINGER: A tool used to apply tension to a bow's limb, allowing the archer to string or replace the bow string.

BOW SQUARE: A device, usually T-shaped, used to measure string height and nocking height.

BOWYER: One who makes bows.

BRACED BOW: A bow that is strung and ready for shooting.

BRACE HEIGHT: Distance between pivot point and the string

BROADHEAD: A hunting point with two or more cutting edges.

BULL'S EYE: The center of the target. The area with the highest value.

BUTT: Any material designed to stop arrows. A target face is pinned on the butt.

BLUNT: An arrow point that is not sharp or pointed.

CANTING: To tip the bow left or right of vertical while at full draw.

CAST: The distance a bow can shoot an arrow.

CENTER SERVING: An area of protective material wound around the center portion of the bowstring.

CLICKER: A small strip of metal, mounted on the sight window in front of the arrow rest, that gives a precise indication of when full draw is attained by snapping off the point of the arrow with an audible click

CLOUT: white object, such as a cloth, that is placed on a stake as a mark for long-distance shooting.

CLOUT SHOOTING: Long distance shooting, usually at a circular target, with a light-colored center, laid out on the ground

COCK FEATHER: The feather that is at right angles to the bow during the draw; usually the odd colored feather. Also known as an index feather; "index feather" is the politically correct term to use.

COMPOSITE BOW: A bow made of more than one substance.

COMPOUND BOW: A bow developed in recent years that use a system of cams, pulleys, and cables to change the weight build-up as the bowstring is drawn. Peak draw weight occurs during the first few inches of draw, with a reduction of up to 50-80 percent at full draw. Compound bows must be used in all NFAA and FITA competition.

CREEP: To let the arrow move forward after reaching full draw, but before release. Creep is caused by a loss of back tension.

CREEPING: Letting the draw hand edge forward before and during release.

CREST: The decoration of an arrow, usually consisting of several bands of color. It is used for identification.

CROSSBOW: A bow designed to be shot similarly to a gun, with a groove or barrel that directs the arrow and a trigger that releases the string.

DOMINANT EYE: The eye with which a person naturally aims.

DRAW: The act of pulling back the bowstring.

DRAWING ARM: The arm that draws the bowstring.

DRAW WEIGHT-COMPOUND: The weight measured in pounds, used to bring the bow to reach the point just before the wheels or cams turn over.

DRAW WEIGHT-RECURVE: The amount of pull, measured in pounds, needed to draw an arrow back its full length. For easy comparison of bows, draw weight is always measured with the bowstring drawn back a standard distance of 26 ¼ inches (28 inches/old bows) for a recurve bow. Also known as bow weight.

END: The number of arrows shot before the score is taken.

FACE: The scoring surface on a target. It is made of paper, canvas, oilcloth, or other material. Also, the side of the bow nearest the string.

FINGER SLING: A small strap attached to the thumb and index finger of the bow hand and used to keep the bow from falling after an arrow's release.

FISTMELE: The traditional term for string height. Fistmele was measured by placing the fist on the bow handle and raising the thumb toward the string. It is not applicable to most modern bows.

FLETCH: Feathers or vanes used in multiples and attached to the rear of the arrow to stabilize the arrow in flight.

FLETCHER: One who puts feathers or vanes on an arrow. Also used to designate the jig used in placing feathers on the arrow for cementing.

FLIGHT ARROW: A light arrow used in shooting for distance.

FLIGHT BOW: A bow designed for maximum cast with little consideration for accuracy.

FLU-FLU: An arrow used to shoot aerial disc targets or for hunting birds. It has very large feathers, which slow it rapidly after the first 30 yards and cause it to drop quickly.

FOLLOW-THROUGH: Holding the release position to insure direction and accurate flight of the arrow.

FREESTYLE: In target archery, shooting that does not allow the use of release aids or optical sights. In field archery, shooting with any approved shooting aid.

GAP: The vertical space an arrow sees between the tip of his arrow and the target, used in barebow shooting without benefit of a sight.

GLOVE: Three leather fingers held on the first three fingers of the release hand with a wrist strap. It protects the archer's fingers.

GRIP: To hold the bow, used in reference to holding the bow too tightly.

GUIDE FEATHER: *See* COCK FEATHER. *See* INDEX FEATHER

HANDLE: The rigid center portion of the bow that is held during shooting.

HEAD: The point or tip of the arrow.

HIT: To strike the target for a score.

HOLDING: Keeping an arrow at full draw while aiming.

INDEX FEATHER: The odd colored feather positioned at right angles to the nock.

INSTINCTIVE SHOOTING: Shooting without the aid of a sighting device or point-of-aim.

KISSER BUTTON (KISSER): A marker placed on the bowstring so that it touches the archer's lips when he is at full draw. It helps establish a better anchor point.

JUDO POINT: An arrow point with springy wires attached to it to limit the depth the arrow can penetrate the ground or target.

LAMINATE: To build or cover in thin layers. A laminated bow is a composite bow made of several layers of material glued together.

LET DOWN: To slowly release tension from full draw without losing the arrow.

LIMB: The upper or lower portion of the bow that bend when the bowstring is drawn.

LONGBOW: A straight bow that has only one curve when strung, and is straight when unstrung.

MAT: (also called Butt) Any backstop to which a target face is attached. The circular or square material can be grass, foam or cardboard.

MECHANICAL RELEASE: A device used by some archers instead of fingers to draw back on the bowstring.

MIMETICS: Is the act of pretending to draw, anchor, aim, and release without doing so.

N.A.A.: National Archery Association founded in 1879 by Maurice and Will Thompson

N.F.A.A.: National Field Archery Association founded in 1939.

NOCK: To place an arrow on the string. Also, the notched part of the arrow that is fitted to the bowstring and holds the arrow on the string.

NOCKING POINT: The point on the bowstring where the notched end of the arrow (the nock) is fitted. It is often marked by extra serving or nock locators.

NOCK LOCATOR: An attachment to the center serving of a bowstring used to mark the nocking point. It may be a metal crimp-on, a piece of plastic that shrinks to fit, or additional serving.

OVERBOWED: Equipped with too strong a bow.

OVERDRAW: To draw an arrow so far that the point passes the face of the bow.

PEEKING: Tilting the head to the left or to the right of the string to look at the arrow in flight.

PERFECT END: In target archery (FITA round), six arrows shot consecutively into the gold zone.

PLUCKING: Pulling the release hand perpendicular away from the face or jawbone upon release.

POINT-BLANK: The distance at which the point-of-aim and the center of the target are the same.

POINT OF AIM: A method of aiming in which the arrow point is aligned with some point in front of and below the target.

PORPOISING: Indicates arrow flight problem (nock end of the arrow moves up and down) caused by incorrect nocking point.

QUIVER: A container for holding arrows.

RANGE: A place for shooting, indoors or out.

RECURVE BOW: A bow that when unstrung bends in the opposite direction from its curve when strung. When strung, its tips tend to curve back in reverse to its body.

RELEASE: To let the bowstring escape from the fingertips, thus sending the arrow on its way. See mechanical release

ROUND: A series of arrows shot at specified target faces at set distances.

ROVING: Shooting at random objects at unknown distances.

SERVING: A wrapping of thread around the bowstring to protect it where the arrow is nocked and where the loops contact the bow's string grooves.

SHAFT: The main body of the arrow.

SHELF: The bottom portion of the sight window.

SHOOTING LINE: A line a specified distance from the target. In field archery, the shooter stands behind it; in target archery, he straddles it.

SIGHT PIN: An indicator an archer puts on his bow and uses as an aid in aiming.

SIGHT WINDOW: The cut-away section of the bow above its handle.

SNAKE: The act of the arrow disappearing under the grass.

SPINE: The stiffness of an arrow shaft in relation to its thickness, weight, and length.

STABILIZER: A weighted rod screwed into the bow to help steady it and minimize undesirable twisting of the bow or bowstring.

STRING FINGERS: The three fingers used to draw the bowstring.

STRING GROOVES: The two ends of the bow where the bowstring is fitted. Also known as string nocks.

STRING HEIGHT: The distance between the bow's handle and bowstring when the bow is strung. It is set by the manufacturer and is usually from 7 to 9 inches.

STRUNG BOW: A bow that is ready for shooting; also called a braced bow.

TAB: A flat piece of leather or plastic worn on the drawing hand to protect the fingers when drawing the string and to ensure a smooth release.

TACKLE: Any or all of an archer's equipment.

TASSEL: A large piece of yarn worn on the archer's belt and used to wipe arrows clean.

TORQUE: An undesirable twisting of the bow or bowstring on release.

TOXOPHILITE: An archer or one who is interested in all aspects of archery, including its history.

TRAJECTORY: The path of the arrow in flight.

VANE: A type of fletching other than feathers, usually made of plastic.

V-BAR: A form of stabilizer angularly adjustable, usually backward in a biased manner.

WAND: Used as special target. It is a slat 2 inches wide and 6 inches long shot at from a distance of 100 yards.

WEIGHT OF BOW: See DRAW WEIGHT.

WINDAGE: Left – right adjustment of a bow sight or the pin on the bow sight to allow for arrow drift in the wind.

WRIST SLING: A strap attached to the bow and wrist of the archer's bow hand and used to keep the bow from falling after an arrow's release.