

Archery



Winneshiek County Conservation Equipment and Recommendations:

- **Who:** 5th grade and up
- **What:** bows, arrows, targets, curtain; staff trained in NASP techniques
- **Where:** School - indoors (gym) or outside (field); Lake Meyer Park

Introduction

Throughout time, archery has developed into a versatile activity. It can be practiced in an arena as a sporting event or can be used as a means of hunting and providing food for your table. Sometimes people even fish using a bow and arrow, a practice referred to as bow fishing. Archery can be a personal hobby in which you build your own equipment. However you use it, archery can be a form of exercise, recreation, competition, or relaxation.

A Brief History

Humans have used archery since the dawn of history, first for hunting and warfare, and in modern times for sport. Archaeological findings show that the bow and arrow have been around for at least 20,000 years and possibly as long as 50,000 years. With the exception of Australia, bows and arrows have been used for hunting and warfare worldwide since the earliest recorded civilizations. Throughout ancient history, it was frequently the case that the army with the better archers and bows won the war.

The bow is considered to be the first machine constructed by humans that could store energy. The principle has always been the same: the archer transfers muscle energy into the bow with the help of the string. The bowstring then passes on the power to the arrow, giving the arrow tremendous speed. The earliest bows were probably short bows, used for hunting in the woods. Bows were used in this way by the American Indians.

Eventually, the bow as a weapon of war faded from use as pistols and rifles became more accurate and reliable. Rather than dying out, archery instead became a popular sport. It first appeared in the Olympics in 1900 in Paris. It was then dropped for many years due to a lack of defined international rules. Finally, archery returned to the Olympics in 1972. Archery continues to be a popular activity for recreation and competition today.

Equipment & Supplies

arrow curtain – the backdrop which stops arrows that have missed the target

arrows – pointed projectiles that are shot with a bow

bows – tool (originally a weapon) that is made of a strip of flexible material with a cord connecting the two ends; used to propel an arrow

targets – a mark to aim and shoot at; object that arrows penetrate

quivers – hold arrows that are not in use, can be on the ground or attached to a person

painter tape – allows lines to be placed on an indoor surface without damaging the finish

rope, chalk, or spray paint – allows lines to be placed on outdoor surfaces

arm guards (optional) – protect shooting forearm from bowstring

finger guards (optional) – protect fingers on shooting hand, aid in gripping the bowstring

Terms & Definitions

arrow rest – on the riser, holds the arrow stable while preparing to shoot

bowstring – cord joining the ends of a bow

cable guard – metal rod on a compound bow that holds the cable slightly off to one side and out of the arrow's path

center serving – thickened section of bowstring where archer grasps the string

compound bow – has pulleys set on the limbs, often at the ends; the purpose is to make the cocked, "ready-to-fire" position of the bow easier to hold letting a person aim a more powerful bow more carefully than they otherwise could

draw – pulling the string back on a bow, causing it to bend

draw weight – amount of force needed to fully draw a bow

dry fire – drawing and releasing the bowstring without having an arrow nocked; this should never be done as it can cause damage to the bow and potentially harm the archer

fletching or vane – feather or plastic cutout located toward the rear of the arrow that helps guide the arrow to the target

grip – part of the riser where the archer holds the bow

index fletching – odd-colored fletching that indicates how the arrow should be placed on the bowstring

limbs – bow "arms," an upper and lower, attached to each end of the riser; store potential energy put into the bow until the string is released

long bow – wooden bow around 6 feet in length

nock – small attachment at the rear of the arrow that keeps the arrow in contact with the bowstring while shooting; also, the action of placing the arrow on the bowstring

nock locator – plastic, brass, or string piece on the center serving below which the arrow is nocked

point – leading end of the arrow, sometimes called the head

range – the area used for shooting; also, the distance from bow to target

recurve bow – a bow whose limbs curve away from the archer when the bow is held in shooting position

riser – handle section of bow

shaft – main part of the arrow to which all other components are attached

Skills & Strategies

Range set-up

Hang the arrow curtain securely, several feet in front of anything solid, with folds and wrinkles rather than stretched tight, and allow several inches to drape onto the floor/ground. Place the targets a few feet in front of the curtain. Choose an appropriate distance back from the targets to place a “shooting line.” From this line, archers will shoot and wait until it is safe to retrieve their arrows. Quivers are also placed on this line. Leave enough room for the act of shooting and the equipment, and then place a “waiting line.” All students not shooting should remain behind this line at all times.

When getting new archers started, there are a couple of set-up hints that help beginners be successful. Use blank faces on the targets or cover targets with paper. This keeps students focused on technique and form, rather than immediately focusing on competing with themselves or others. Have students start shooting from a close enough distance that all can hit the target.

Determining dominant eye

A dominant eye should be determined so that students will be able to aim and shoot easily and accurately. Most often, though not always, the dominant eye will be the same as the dominant hand. The hand that holds the bowstring (string hand) should be on the same side of the body as the dominant eye. Even though one eye is dominant, it is recommended to keep both eyes open when shooting. Here are two of many methods for identifying eye dominance:

Point and Wink: With both eyes open, point an index finger at a small distant object. Alternately wink eyes. When the dominant eye is closed the object will appear to move away from the pointing finger

Point at Instructor: With both eyes open, point index finger at instructor’s face. Instructor will see the student’s dominant eye above the pointing finger

Shooting Process

1. **Stance:** Straddle the line from which you will be shooting, feet shoulder-width apart with bow-hand foot closer to target face. Front foot should be open at a 45° angle from line; back foot is parallel to line.
2. **Nock the arrow:** Place arrow nock just below the nock locator on the string with the odd-colored fletching (index fletching) away from the bow. Rest arrow shaft on the arrow rest
3. **Hand set:**
 - a. **Bow hand:** Opposite hand from dominant eye. The bow’s grip should rest in the lifeline of the palm. Keep the hand relaxed; don’t clench a fist around the bow. Rotate the elbow of bow arm down and out to allow clearance for the string.
 - b. **String hand:** Same hand as dominant eye. Grasp string with 3 middle fingers at the first joint of fingers to form a hook. Back of hand should be flat, thumb relaxed; index finger should be above the arrow and other 2 fingers below.
4. **Draw:** Keep bow arm and shoulder level, drawing arm will be slightly higher than bow arm. Drawing hand, arm, and elbow should be nearly parallel to floor/ground. Pull the string toward the side of your face with your dominant eye, **draw until the index finger of your string hand touches the corner of your mouth.**
5. **Aim:** Sight down the arrow using the tip to aim, preferably keeping both eyes open. Make adjustments in aiming by pointing the tip at different locations rather than adjusting your form.
6. **Release:** Relax the fingers and back of the hand to let go of string and release arrow. **Draw hand should follow through** to near your shoulder.

7. Retrieving arrows: Retrieval should only happen when no one is shooting and all bows are placed on the rack. Place one hand on the target just above the arrow; the other hand grasps the arrow as close to the target as possible. Look behind to ensure no one is near, and twist and pull to remove the arrow. Carry arrows with one hand covering points and the other hand around the shaft below the fletching.

Scoring

The target faces of many archery targets are made up of ten concentric rings. Once archers have finished shooting their arrows and all bows are returned to the rack, allow archers to approach targets for scoring. Add value of all arrows together for each round.

- Target rings have a value of 1 to 10 points, starting with 1 point in the outermost ring and 10 points in the center two rings.
- The very center is 10 points, plus an “X”.
- The “X” is the tie breaker. For tied scores, the person with the most Xs is the winner.
- If an arrow is on a line between two circles, it is worth the higher point value.
- Arrows outside of the rings are worth 0 points.

Safety

- Mark ALL doors and entryways with signs warning that an archery range is in use.
- Never dry fire a bow.
- Dropped arrows should not be retrieved until other arrows are retrieved.
- Keep bows vertical when loading arrows to prevent injuries to nearby archers.
- Arrows should only point down range.
- Do not use: bent or cracked arrows, arrows with cracked or bent nocks, and arrows with missing or flapping fletching.
- Students waiting to participate should remain in the waiting area, a safe distance behind the shooting area.
- Always walk.

Extensions

Math/Physics: range, gravity, trajectory, velocity, energy

History: different bow types and purposes, evolution of the arrow

Resources

- National Archery in the Schools Program (NASP): <http://www.nasparchery.com/>
- Genesis Bow Owner’s Manual. <http://www.genesisbow.com/genbow/>
- Iowa Archery in the Schools Program, overseen by Iowa DNR Shooting Sports Program. <http://www.iowadnr.gov/Recreation/ShootingSports.aspx>
- PE Fit: Fitness circuit activities for students not actively shooting: <http://pejournal.com/>
- Today’s Hunter in North Carolina: Units for archery and hunting in general. <http://www.hunter-ed.com/NorthCarolina/index.html>.