



FOR YOUTH DEVELOPMENT®
FOR HEALTHY LIVING
FOR SOCIAL RESPONSIBILITY

Physical Activity: ARCHERY

While participants are shooting arrows in archery, they are getting lots of health benefits. The information in this packet provides information about those benefits, from the muscles archery develops to the way it makes people feel.

This packet supplements what you will be doing during archery. You do have to get participants to recognize that this activity is great for their physical and emotional health, but you can do that in the way that best works for your group and you. These materials offer lots of different ideas for incorporating the health components into your already fabulously planned session.

Read the Facilitator's Guide in order to understand Frost Valley's physical activity initiative, to effectively use the materials in your session, and for ways to encourage physical activity among your participants in and beyond Frost Valley.

This chart, also featured in the Facilitator's Guide, highlights each of the sections in this module. This can guide you in selecting what to focus on during the session.

Description	Gives a profile of archery's health benefits
Type of Activity	Explains how archery is anaerobic
Where It Fits within the Recommended Amount of Physical Activity	Points out where archery fits within the suggested recommended 60 minutes of daily exercise
Parts of Body Used	Names parts of the body that archery uses
Muscles Affected	Names the specific muscles that archery builds
Health Benefits	Lists archery's overall health benefits
How It Makes You Feel	Explains archery's positive emotional benefits
Suggestions for Ways to Incorporate	<ul style="list-style-type: none">• Day 1: Offers suggestions for introducing archery's health benefits during the first day of the session• Following Sessions: Gives lots of ideas for reinforcing participants' knowledge of archery's health benefits during the remaining sessions
Some Fun Ideas	Offers ideas for games and other activities that build participant awareness of archery's health benefits
Interesting Facts	Generates interest in archery
Evaluation	Presents a modifiable questionnaire about participants' views on archery and about whether they will continue beyond Frost Valley

DESCRIPTION

Archery might be a low-impact sport, but it's one that requires skill, coordination, muscular strength and endurance (especially of the upper and mid-body), and flexibility, as well as power, which is what releases the arrow from the bow.

Your muscles need to be plenty strong to hold a bow, which can weigh as much as 70 pounds. The drawing and holding of a bow require muscles that don't normally get used the way archery uses them. The movement is a bit like lifting weights: The stress is held for several seconds before the archer releases the string to fire an arrow. The stress is on the muscles of both arms, as well as on the chest, shoulders, and back. When done repeatedly, the drawing and firing of a bow leads to muscle development.

For archers who compete in tournaments, there is a lot of walking involved, going to and from targets. At a competition, archers can walk five miles pulling heavy loads!

Archery also develops balance, hand-eye coordination, concentration, and self-control.

Archery, which can be a solo leisurely activity or a team sport, benefits all types of people— able-bodied, living with a disability (take, for example, Matt Stutzman, a record-breaking armless archer who fires the bow with his feet!), young and old, athletic or not.

Archery, an Olympic and Paralympic sport, is a lifelong physical activity because people can continue to play it as they age, even when some physical abilities lessen (unlike in higher-impact sports, like running or football).

TYPE OF ACTIVITY: Anaerobic

Archery is considered an anaerobic sport, especially because it builds muscle strength and endurance. It is a moderate-intensity activity.

WHERE IT FITS WITHIN THE RECOMMENDED AMOUNT OF PHYSICAL ACTIVITY

Archery is a muscle-strengthening activity. It can be one of the required three muscle-building activities young people participate in each week as part of the recommended daily 60 minutes of physical activity, most of which should be aerobic.

Because archery requires core body strength and the ability to repeat the same motion again and again, archers need to be pretty fit. They can benefit from a balanced workout that includes stretching, aerobic activity (cardio), and strength training.

PARTS OF BODY USED	MUSCLES AFFECTED (See <i>Terms to Know</i> in Facilitator's Guide)	HEALTH BENEFITS
<ul style="list-style-type: none"> • Hands • Arms • Shoulders • Hips • Buttocks • Thighs • Knees • Upper Back • Chest • Heart 	<ul style="list-style-type: none"> • Abs (<i>Abdominals</i>) • Rotator cuff muscles • Delts (<i>Deltoids</i>) • Traps (<i>Trapezius</i>) • Lats (<i>Latissimusdorsi</i>) • Rhomboids • Gluteals(<i>Glutes</i>) • Quads (<i>Quadriceps</i>) • Hamstrings 	<ul style="list-style-type: none"> • Increases body strength • Builds stamina • Hones hand-eye coordination (from aiming) • Gets you outside • Builds power (needed to anchor the string while holding the bow!) • Improves cardio, muscle tone, and strength just by walking to retrieve arrows (or, in competition, walking to and from targets)

HOW IT MAKES YOU FEEL

- Enhances self-confidence
- Makes you better focused
- Makes you feel calm and less stressed
- Enhances patience
- Makes you happy
- Gives you a sense of balance and strength
- Aligns your posture which makes for a better physical and socio-emotional health

SUGGESTIONS FOR WAYS TO INCORPORATE

DAY 1

1. When introducing the archery program, begin by asking participants:
 - Who in this group has done archery before?
 - What do you like about archery? What don't you like?
 - What do you think of archery as exercise? Do you think it gives you a good workout? Explain why or why not.
 - What parts of the body do you think get the most benefit from archery?
 - What types of skills do you think you need to shoot the arrow right in the middle of the target?
2. Have participants warm up before beginning; this will be mostly stretching, which can be counted as part of the recommended 60 minutes of daily physical activity. See Archery Stretches below.
3. As you demonstrate proper body positioning, arm turn and control, proper draw, and how to increase distance, invite participants to figure out, as you model and/or as they begin to do the activity, which body parts and muscles seem to get the most action. Point to archery's strength-building qualities. Point out that they are using muscles that they don't always use. Use your body to show where the muscles are located. Name them, if desired. (Younger participants might find the names confusing, so simply point to the areas where the muscles are located).
4. Have a counselor or participants demonstrate shooting. Once he or she is in place, holding the equipment properly and ready to shoot, ask the others what they notice. For example, is the archer looking around or right at the target? How is the archer's form? Is the archer standing tall and balanced, or does he or she appear unsteady (this might be the case for new participants, which is to be expected). To balance, archers keep their knees soft to ground their bodies and maintain control, thus leading to better balance. The goal here is to point out the additional benefits of archery — focus, balance, etc.
5. Introduce a chart or journal in which participants can log how they are doing in archery each day and how they are feeling physically. For example, on the first day, they might feel weak as they hold the bow. But by day five, they are definitely feeling stronger and will have a more forceful firing of the arrow. They might feel uncertain about their aim the first day, but by the end of the week, they are more confident that they can hit the target right in the middle.

FOLLOWING SESSIONS

1. As participants learn archery techniques, reinforce with them what muscles are used and strengthened. Participants can compare the different ways to shoot to determine how these affect their bodies.
 - As participants are introduced to and try new techniques, ask them what they need to do to be able to fire at this level. For example: What muscles will you need to strengthen now that your bow is heavier?
 - What will you need to work on? (Hand-eye coordination, balance, etc.)
2. After each session, encourage participants to participate in an aerobic/cardio activity that will help them to become better archers. (Refer to the exercise table in the Facilitator's Guide.)
 - What activity did you do? How long did you do it?
 - With archery and your other physical activities, do you think you did your 60 minutes worth of exercise?
 - How do you think this exercise will help you improve your archery skills?
3. During each session, model and then have students do some stretching exercises that are recommended for archery. See Archery Stretches, below, for examples.
4. During the last session, hold a Challenge Tournament, where participants can heighten their archery skill level a notch by, for example, firing with a heavier bow and from a greater distance, or using a new firing technique.

SOME FUN IDEAS

1. Where appropriate, have participants play archery games to increase their skill and strength and cardio levels. See Archery Games, below, for examples.
2. Participants can have an arrow-firing contest to see whose arrow goes the farthest and to figure out what made that happen: Was it improved skill, more muscle and force, and/or better hand-eye coordination?
3. Encourage participants to try a new activity at camp and to compare it with archery.
4. One way to measure the amount of daily physical activity is by counting the number of steps taken in a day. Typically, there are 2,000 steps per mile, which (about 30 minutes of continuous activity). Participants can calculate the number of steps they have taken during archery using the number of minutes they have participated in it. In archery, the comparison looks like this:

ARCHERY	10 min.	15 min.	20 min.	30 min.	60 min.
# OF STEPS	1,271	1,906	2,542	3,813	7,626

Fifteen minutes of archery is equivalent to almost one mile worth of steps! There are guidelines for the number of steps that make up moderate to vigorous physical activity and can add up to the recommended 60 minutes of daily activity. For young people, 9,000 steps is the magic number.

Participants can chart the number of steps they have taken in a day, including swimming, general walking (using a pedometer), and other activities. Post the Step Conversion table on page 12 of the Facilitator's Guide for participants to see, and/or distribute it so they can refer to it at the end of each day. Have participants share their step rates, looking at increased activity, the effect on their bodies, etc.

5. A variation on step-based measurement of physical activity is looking at equivalent miles: 2,000 steps equal one mile; 10,000 equal 5 miles. Post the Mileage Conversion Chart on pages 13-15 of the Facilitator's Guide for participants to see, and/or distribute it so they can refer to it at the end of each day. Have participants share how many steps they took/miles they covered.

ARCHERY: Interesting facts

The first nationwide archery survey showed that 18.9 million Americans age 18 and older participated in archery and/or bow hunting in 2012.¹

Archery is one of 36 Olympic sports. It was part of the Games from 1900 to 1920 and has been a regular feature since 1972.²

Archery is a sport in the Paralympic Games (Olympics for people with disabilities). The first archery competition for those with physical impairments was held at the Stoke Mandeville Hospital in 1948 and archery was one of the original Paralympic sports at the 1960 Paralympic Games in Rome. The sport has three different classifications and athletes in 54 countries are currently practicing archery. There are individual and team events in both standing and wheelchair competitions. Athletes shoot from a distance at a target marked with 10 scoring zones. At the London 2012 Games, 140 athletes competed in nine different medal events.³

In March 2015, two-year-old Dolly Sivani Cherukuri, from Vijaywada in the southern state of Andhra Pradesh in India, set an Indian record as the youngest person to consistently hit a target with an arrow. Dolly shot a total of 72 arrows from the distances of 15 and 22 feet and reached a score of 388.⁴

- Records trace the first bow and arrow back as far as 50,000 B.C. They were traditionally used for hunting.⁵
- An archery lover or expert is called a toxophilite.⁶
- An arrow travels at about 240 kilometers per hour when fired from a bow, but some competitors can make speeds of over 320km/h.⁷
- In a tournament, an archer will pick up and draw his or her bow over 300 times, the equivalent of picking up 7.8 tons over 4 days.⁸

EVALUATION

1. How FUN would you say archery is? Choose the number that shows what you think.

3 = A lot of fun **2** = Pretty fun **1** = A little fun **0** = No fun

2. How HEALTHY would you say archery is? Choose the number that shows what you think.

3 = Very healthy **2** = Pretty healthy **1** = A little healthy **0** = Not healthy

3. Which parts of your body would you say got the best workout from archery?

- Legs
 - Hips
 - Shoulders and neck
 - Lower back
 - Heart
 - Lungs
 - Whole body
-

4. How often might you participate in archery again at Frost Valley? Choose the number that shows what you think.

3 = Very often **2** = Pretty often **1** = Rarely **0** = Never

5. How often might you participate in archery again after leaving Frost Valley? Choose the number that shows what you think.

3 = Often **2** = Sometimes **1** = Not very often **0** = Hardly ever
(everyday) (once a week) (once a month) (once a year)

ARCHERY STRETCHES ⁹

For all stretches, always hold a stretch for a count of five seconds and then alternate arms or sides and repeat for five seconds. This counts as one repetition. Start off easy, rotating your head from left to right, up and down, and roll your head around in circles on top of your shoulders. Next, extend your arms straight out and start rotating them in small circles, gradually increasing the circles in size, then in the opposite direction. Start nice and easy, and gradually push yourself each time to go a bit further in the stretch. These stretches will begin to get the blood flowing to your muscles, warming them up. While stretching, breathe in and out; don't hold your breath.

- **Praying Stretch** With palms placed inward together, rotate fingertips upward, thumbs touching the chest and elbows out. This stretches the forearms and loosens the wrist, stretching the fingers and tendons.
- **Reach for the Sky** Put palms together and interlock fingers. Starting at waist height, slowly extend straight arms and hands over the head. When the hands reach the top, rotate the wrist up and outward, facing the palms up to the sky. Hold for five seconds and lower back to starting position.
- **Alternate Side Stretch** With legs shoulder-width apart, reach one hand up over the head and begin to bend at the waist. Reaching with that hand over the head, stretching out all the muscles on the side, hold the pose at a comfortable position until feeling the pulling in the side. Repeat in the other direction.
- **Upper Torso** With both hands on the back of the head and elbows out, push the shoulder blades as if trying to make them touch. Now rotate the right elbow forward, twisting at the hips, and hold for a count of five. Return to the start position and rotate the left elbow forward, twisting at the hips.
- **Hugging Stretch** Wrap both arms across the body, reach around to the back as if hugging someone. Extend fingertips toward the center of the back to maximize the stretch.
- **Elbow Grab** Using the right arm, reach up over the head, placing the palm of the hand open on the back of the neck. Using the left hand, reach up, grabbing the right elbow. Now pull the right elbow toward the left, sliding the right hand down the back of the neck onto the left shoulder blade, and hold for a count of five. Alternate sides for five reps.
- **Finger Reach** Placing the right arm facing upward behind the back, and the left arm facing downward over the back of the head; stretch the arms to make the fingertips touch.

ARCHERY GAMES ¹⁰

For all games, be sure to establish “safety zones” and guidelines.

- **Balloons** This is a basic, carnival-style challenge: Pop a balloon. Spice it up a bit by adding sheets of paper, fortune cookie-size, inside the balloons. They might say things like: “You have won two credits for the Frost Valley store” or “Your winning lottery numbers are . . .” You can also place a small toy or piece of gum in each balloon. The goal? You pop it, you win it.
- **Archery Golf** Set up targets (large colorful trash bags with hay make great targets) in places where other participants and staff will not be. Each participant gets one arrow and a bow. Label each arrow so that the participants know to whom each arrow belongs. The participants (one at a time) shoot their arrows toward a target, which should be far enough away for an archer to try to hit it in three shots (“par three”). Once all the participants have fired, the group moves together to the arrow closest to the first target. The participant whose arrow it is then shoots it once again. Then the group moves to the next closest target.
- **Shooting Range** Set up targets at different ranges. Targets can include coffee cans, balloons, stuffed animals, playing cards, pillows, apples, etc. Participants can shoot their arrows at the objects, as if they were in a shooting gallery at an amusement park or in a large arcade.
- **Piñata** Hang a piñata. Have the archers take turns trying to bust it open by shooting arrows at it.
- **Distance** Get to a large open field where participants shoot as far as they can. The group determines whose arrow got the most distance.
- **Beat the Instructor** Participants try to outshoot the instructor.

ENDNOTES

¹ Rikard, Shannon, "18.9 Million Participate in Archery, [Internet - WWW, URL] <http://www.archerytrade.org/news/survey-says-18.9-million-archers-are-active-in-u.s>, 9 August 2013.

² NHS, "Aim for health with archery," [Internet - WWW, URL] <http://www.nhs.uk/Livewell/olympics/Pages/Archery.aspx>, 22 May 2015.

³ International Paralympic Committee, "Archery," [Internet - WWW, URL] <http://www.paralympic.org/archery>

⁴ Agarwal, Vibhuti, "Indian Toddler Sets New Record as Youngest Archer," <http://blogs.wsj.com/indiarealtime/2015/03/25/indian-toddler-sets-new-record-as-youngest-archer/>. 25 March 2015.

⁵ NHS, op.cit.

⁶ KalliKids, "Archery for Children: Fun Facts & ideas," [Internet - WWW, URL] <http://www.kallikids.com/en/KalliKids/For-families/expert-pin-boards/index.cfm/page/archery>.

⁷ Ibid.

⁸ Ibid.

⁹ Maure, Jason, "Warming Up, Exercises and Training for Archery, [Internet - WWW, URL] <http://wwocz.net/jason-warming-up-exercises-and-training-for-archery/>, 26 February 2014.

¹⁰ Jackson, Curt "Moose," Archery Games and Challenges, [Internet - WWW, URL] <http://summercampprogramdirector.com/archery-games-and-challenges/>, 25 January 2011.