New England Bill Koch
Youth Ski League Manual

Fourth Edition

New England Nordic Ski Association

New England Bill Koch Youth Ski League Manual, 4th Edition

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Introduction

For the Love of Our Children

There is hardly a higher calling than raising children. The experiences children have growing up come from choices, behaviors, and attitudes of adults in their lives, and these experiences become the very foundation of the rest of their lives. By exposing our children to cross country skiing, we can help build in them a love of health, sport, nature, winter and freedom that will enhance their lives.

A love of skiing will be a lifetime friend for our children. Free heel skiing lets the body find fluidity and efficiency over snow. Under our own power we glide and float through whiteness. Who says people can't fly?

A love of health will give our children a standard for mental and physical fitness. Nordic skiing requires we use our whole bodies, strengthening our cardiovascular systems in addition to our muscles. The simplicity and purity of the XC motion allows a person to focus on the mind-body connection.

A love of sport, competitive or recreational, opens the door to fun, play, and joy. Positive skiing experiences for all our children is paramount. Not everyone can come in first, but everyone can challenge themselves, learn from experiences, encourage each other, and celebrate together.
A love of nature connects our children to the world. When we ski, we work with nature; we dress and wax for the day, we choose trails and routes that make sense in the conditions, and we strive to move efficiently through the landscape. As our reward, we witness nature's beauty and power: in the woods, on mountain tops, over frozen lakes and rivers, and above us in the storm, stars or sun that occupy the sky.

A love of winter allows our children to live fully all year long. Many people insulate themselves from winter, but people who ski revel in the snowy season. They get outdoors, they make their own warmth, they breathe deeply, and they sleep well at night
.
A love of freedom leads children to self-expression, respect for others, and curiosity which will enrich every aspect of their lives. There is something liberating about donning skis and floating over the snow… *Free the heel and the mind will follow!*

All for the love of our children. -Kate and Bill Koch

The Bill Koch Story

'Kochie' was born June 7, 1955 and grew up in Guilford, Vermont where he loved to play on skis. He skied every chance he got, even skiing to school. Each year Bill skied a little more and raced a little faster. When the snow melted, he ran, biked, and hiked with his ski poles with the dream of one day being the best skier he could be. That dream took him all the way to the Olympics, a silver medal, and an overall World Cup win.

At the 1976 Winter Olympic Games in Innsbruck, Austria, he was the Olympic silver medalist in the 30-km race and from then on his name was associated with the sport of cross country skiing. Prior to 1981, there was only one technique in cross country skiing, the "diagonal stride," in which both skis stay in prepared tracks. But while competing in a race on a frozen river in Scandinavia at the end of the 1980 season, Bill was surprised to see a Swede, Bjorn Risby, go sailing by him using a different technique. Risby had one ski in the track and was pushing off to the side, like a speed skater, with his other ski. Risby won the race and Bill decided he had to learn the technique, which was known as the "marathon skate." He perfected the technique in the Winter of 1981 and then surprised the international community in 1982 when he used it to win in Le Brassus, Switzerland.

Bill continues to share his dream and his love of skiing with everyone he meets. In New England we are honored to call our youth ski program the Bill Koch Ski League. He is an inspiration to all people who ski, young and old.

Written by Paul Robbins

Bill Koch in 1977, just one year after he won his silver medal at the Olympics, meeting children at an early Bill Koch League club race

The New England Bill Koch Youth Ski League Mission Statement: The mission of the Bill Koch Youth Ski League (BKL) is to introduce young people to the lifelong sport of cross country skiing, and the many associated health, fitness, and social benefits, in a fun, inclusive, and safe environment.

The Bill Koch Youth Ski League Teaching Philosophy: All Bill Koch Youth Ski League (BKL) activities and competitions are designed to teach young people to participate to the best of their respective abilities. The foundation of the BKL is centered on the belief that having fun is at the core of learning to cross country ski and that children can develop physically, psychologically, and socially in a safe, healthy, respectful, inclusive, and supportive environment.

NENSA and the Bill Koch Youth Ski League: The New England Nordic Ski Association (NENSA) is the parent organization of the New England Bill Koch Youth Ski League (BKL). NENSA provides support for BKL members and club leaders in the form of annual membership benefits, and a range of educational and competitive programs for individuals and clubs. BKL District Chairs form the BKL Committee of the NENSA Board. One of the members of the BKL Committee is the NENSA staff member who oversees NENSA's youth programming.

The NENSA Mission Statement: Share the joy of gliding on snow through educational, recreational, introductory and competitive programs to nurture and sustain an active cross country ski community for all ages and levels throughout the East.

Acknowledgements: The Bill Koch Youth Ski League (BKL) Leader Manual began first as a project by the US Ski Association (now US Ski and Snowboard) in 1990-1992. Working for the US Ski Association (USSA), with a grant from the Olympic Job Opportunities Program, Dorcas D. Wonsavage oversaw the first draft which was never published. We are indebted to Luke Bodensteiner, USSA Nordic Executive Director at the time, for graciously allowing NENSA to access these materials. In 1999, edited by NENSA Executive Director Fred Griffin at the time, the New England Bill Koch Youth Ski League Manual was finally printed. Since then it has gone through several revisions as caregivers/parents and leaders have requested more information, with a new edition published in 2022 by NENSA Youth & Introductory Program Director Kait Miller.

In an effort to make the BKL caregiver/parent/leader job easier and more fun, this Manual has grown to address many aspects of cross country skiing including how to teach it well and make it safe and fun. Many thanks go out to Zoe Erdman, Zach and John Caldwell, Michael Soules, Mary Anne and Jim Levins, Carol Van Dyke, Judy Geer, Frank Edelblut, Phil Savignano, Donna and Morgan Smyth, Caroline Mathes, John Farra, Fred Griffin, Kate and Bill Koch, Justin Beckwith, Amber Freeman, and Tom Weir. But first and foremost, we thank the BKL

caregivers/parents and leaders who, winter after winter, organize their kids and clubs and inspire, motivate, teach, and play on skis with their children. Since the caregiver/parent/leader is first to introduce children to cross country skiing, they are an important source of information.

This Manual is designed to assist caregivers/parents/leaders in setting up a Bill Koch Youth Ski League club. It provides guidelines and resources to meet the needs of a first-time organizer or of a person who is seeking to revitalize an existing club. We recognize that every club will evolve differently and will develop its own character. However, every child in every BKL club across the region should leave their club activity with the same sense of how much fun it is to cross country ski. That's a tall order, but don't let it intimidate you. Children know how to have fun on skis, and you read about in this Manual is directed at helping you make this happen.

The Manual will show you how to integrate competition into club activities, and how to organize and execute successful race events at the club level. But always remember, competitive activities must be securely grounded in the recognition that ***success is defined by effort, not victory***. Whether it is a learning activity, a game, or a competitive event, each child should be taught to compare their progress against themselves. The primary goal for this age group is simply to have fun, and instill a lifelong love of sport.

Dorcas D. Wonsavage June, 2005 (updated by Kait Miller, 2021)

Chapter 1: Starting Up

Creating something where nothing has existed before can be challenging. To help you, this Manual covers the step-by-step process of starting a Bill Koch Youth Ski League club and also directs you to other helpful resources.

NENSA: NENSA's website (www.nensa.net) is a great general resource and the first place you can go with questions. This Manual is available for free on our Youth Resources page (www.nensa.net/youth) along with many other helpful links and suggested reading material. NENSA staff can provide you with helpful contacts and advice. Individual and club NENSA membership can be activated or renewed through the website, and bulk club memberships can be processed by NENSA staff. Email staff@nensa.net or call 207-688-6503 for assistance.

New England Bill Koch Youth Ski League: The New England Bill Koch Youth Ski League is led by a committee made up of the following people:

- ***Committee Chair:*** Leader of the New England BKL Committee
- ***NENSA Youth & Introductory Program Director:*** The NENSA program staffer who educates clubs and coaches, and helps provide the framework for BKL development across the region.
- ***District Chairs:*** The District Chairs make up the BKL Committee and represent the clubs in their area. The districts in the East currently consist of:
    - Northeast Vermont (NEVT)
    - Northwest Vermont (NWVT)
    - Central Vermont (CEVT)
    - Southern Vermont (SOVT)
    - Eastern Massachusetts (EAMA)
    - Western Massachusetts (WEMA)
    - Maine (ME)
    - Northern New Hampshire (NONH)
    - South/Central New Hampshire (SO/CENH)
    - New York (NY)

On the local level, clubs are led by a Club Leader. Within each district there are a varying number of clubs, and each club has a club leader. The NENSA website (www.nensa.net/bill-koch-league-club-directory) lists contact information for all the people holding all the positions listed above, as well as each club leader. These people can share their experiences with you and help answer questions.

The Role of The Club Leader

The BKL Club Leader plans, organizes, and directs BKL activities at the club level. Skillful leaders delegate responsibility so not all of the tasks listed below need to be done by the leader themselves, but they do all come under the broad job description of a Club Leader:

- Plans or supervises the planning of all club activities
- Arranges the schedule and meeting place for club sessions
- Involves and coordinates caregiver/parent participation in the club
- Supervises and assists with enrollment and registration
- Registers the club with NENSA
- Is the liaison with the District Chair and Committee Chair
- Conducts and evaluates club sessions

Recruiting Volunteers: While successful Clubs have a leader or co-leaders, clubs are organized and run by a host of volunteers working under the leader's direction. Many volunteers will be caregivers/parents of club members, but help can also be found within your local ski, fitness, and service communities.

Where to Look for Help

- Town recreation departments, YMCA/YWCA, or service clubs etc.
- High school cross country ski program(s). Many high schoolers love to work with younger children and many of them may have younger siblings in the program. If you are fortunate, you may end up recruiting parents/caregivers, instructors, and participants in one contact.
- Ski shops, sporting goods stores, and cross country ski areas may all be interested in supporting a local BKL Club.
- Local NENSA members (NENSA staff can provide you with contacts)
- Teachers and physical education instructors, particularly in elementary and middle schools
- Local fitness centers and outing clubs
- Local email lists or Facebook groups

The Mental Side To Recruiting Volunteers: The first step in recruiting is understanding exactly what it is you are doing and what it is you are not doing. You are **not** selling anything. You are **not** asking for money. You are **not** being bothersome or imposing on people. You **are** providing a service to your community. You **are** giving people an opportunity to work with children in fun and exciting ways. You **are** giving caregivers/parents the chance to join their children in a health-affirming activity. You **are** giving businesses and service clubs a new means of interacting with their community. Be happy in your work. Feel good about what you are doing.

You are engaged in helping others! When you feel comfortable with this, you are ready for the next step.

When you begin to make connections, make them positive in tone and get right to the point. Some things you can say include:

- "I'm interested in starting up a cross country ski program for children. I'm looking for some help to get things underway. Don't worry about whether or not you ski. You just have to enjoy working with kids!"
- "Cross country skiing is super fun and it's an activity that can involve the whole family. It's safe and recreational, but offers competitive options for those who want them. It's educational, healthy, and environmentally sensitive. You're not going to find a better lifetime sport!"

Have a brochure or flyer to leave behind or to distribute via email. At a minimum it should include your name and phone number, but it should also have the date and site of your informational meeting. An informational meeting is your next step because once you've recruited a pool of potential volunteers, you'll need to educate and organize them.

Club Organizer Meeting: This is the first watershed moment in your efforts to start a BKL club. This is when you turn a collection of individuals into an organized team. What follows is a sample agenda for your club organizer meeting. Do your homework so that you have preliminary information to facilitate discussion at every point.

- The Reason for the Meeting
    - Introduce guests/volunteers
    - Explain the New England Bill Koch Youth Ski League and its parent group, NENSA
- Distribute printed materials
    - Explain the BKL Philosophy
    - Discuss starting a club; determine the will of the group
    - Outline club needs
- Choose facilities, both indoor and outdoor
- Inventory jobs and people to fill them
- Membership
    - Promotion and recruiting
    - Database management
    - Signing membership and liability release forms, and collecting money
    - Officer/leadership roles
    - Coaches, instructors, chaperones
- Equipment for kids and caregivers/parents (loans, rentals, special deals, etc.)

- Accessories (wax, first aid, game equipment, bibs, banners, trail markers, etc.)
- Grooming— how, who, when, where, with what?
- Travel: buses, carpooling, etc.
- Financial
    - Club fees, NENSA fees, and what they will cover
    - Sponsorship from local businesses
    - Competition fees and awards (if applicable)
    - Fundraising possibilities: silent auctions, bake sales, etc.
- Planning the Club Program
    - Outline goals
    - Assign duties
    - Compile list of action items and timeline their completion (who does what by when)

Recruiting Participants: At this point you've organized a working group. Everyone has assignments; things to check on and things to do. Of all the tasks which lie ahead, the single most important thing is to find children. It's pretty straightforward—no kids, no club. But before you begin to talk to people you need to do some planning. Be aware that there are three primary avenues through which kids learn about BKL and enter the program and three basic reasons why they do so.

How Kids Learn About BKL

- Their caregivers/parents
- Peers who are already in the BKL
- Their school and/or youth group

Why the Kids Come (and stay)

- Because it's fun and exciting
- Because their caregivers/parents share a love of winter and cross country skiing
- Because their friends do it

Targeting Kids for Your Club: Be aware that you will need to have the permission of those in charge of school and community groups before you promote your club to the children involved in them. You should probably start with the principals of local elementary or middle schools, but be prepared to talk to the school board, especially if you plan to use school grounds for club activities. Try looking for participants in:

- Youth groups such as boy/girl scouts, church groups, etc.
- School clubs
- Summer and fall sports teams

- Recreational centers
- Nordic Rocks (if your local elementary school has a program)

Promoting Your Club: No matter how many adults, children, and groups you contact personally, you still need to be able to promote your club and to advertise it in a wider arena. This means employing other means of communication such as:

- Social media
- Newspapers
- Email lists
- Community bulletin boards/forums
- Local businesses

If your club decides to register with NENSA as an official club, NENSA can help promote via the NENSA website and social media outlets.

Some Notes on Newspapers: Newspapers are still relevant, and many appreciate the personal approach. If you want your news release to make it to the local paper, whether online or in print, you should send it directly to the sports or events editor. Make sure to include all of the basic information that parents need, including:

- Time and place of practice
- Any associated costs
- Transportation needs
- Services you might require of them
- Equipment needs for their children

Chapter 2: Coaching Children

In this section we review the Children's Bill of Rights and the BKL Teaching Philosophy, and examine the roles of the Club Leader and caregivers/parents in implementing sound teaching practices. You will also be introduced to the guiding principles of BKL instruction which is learning by doing and centering instruction around the child's needs

Children's Bill Of Rights

- The right to participate in sports regardless of ability level
- The right to participate at a level appropriate to individual skill development
- The right to qualified guidance/leadership relating to present participation and future development
- The right to participate in a physically, psychologically, and emotionally safe environment
- The right to an equal opportunity to strive for success
- The right to play as a child not as an adult
- The right to proper preparation for an activity or sport
- The right to decide when and where they wish to participate
- The right to be treated with dignity by all involved
- The right to have FUN through sport

Bill Koch Youth Ski League Teaching Philosophy

The New England Bill Koch League Youth Ski League believes that children should have the opportunity to have fun while learning to cross country ski. The BKL believes in creating a safe and healthy environment where children can develop physically, psychologically, and socially. All BKL activities and competitions are designed to teach each young athlete to participate to the best of their respective abilities.

The coach-athlete relationship is a privileged one. The capacity for healthy growth and the potential for joy are enormous. However, it is also true that young people are vulnerable to disappointment, frustration, and feelings of inadequacy when participating in sports and thus children need to learn and perform in an welcoming, encouraging, and safe environment. Coaches and leaders should ensure that club practice and club activities are as welcoming, encouraging, and safe as possible so children can learn, grow, and have fun.

Learning by Doing: In the remainder of this section, and in forthcoming sections, you will be given a number of instructional guidelines to assist you in building your club program.

However, don't lose sight of the fact that the vast majority of children learn by doing and this should be your primary teaching style although you will need to make adjustments for children who learn differently.

Aptitudes, Skills, and Techniques: Aptitudes are talent areas. The development of aptitudes leads to the formation of skills. The aptitude areas involved in cross country skiing are balance, coordination, agility, imitation, flexibility, strength, and feel for the snow. Aptitudes are not developed and refined through teaching, they are learned, and they are learned by doing. In general, aptitudes are best learned and developed unconsciously through games.

Examples of skills and techniques involved in cross country skiing are herringbone/duckwalk, snowplow, double-pole, and step-turn, and are most effectively learned through imitation, self-application, and games that highlight a particular skill or technique. Actual instruction, such as point-by-point teaching, is the least effective way to teach a technique or skill and this is more true the younger and less experienced the child. Essentially, children who develop their aptitude areas through play and exposure to others who ski well will ski better than children who are "taught" to ski. The first group of children will intuitively grasp the rhythm and flow of the sport. When the time comes they will assimilate technique, and integrate it smoothly into their skiing style. The child who is "taught" to ski will tend to see the sport in terms of mastery of a repetitive series of wooden movements. They will tend to ski mechanically and robotically.

To conclude, the development of aptitudes is the primary mission of BKL instruction and the refinement of technique is of secondary importance.

The Role of the Teacher or Coach

There is no single method that will work for everyone who coaches and leads children, but effective coaches share some traits and skills such as:

- Knowledge of what they are teaching
- A fundamental empathy for all student levels
- Some understanding of what it takes to motivate people

Individualization: The best coaches recognize that every group is a heterogeneous collection of individuals. When possible, they modify methods of instruction and levels of expectation for each member of the group depending on their skills, talents, and personal goals. Ideally, each member of a group should have their own program. While this isn't always practical, the thinking behind it is critical.

Separation: A coach has to separate the child from the sport. There are no skiers at a BKL session; there are children who ski. Some serious young athletes need to be reminded of this

every day. If they aren't, their self-esteem can become tied up in what they do on skis, not who they are as people. Their path of reasoning could go from "I was no good in the game we played" to " I am no good." The coach must never stop sending the message that all children are winners just by participating

Safesport and Background Checks

Background Checks: Our mission at NENSA is to sustain a healthy cross country ski community in the East. We support our clubs who in turn work with the young people that are the future of our sport. Clubs range significantly in size with some fully or partially staffed and others run entirely by volunteers. As an umbrella organization for clubs, NENSA is not involved in the hiring and screening of every coach and volunteer. However, we do believe that screening candidates who come into contact with young athletes is of paramount importance. We strongly urge all of our clubs to implement background check procedures on a yearly basis for anyone coming into contact with children whether they are coaches who are at every practice or volunteers who help out every few weeks.

There are many affordable resources available for background checks through state agencies and private companies that search the National Center for Safety Initiatives (NCSI) database. If you need help finding the right place to look, please feel free to contact the NENSA staff (staff@nensa.net) or check this background check page on our website for links to your state's background checking service: https://nensa.net/background-checks/.

SafeSport: SafeSport is an online training module aimed at providing education to adults in positions of power in order to promote a safe and healthy environment for minor athletes. NENSA requires all of our staff, board members, and trip staff to complete SafeSport training and we urge all of our member clubs to require the same thing of their coaches and volunteers. The training can be accessed at https://safesport.org/.

Every NENSA member must report suspected violations of the SafeSport code (https://uscenterforsafesport.org/response-and-resolution/safesport-code/). If you suspect that a child is experiencing misconduct of a sexual nature, don't investigate the situation yourself. Call the SafeSport hotline and local child protection authorities (police or child welfare office) and report it to the experts who have the skills to investigate the matter. If you have a doubt on whether conduct is occurring, err on the side of reporting.

The Center for SafeSport provides 24-hour support by calling 866-200-0796.

"Education and awareness are the most critical components to creating safe and respectful sporting environments, free of abuse and harassment. Prevention starts with the leaders of the team- the coaches, the athletes, the trainers, the doctors and mentors. Even the parents." - U.S. Center for Safesport, 2019

Coach - Athlete Relationships

Healthy relationships between coach and athlete should have a basis in friendship, trust, and mutual respect. Athletic performance and athletic outcomes should in no way affect the relationship; the most athletically-gifted child should receive no more time, respect, attention, or encouragement than the most athletically-challenged. Superior athletic skills are in no way correlated to superior character. The bottom line is that a coach cannot provide emotional or psychological rewards to an athlete based on talent or skill development.

Modifying Teaching Styles to Match Learning Styles: While "Learning by Doing" works well for most children most of the time, some children (and adults) will require more specific information, different examples, or more support to learn what is being taught. Watch for children who are confused and look to you for more help. Watch for children who are just going through the motions but don't have a "feel" for the activity. And, of course, watch for children who just aren't getting it. Whenever possible keep groups to **no more than 10 children** and have an assistant on hand who can give more direction or different examples to someone who isn't mastering the lesson. You may also want to have the assistant work briefly with the whole group while you give one-on-one or small group instruction to children who are struggling to learn-by-doing.

Learning by Watching: Most children love to see themselves in videos. Video recording can be part of many learning activities, and can easily be done on smartphones. However, be wary of over-analyzing the children. Let them do the analysis once you've made your point and encourage them to ask questions.

Leadership Style: The best leader commands **and** empowers. To create a safe and effective teaching environment, boundaries must be set and standards of behavior must be established in a fair and consistent way. These messages must be sent firmly and clearly right from the start of your program. Express that when safety and proper behavior are observed, friendship and mutual respect can flourish. Children can provide their input on many matters, including leadership, and work together with leaders to create a supportive, safe, and nurturing learning environment.
In the remainder of this chapter, you will find three essays detailing coaching best practices and tips for caregivers/parents, leaders, and volunteers.`

Creating a Supportive BKL Team Culture

Adapted from "Adventure to Excellence" from Jamie Hannon, Professor of Adventure Education, Plymouth State University

We ask our BKL Athletes to face risks every time they ski, and these risks are mostly risks of a *social* nature (e.g., looking foolish, trying then failing publicly, falling down in front of friends, disappointing coaches or family members, etc). Physical risks are mostly minor, although are often used to mask the actual social risks.

Fear of these risks undermines athlete learning and prevents optimal performance. Brain-based learning theory suggests that a person learns best when in a relaxed and moderately stimulated state. Fear prevents this learning because the fear centers of the brain (mostly the amygdala) prevent the normal memory pathways from forming. This blockage occurs just as quickly in physical skills as in cognitive skills.

If we want our athletes to continue to learn new skills and to perform at their best then we need to minimize these social risks and create an environment where there is a community that supports healthy risk taking.

The key ingredients in promoting this supportive culture:

- Spend the time – especially at the beginning of group formation, but regularly throughout the season.
- Open the dialogue – openly discuss the notion of a team culture that supports growth, and prioritize it as a team goal
- Model the behaviors – praise risk taking and other compassionate/caring behaviors; also, regularly show yourself taking social risks (like acting goofy, or trying a skill that you truly might not be able to do).
- Names - make sure every athlete knows every other athlete's name; it is the foundation of group civility!
- Ice breakers – also known as deinhibitizers, these "games" break down social barriers, allow athletes to experiment with looking less-than-cool, and are a chance for the coach to assess each athlete's level of social comfort in the group (See the Games chapter on page 80).
- Trust and trustworthiness activities – a focus on how we demonstrate trustworthiness, and how we can critically assess another person's trustworthiness.
- Develop group norms – *this is a fundamentally important element*, basically a social contract that defines behaviors that the group wants to promote and others that it wants to leave behind. Sometimes called a "Full Value Contract." Often comes in two stages: first is a simple top down set of rules from the coaches (e.g., the "Five Finger Contract"). Second, after the group has had a chance to work together for a little while, is a more in-depth discussion that produces a document, generated mostly by the athletes, that has more impact, credibility and longevity than the top-down norms.

- Activities and reflective discussion – intentional discussions in which the group processes how they are upholding their group norms. Can be based on everyday experiences, or can be used as a follow-up to classic experiential learning games/initiatives/activities.
- FUNN (Functional Understanding Not Necessary) – purely silly games, that are pretty much just for fun, but for the coach also provide an excellent barometer of the group culture, and of individual participants' comfort levels. The ability to act completely silly in front of one's peers is a good measure of the degree to which a person's social fears are managed.

Why take the time? What rationale is there for spending limited team or league training time on these practices?

- Faster development of physical skills – athletes learn best when their fears are managed; human neurobiology prevents learning when faced with unmanaged fear, and social fears are usually more real and more powerful than most physical fears.
- Better retention of athletes in the program – the single biggest predictor of retention in youth programming is *not* athletic success; it is the degree to which the athlete has developed a meaningful social network (feelings of connectedness, supportiveness, closeness/intimacy).
- Greater development of social and emotional intelligences, which are essential elements of personal and group leadership.
- Simply because it develops more thoughtful, compassionate, caring, and socially capable human beings!
- Because it will make the BKL experience, and the ski experience in general, more FUN!

Coaching Best Practices

Adapted from "Coaching Thoughts, Coaching Questions" by Michael Soules

Effective teaching boils down to:

- Making observations
- Interpreting those observations (making sound decisions based on motor development, motor learning information, and child feedback)
- Making decisions based upon one's interpretations

Best Practices and Things to Consider:

- Know the children's names. No excuses!
- Children can only take in so much information; young children take in even less.
- General feedback is good, but specific feedback is better. ("Good job" is nice, but "much better weight shift" is better.)
- Be prepared to give feedback right after giving feedback.
- Monitor the number of "tries" a child makes.
- Do you teach the way YOU learn? If so, what about the children who learn differently from you?
- Where does critical thinking on the children's part come into play? Are there things we know that we want them to discover?
- Are all the kids using the same kind of equipment? How do you know?
- Ask the children how a practice/lesson went: Well? Not so well? Why?
- Ask yourself if the lessons flow from one to another. Why or why not?
- Have an Emergency Medical Plan; bring other people in on it.
- There are times when, unfortunately, kids must be removed from class. Follow-up is important.
- End the day on a good note. Bring up behavior concerns at the beginning of a practice.

Do's and Don'ts for Working with Children

Do:

- Be flexible, patient, enthusiastic, supportive.
- Create a "safe" environment for children where their efforts are praised and where their failures are never ridiculed.
- Let children ski as much as possible at every practice.
- Keep variety/creativity at the heart of every practice.
- Explore new terrain and skiing sites.
- Make adjustments to plans during practice based on weather and child interest.
- Only provide **brief** verbal instruction.

- Look in the children's eyes. Their eyes will tell you when you are talking too long.
- Give positive feedback from the first moment to last moment of practice.
- Watch each child for signs of fatigue, chill, or injured feelings.
- Ask the child, what does it feel like to them?
- Encourage children to focus on their development and not on the progress of others.
- Encourage respect for the environment.
- Make it clear that good sportsmanship, respectful conduct, and appropriate language are necessary to be part of your group.
- Always focus on effort as the measure of success.
- Encourage each child to say something positive about themselves before, during, and especially after a practice or a race.

Don't

- Be sarcastic for any reason; there's always a more effective approach.
- Create a "stage" where one child is on display.
- Give long explanations.
- Let the children get cold.
- Force an unwilling child to participate.
- Allow children to treat each other in verbally, psychologically, or physically abusive ways.

Caregiver/Parent Involvement

Family involvement in cross country skiing is relatively and caregiver/parent participation is a cornerstone of the BKL. It is not a coincidence that the children who stick with cross country skiing are those whose caregivers/parents come to ski with them, or come to watch them ski or race. Without the cooperation and involvement of caregivers/parents on all levels, a BKL Club will struggle to succeed.

Responsibilities of Caregivers/Parents

- Transport children to and from club activities. Be part of a car-pooling team, if possible.
- Be sure children have the proper equipment, clothes, snacks, and water.
- Be supportive and encouraging.
- Participate in club activities as much as possible.
- Encourage the efforts and progress of all children, not just their own children.
- Assist the club leader and coach in encouraging, safe, and responsible behavior.
- Encourage respect for others and for the environment.

Caregiver's/Parent's Role in Club Activities

- Never force a child to race.
- Remember that children ski for their enjoyment— not for their caregiver's/parent's enjoyment.

- Encourage their children to measure their own progress and not to compare themselves to others.

Coaching Multi-Level, Multi-Age Teams and Clubs

by Fred Griffin

I hear it from both sides. I hear it from coaches frustrated working with athletes of varying ages in middle school/high school programs, or from BKL Leaders in despair over dealing with the even wider BKL age group, 4 – 13.

"Some want to race. Others just want to socialize. What do I do?"

"I can deal with the committed ones, but it's so hard to motivate the others…"

I hear it from parents and kids alarmed by coaches who don't run a program that meets their needs or their children's needs.

"Suzy doesn't want to race! She joined BKL because she loves to be outdoors with her friends and ski. She hates this…"

"I want to be the best skier I can be. I want to race in college. Coach is making us all do the same thing. It's too easy. I need more! But he says it's for the good of the team."

What is sad is that everyone wants the same thing: kids to have fun in a rewarding sport they love. So how do we get there? How do we please Mom, Dad, coach, athlete? For many years I've been coaching clubs and schools with kids ranging in ages from 10 -19 in the sports of tennis, running, and cross country skiing. Quite honestly, we don't have this problem. Below is my philosophy.

1. One Size Does Not Fit All.

A team is an aggregate of individuals. Each athlete has his or her needs. Maybe it is my years of teaching kids with disabilities, or maybe a lifetime of being an unrepentant misfit—but it is very clear to me that when it comes to sports, each athlete deserves to be on thir own IEP: Individual Exercise Program. Shift your thinking and stop fitting the kids to the program— fit the program to the kids! I know this goes against "old school", ball-sports theory, but do anything less and you are diminishing the chance for every child to succeed.

On our middle school/high school team we have kids who are loose-limbed bundles of tender growing plates, not ready for hard training physically or mentally. We have kids who show up tentative, who can't look past just wanting to be more fit. Competition and hard workouts are a terrifying prospect unless and until they slowly transition into new bodies. We have kids who are highly motivated but who don't report in shape. They have to be let off the leash gradually or

they will injure themselves in their zeal. And of course, we have kids who know the drill, who come in fit, hungry, ready to eat raw meat.

In BKL groups this translates into first year skiers tentatively checking out a new sport on borrowed fish scales, fit kids who have no interest in racing but can live in the woods, and children of current or former racers who arrive on top end gear looking for high-powered action If every child is run through the same program it is either too hard or too easy for those on the other side a relatively narrow cross-section. The fit and motivated kids become bored and frustrated and act accordingly. The less fit are unable to keep up, and feel shame or dislike for themselves. They tend to be scorned or patronized on some level by their more fit teammates—that is, if they don't quit after two weeks. Meanwhile the coach is overwhelmed trying to see some kids don't slough off and trying to keep other kids in line. Clearly, one size fits all thinking creates unhealthy dynamics up and down the roster. The good news is that there is a way out of this mess. Read on.

2. Have the Kids Set Goals.

Goal-setting is at the heart of the coach/athlete relationship. The expectations that the process creates in both parties constitute an informal contract. The terms of that contract take form in athlete's training program and in the coach's part in implementing it. We make this a formal process on teams I coach. An interview follows. For BKL kids it is most often only an interview. I give older kids a deadline for return of the goal sheets. After that, no sheet, no practice. I make them focus on what they want to learn or to change—not on where they think they should finish, or who they should beat. We race with our teammates, not against them.

When I know what they want from the sport, the season, I know how to coach them. Where to push, where to pat. Practice time is too precious to spend forcing square pegs into round holes. It's also painful for the pegs. After all, I'm there for them—they aren't there for me. Right? And a team is an aggregate of individuals, right? I find the Success Chart we offer to Club Leaders (on page 77) is an excellent goal-setting template for BKL kids. It also provides a seasonal lesson plan with multiple tracks offered each day. It binds a club program with a sense of purpose as well.

3. Set-up Different Programs or "Pathways" for Each Practice.

From the goal sheets I learn how the team settles out and I correlate this to what I have seen of the kids fitness-wise. For this year's group of thirty kids ages 11 – 18, I started with five 5 groups. I posted a list of who was in what group and hung it on the wall. If anyone was unhappy we would have gone back to goals sheets and talked it out. No one was. Each day while the kids were dressing I posted the day's schedule on the blackboard thusly:

Everyone: warm-up, stretch, double pole lessons; afterwards by group
Wolverines: ski through the woods trail and double pole the two small hills on backside; total ski 30 minutes then you are on your time.
Jaguars: 15 minutes double pole only; ski 30 minutes more. Finish with 6 x 40 second double pole repeats superfast, on soccer field
Civet Cats: double pole 30 minutes; ski 30 more; 6 x 20 second double pole repeats on the hill beside the soccer field
Bobcats: 30 minute double pole, 10 min single stick, 35 minute ski afterwards; 10 x 20 second power pole on soccer field hill
Everyone: Game at 4:45pm on soccer field
For a BKL practice I prefer not to place kids in groups but instead to offer elective activities.
Everyone: warm-up, stretch, game; lesson on double pole
Activity #1: ski tour looking for animal tracks; remember to double pole on flats
Activity #2: double pole relay followed by free ski with lots of double-poling
Everyone: finish with game
I add in specific activities from the Success Chart. I expand on Success Chart offerings (see Success Chart on page 77).

4. Provide Freedom to Change Workout Groups.
This is the beauty of the program. Recovering from a cold? Drop down one group or two. Feeling energetic? Go up one and try it on for size. The only rule is you need the coach's approval. If a person is not performing to a chosen group level, I take the athlete aside and ask if their goals have changed. They move to an easier workout if they desire. This almost never happens. Movement is upward, just in the direction you as a coach want it to be. Wolverine Suzy will ask to be a Jaguar for a day, then another. Pretty soon Suzy is a Jaguar. Most years if I start with five groups, I end with three.

5. Performance-Focused Coaching.
Granted, this is an athlete-centered as opposed to a team-centered model, but year after year it produces a community, a tight-knit caring team, second to none. Because each athlete is judged by their own criteria, every child has respect for every other child who makes an honest effort. The program is performance-based, and not outcome-based. It's not what we do but how we do what we do that is the focus. As a coach of a performance-based team you are making it possible for each of your athletes to pursue personal excellence.

You are creating a nutrient-rich environment in which kids can grow. Team excellence follows organically. This may translate into one skiing 5k without stopping or it may result in another being state champion or making the Junior National Team. It may mean a BKL Club that

succeeds as a group because its skiers succeed as individuals. You have made room for both children and both visions—and the point is that there must be room for both.

Chapter 3: Long Term Athlete Development

Long Term Athlete Development and the BKL

Long Term Athletic Development (LTAD) refers to the framework of athlete education and development that can be used to teach caregivers/parents, coaches, and administrators optimal ways to educate and develop high-performing athletes. LTAD focuses on developmental rather than chronological age and links athlete education with physical and psychological growth, as opposed to calendar years. Developed in part by internationally recognized coach educator Istvan Balyi, the LTAD model aggregates widely accepted principles of athletic development that have been the basis of physical education for years.

US Ski and Snowboard (USSS) defines LTAD as the "managed developmental progression for an athlete that will both maximize their long-term potential and enjoyment in their sport." The idea behind LTAD is essentially what BKL clubs have been doing for years: letting kids have fun while learning how to cross country ski, and focusing on the basic building blocks of movement before focusing on specific skills. As mentioned in Chapter 2, the development of aptitudes is the primary mission of BKL instruction, and the refinement of technique is of secondary importance.

The goal of LTAD and the BKL is not necessarily to create high performing athletes, but rather to create healthy, active individuals who know how to move well and enjoy being outside. We want to create a healthy community of young people who will love their sport, and want to stay involved after they complete BKL. To do this, children must develop what is known as physical literacy. Physical literacy is just what it sounds like, learning how to move well and put together the basic building block movements that make us human.

Physical literacy involves learning the **ABCs** of **agility**, **balance**, and **coordination**, so that children can have the ability to move confidently and appropriately during their chosen sport or activity. Science shows that when children become more competent, they participate more vigorously, play longer, and perform better. As a caregiver/parent of a young child, it is imperative that you put them in an environment that teaches the basic movements and skills of physical literacy. This does not mean only organized sports programs, but also backyard play, running and jumping at the playground, swimming or sledding with the family, or biking with friends.

The goal of LTAD is to create healthy, active individuals for life

The Long Term Athlete Development Model: The diagram on the previous page is a visualization of the Long Term Athlete Development model showing the transition from BKL up through lifelong participation. By the end of the BKL years we want all children to have developed physical literacy before moving onto whatever comes next. Some children will transition to the next level of racing, which could be training with their local club for Eastern Cup races, or joining their local high school team. After the junior level, some children will go on to another level of racing which could be college or an elite team. At each level, a large group of children will choose not to continue onto the next level of competitive involvement. This is totally fine! These children will have developed physical literacy, and will hopefully enjoy skiing enough to stay involved recreationally.

Stages of Long Term Athlete Development

Adapted from "Is It Wise to Specialize?: What Every Parent Needs to Know About Early Sports Specialization and its Effect Upon Your Child's Athletic Performance " by John O'Sullivan

The LTAD model applies to athletes of every age, not just BKL participants. From a developmental age viewpoint, there are seven stages of LTAD starting with pre-BKL. Below we will go through those stages, focusing most heavily on the first three stages up until age 12.Up until that point, caregivers/parents are at the forefront of promoting physical literacy.

Some kids figure out the basic movements and skills on their own, but others do not and must be taught and encouraged to learn and play. Introducing and training the correct skills at the correct times of development allows both kids and adults to become active and stay active. **It's important to remember that the ages given in this chapter are general guidelines. Every child develops differently and there is no way to definitively say what will happen at a given age!**

The Seven Stages of LTAD

1. Active Start (ages 0-6)
2. FUNdamentals (girls 6-8, boys 6-9)
3. Learn to Train (girls 8-11, boys 9-12)
4. Train to Train (girls 11-15, boys 12-16)
5. Train to Compete (girls 15-21, boys 16-23)
6. Train to Win (girls 18 +, boys 19 +)
7. Active for Life (any age)

Stages 1-3 are when children develop physical literacy. In these stages it is important to teach movement and sport fundamentals before children reach puberty so that they have the basic skills needed to remain active for life. Those basic skills provide a foundation for elite-level

competition at the older ages if that is the path the child chooses, or provides the building blocks towards being an active healthy adult.

Stages 1 & 2: In Stages 1 and 2, kids should be changing activities seasonally to avoid burnout and boredom. These activities can be structured but should still focus on FUN; competitive games and matches should be kept to a minimum. Kids begin to read the game going on around them and thus can make decisions, and movements based upon what is happening during the match. Let them see the game, and try not to see it for them! These are times when children are sensitive to developing agility, balance, coordination, as well as hand and foot speed through fun activities and games, and not necessarily training regimens and drills. Every sport can develop these skills, and even a soccer coach can be working on catching while jumping, running, and doing forward rolls. If your child has a preferred sport, there is nothing wrong with them participating two to three times a week, but make sure they are doing other sports or activities three times a week as well. This well-rounded approach helps to master all aspects of physical literacy and keeps the child excited and engaged.

Stage 3: Stage 3 is an age where children begin to convert their foundational movements into basic sports skills. This stage is called the "Golden Age of Learning." If you think about it, this makes perfect sense as this stage comes to a close when the child hits puberty, the growth spurt occurs, and there is a temporary loss of coordination and motor control. This is the best time to learn sport-specific skills as the child is still in control of their body and can see daily and weekly improvement from their hard work. This is the sensitive period of accelerated skill development and must not be overlooked or shortchanged by overemphasizing competition (as often happens). The emphasis should continue to be on more training and less competition, with at least a 2: 1 or 3: 1 practice to "game" ratio. This is a great time to develop strength, flexibility, and some stamina, but through relays, games, and fun races instead of physically demanding regimens.

One very interesting thing to note about this stage is that it can be either a great advantage or disadvantage to a late-developing athlete. With excellent coaching, in a proper development environment, a young athlete who hits puberty later than their classmates has a longer period in which to develop fundamental and sport specific skills. They remain in the "Golden Age" longer than their peers, and if they take advantage of this extra time, their technical skill base can surpass the early developers. Unfortunately, it is common that late developers are overlooked for select-level sports teams simply because they have not grown enough and are therefore not as strong or fast.

The current overemphasis on competition at these young ages funnels out these late developers as coaches pick the biggest and strongest players for success in competition. This is a worrying

trend because studies show that the late developers who are kept within the high-level training regimen become better long-term performers because of a better skill base. If your child is in this stage, and they are a late developer, make sure they are in the right coaching and developmental environment. They should continue to focus on their skills and not things like strength and speed, which will come naturally a bit later.

Stages 4-6: Stages 4-6 begin to focus on the elite training of athletes. Remember that not everyone will follow that path, and some children may jump from Stage 3 to Stage 7 (Active for Life). For the children who choose to focus on training for a specific sport, Stages 4 - 6 are when the development of each athlete is maximized. Stage 7 is focused on taking these properly developed athletes and making them lifelong participants in recreational and competitive sports.

Let's Play: Remember playing outside until someone called you into dinner? Remember falling down, getting snow down your neck, and laughing? Remember making snow angels, igloos, and tunnels until your snow pants were soaking wet? Remember coming in breathless from a game of tag? In the "olden days" most outside play time was un-**adult**-erated, and not subject to the level of planning involved in most kids activities today.

Nowadays, the after school play is controlled by adults, mostly out of necessity. It usually requires a car and an adult-organized sport. Bob Bigelow, who played for U Penn's Ivy League championship basketball teams ('73, '74, '75) and the NBA for four years, is the author of the book *Just Let the Kids Play*. He points out that "When adults set up structures and systems for their children they looked at the only models they knew: varsity high school, college and professional sports. With adults at the helm, youth sport programs grew exponentially." However, with adults at the helm some of the elements of fun and freedom in youth sports are lost. It's important to remember that youth sports, especially skiing, are about having fun with friends, playing games, and being active. Skiing is a means, not necessarily the reason, for being outside in the snow. The Bill Koch Youth Ski League should make fun, snowy memories for your children this winter and every winter.

The involvement of adults in childhood exercise has resulted in several issues:

- We organize child play to be like the adult play we remember from high school or college
- We demand adult-like physical and emotional responses to sport
- We take the games and play out and put in drills and competition

Not only is the fun of sport lost, but so is an integral part of physical, mental, and emotional development. Without the chance for their bodies to learn necessary physical skills, or their

minds to discover a love of sport, it's no wonder so many kids drop out, burn out, and leave sport and exercise as fast as they can.

Growing Up Should Be A Game: In the preface to his book, *Total Training for Young Champions*, Tudor Bompa, Ph.D. bridges the gap between research and application, and supports the idea of a long-term approach to children's physical development and training. Bompa's research supports the core philosophy of the New England Bill Koch Youth Ski League, and some of the key points of the Children's Bill of Rights (see Chapter 1 on page 9) which are:

- All kids should have fun while learning to cross country ski.
- They should be in a safe and healthy environment where they can develop physically, psychologically, and socially.
- They should participate to the best of their respective abilities.

Two key excerpts from Bompa's preface are below:

> "Childhood is the most physically active state of human development. Children like to play games and participate in physical activity and sports, and they certainly like to compete. Coaches often become role models, and children dream of surpassing the achievements of Michael Jordan, Kurt Browning, Joe Montana, Tara Lipinski, Carl Lewis or Nadia Comaneci. It is, however, a grave mistake to submit children to the training programs of adults."

> "Children are unique at each stage in their development, with differing physiological capabilities at each stage of growth. The physical and psychological changes (at times abrupt) that occur at each stage are accompanied by critical behavioral transformations. It is important for anyone working with children to be well informed regarding all the physical, emotional, and cognitive changes they go through during the development stages, and to structure training that is best suited at each stage." (Bompa, p. ix)

Specialization

When children specialize in a sport, it becomes the one sport that they participate in and train for year round. This goes beyond simply having a favorite sport, or adding in sport specific training in the off season to whatever else a child is doing. When a child specializes, all other sports and activities are pushed aside. Specialization is not necessarily a bad thing, but it needs to be timed correctly in order to avoid negatively affecting a child's development.

There is a trend today to push children to specialize early. Whether it is a year round ski training program, a club soccer team, or a travel basketball league, kids are increasingly dedicating their time and energy to one sport at an early age. While the intent may be good - helping a child

become the best they can be at a sport that they love - caregivers/parents must remember that children should learn to move well before they can learn to ski well (or play soccer or basketball well). The **ABC's** of agility, balance, and coordination, and the development of physical literacy, are the building blocks of high level performance. These skills are not learned through sport specific focus, but rather through what is known as **multilateral development**.

Multilateral development boils down to participating in multiple sports or activities until a child is developmentally ready to specialize. By taking part in a wide range of activities, children have more time to develop the broad motor and cognitive skills needed to develop physical literacy. Multilateral development (also known as sport sampling) not only helps children become better all around athletes, but also helps them to have a more enjoyable sport experience by having the skills to be able to take part in a wide range of social and athletic situations (recess, free play, pick up games, etc).

By learning to move well and have fun before dialing in sport-specific techniques, children also stay healthier by avoiding overuse injuries. A study of 1,200 youth athletes by Dr. Neeru Jayanthi of Loyola University found that early specialization in a single sport is one of the strongest predictors of injury. Athletes in the study who specialized too early were 70% to 93% more likely to be injured than children who played multiple sports.

When to Specialize: To figure out when it's time for a child to specialize, it's important to find out first if they even want to do so. Outside pressure from parents and coaches can negatively impact the youth sports experience and make training and competition stressful instead of fun. So if you are a parent pushing your child to take that next step and start training for skiing more seriously, remember that specialization might not be what's best for your child. Perhaps they enjoy cross country skiing more for its amazing social aspect or they simply enjoy being outside in the snow!

The second thing to remember is that all children are in a different place developmentally so there is no clearly defined age when you can say "now it's time to specialize." Generally somewhere between the ages of 11-15 for girls and 12-16 for boys (Stage 4 of LTAD) is when children are ready to start training seriously for their chosen sport. Think about the term "chosen sport" which implies ownership and is a decision that needs to come from the child. Specialization will start to happen naturally when a child is ready. They will truly enjoy their sport and want to take it more seriously. By waiting until your child is ready to focus on one sport you will help set them up for a more successful path of athletic development, and help keep the sports experience fun.

"Time for Romance": In 1985 Dr. Benjamin Bloom collaborated with other researchers from the University of Chicago on a study to understand how world-class talent was developed. The 120 subjects in their study included concert pianists, sculptors, tennis champions, Olympic swimmers, research neurologists, and mathematicians. Their results showed that successful individuals have similar learning and development phases which they called the Initiation, Specialization, and High Performance phases.

Bloom noted that these same phases had been identified as early as 1929 by educational researcher, Alfred North Whitehead. Whitehead divided learning into three distinct phases: Romance, Precision, and Integration. The BKL years encompass the Romance Phase, which is "characterized by play, exploration, fun, and a time when children learn fundamental skills and develop a love for their chosen field, be it sport, music, art or academics." (Gibbons, "Development of Excellence") It is also a time when their first teachers and coaches inspired in them a love of the sport or activity, taught them the value of hard work, provided many opportunities for success, and provided immediate rewards.

Everyone is an Athlete at Some Time in Their Life

- Two children who are the same chronological age could be as far as two to six years apart developmentally.
- In a group of 10 year olds, there are kids who are biologically 6 years old and biologically 13 years old. Do you ignore the "6 year old" and lavish attention on the "13 year old"?
- Only 25% of kids who excel as juniors are still in their sport as adults.

Consider Michael Jordan, who was cut from his high school varsity basketball program as a sophomore. Jordan grew six inches between his sophomore and junior seasons in high school, kept growing at UNC and went on to become perhaps the greatest player in the history of the game. "I had no idea that all this would happen," his father told the Chicago Tribune in 1990. "If I had, I might've pushed him too hard and screwed it up. As it is, everything happened very naturally."

Robert Malina, retired director of the Institute of the Study of Youth Sports at Michigan State University, concurs. "Early identification of 'talent' is no guarantee of success in sports during childhood let alone during adolescence and adulthood. There are simply too many intervening variables associated with normal growth, maturation and development and the sports system itself."

Age Sensitive Development of Youth

by Stuart Kremzner, "Training is most effective when it stimulates maturing abilities rather than those already matured" (Drabik, 1989)

Teaching young children skills and ski movement patterns can be optimized with the application of some basic motor learning principles. Improving their overall athletic development can also be optimized if we integrate the principles of age sensitive development. Age sensitive development refers to periods of time in a youth's life where they are much more receptive to developing certain fundamental neuromuscular skills (balance, timing, rhythm, coordination, and speed of movement). If the child is stimulated with a given element in this receptive time, they will develop this skill much more rapidly. When this is done there are very rapid biomotor and physiological adaptations of children when stimulated/trained at highly receptive age ranges.

The largest amount of neuromuscular development in youth occurs between the ages of 3 and 16 in the nervous system. This is the optimal period for balance, rhythm, motor engram, speed, and power development. These are known as the child's "Golden Years." Since the nervous system controls all of the functioning of our muscles, we have a great deal to benefit from this. For example at ages 9-10 females are much more responsive to balance training. If we develop and train these elements, the body adapts at a far more rapid rate in this dimension

.

The major reason for the application of these principles is that it will lead to much greater advancement and development of foundation abilities in young athletes. **When we train athletes in more receptive periods we make gains over months that would normally take years at a different age. Doing so optimizes:**

- Neuromuscular development
- Physiological development
- Strength development
- Injury prevention
- Rapid development of foundational skills
- Plasticity

An increased focus on neuromuscular development of young athletes will also improve the foundational skills of Agility, Balance, and Coordination (the ABC's of LTAD).

Skill Development and Motor learning

Development of a motor skill is dependent upon several variables:

1. The complexity of the skill
2. One's base level of learning, and

3. The level of motor development one has.

For a child to learn a simple skill, it takes about 2-3 months to learn. Learning a complex skill takes about 2 years. Perfection takes an infinite amount of time.

The acquisition of a skill does not occur at once, but rather through four phases. During the first phase, due to poor neuromuscular coordination, useless movements occur. Coaches should not misjudge the lack of neuromuscular coordination as insufficient talent potential, but rather as a physiological reality. During the second phase, movements are tense. In the third phase the motor skill is established through adequate coordination of the nervous processes. Thus, the skill or the dynamic stereotype is formed" (Krestovnikov, 1951 in Bompa, 1990). The fourth and final phase of skill development is the mastery of the skill which is "characterized by performing fine movements with high efficiency as well as the ability to adapt the skill to eventual environment changes" (Bompa, 1990). Learning of the skill takes a great deal of time and practice i.e. thousands of repetitions. This is what takes the skill from a cerebral level, (thinking about the technique as you do it) to the cerebellar level (having the motion become automatic or reflexive). 39

Due to neural factors it is important for the coach to know how to manipulate the neural load for skill development. Since skiing has such a large balance component, manipulating the proprioceptive load variables is a good means of teaching/improving balance and accelerating the learning process. One way to improve one's balance is to increase the proprioceptive load by removing one of the elements of balance. One's balance consists of neuromuscular feedback, the visual field, and vestibular motor feedback. Removing one of those factors increases the load on the other variables. Hence doing balance drills with eyes closed will create a higher load on the other senses.

Another means of training this is to change the feedback characteristics of the environment by making the environment variable. This can be achieved by doing balance drills on the sand, snow, or in bare feet. Last, but not least, try knocking the athlete out of balance through the tossing of a ball, or pulling on the torso or a limb with a theraband.

Motor Skill/Technique Development: The "Golden Years" of development are the optimal times for motor engram development and patterning of motor skills. This is not to say that at later ages this does not happen, but the acquisition of the motor skill will take longer at older ages.

Sensitive Periods of Coordination Training

- Balance: Age 10-11 in males, 9-10 in females
- Movement Adequacy: Age 8-13
- Kinesthetic Differentiation (the ability to correctly estimate differences in form, timing, distance, and strength modulation): Age 6-7 and 10-11
- Reaction Time: Age 8-10
- Rhythmic Motion: Age 9-10 in males, 7-9 in females
- Spatial Orientation: Age 12-14
- Synchronization of Movements in Time: Age 6-8

Practical Application of these Training Principles

- For optimal adaptation, need to have 2-3 sessions per week
- Many of the exercises can be used as a warm-up
- The exercises are best done when well rested
- Sessions only need to be 15-30 minutes long

The key is to keep it fun! Whether these exercises are integrated into the warm-up or a workout, it is best to keep the kids moving the whole time. Intersperse high level activity with stretching or flexibility rest phases. The following chapter has examples of workouts and exercises.

Suggested games include (see game descriptions on page 80)

- Simon Says
- Follow the Leader
- Most number in time
- Relay races

Speed, Power, and Strength Development in Young People: Development of speed, power, and strength in young people are all neuromuscularly based and therefore the same concepts as above apply. Many of these drills and exercises overlap so a drill for rhythm can also be used for power. Single leg hops and jumping rope both develop rhythm and power, not to mention upper and lower body coordination.

Speed and power training can develop the following foundational abilities:

- Limb velocity
- Reaction time
- Frequency of movement
- Anaerobic efficiency (the amount of glycogen stored in muscles and the ability to produce energy in the absence of oxygen)

- Ability to perform work when the internal environment is disturbed (i.e. high body temperature, high lactate, etc.)

Everyone Should Train Like a Bill Kocher: Whether a child will become a world-class athlete or a Nobel poet laureate, each should begin with a happy, healthy childhood in order to lay the groundwork to be a happy, healthy adult. If a child is forced to specialize and skip a phase or more of emotional and physical development, they may find success, but it will be short-lived.

Competition and Norwegian Youth Sports: The Bill Koch Youth Ski League philosophy is that every child should have the opportunity to participate and to have a successful, fun, and rewarding experience. Every child should be rewarded for doing their best. The title of an early film about the Bill Koch Youth Ski League was titled, "I Hope I Get a Purple Ribbon." At the time all participation ribbons were purple. But how can we continue to encourage this when our American culture focuses everything on the winner?

Perhaps the first step is understanding how we became a nation for whom winning isn't everything, it's the only thing. Former Olympian and coach, Richard Taylor, takes a chapter in his book, *No Pain, No Gain? Athletes, Parents and Coaches Can Reshape American Sports Culture*, to look at the effect of our history on American culture, and the American view towards sport. He considers the effect of Puritanism, the American Revolution, the British motto – "the war was won on the playing fields of Eton," and our choice of heroes like Teddy Roosevelt.

We've been a nation of independent fighters for over 200 years, used to winning and heaping attention and money on the winners. Many people were raised and indoctrinated by the idea that competition is the only way to measure success, and just participating is not enough to be proud of. Rough stuff to put on children when they are still in the midst of developing self-esteem, confidence, and self-respect.

However, many studies are giving us a different perception of competition. A report put together by the Aspen Institute after the 2018 Winter Olympics took a close look at Norway's continued success in the winter games. What the report found is that Norwegian sports clubs follow a system very close to the LTAD model. Children are encouraged to participate in multiple sports, competition is de-emphasized until age 13, and coaches are encouraged to keep activities fun and engaging.

A quote from the head of the Norwegian Olympic Committee Tore Øvrebø sums up this ideology well:

> "We like to win… but it shouldn't follow you and define you as an individual when you are a kid. We like it to be [about] play and having fun. They should learn social skills. Learn to take instructions, and think by themselves. Learn to know what the rules are. Learn why we are doing these things together. So there is a value system going through the [activity] that is actually about developing people. That's the main goal of sport, to develop people."

This is not a new approach for Norway either. In *No Pain, No Gain?* Taylor reports that Norwegian children were markedly less competitive and more collaborative than American children:

> "Norwegians grow up in a less competitive culture than Americans but routinely perform at significantly higher levels in world cross country ski competitions…. I will suggest that our unquestioning faith in competition has not only put us into contest with our fellow athletes, it has led us into an essentially adversarial relationship with both the body and the terrain as well. When competition is confused with combat and conquest, the body, the athlete, loses." (Taylor, *No Pain, No Gain?* p. vi)

Training Specifically for Competition: There are always a number of Bill Koch Youth Ski League participants who are interested in the excitement and challenge of cross country ski competition, but it cannot be emphasized enough that most children are not oriented to the complexities of competition. Many younger children love to compete for the fun of it, but they are not as likely to enjoy *training* for an event. Older children may want a training program which improves their skiing performance, but they may not be ready for an arduous program. Coaches and caregivers/parents must be aware of a child"s motivation for competition and develop a long-term program consistent with the child's physical development.

As children grow older and transition from BKL to junior racing, they become ready to specialize and train specifically for competition. However, the children can only be successful if the proper preparation has been accomplished at the BKL level. Training for competition can be immensely fun and rewarding, but we should not push children into that path until they are ready. Our job is to prepare them for these levels of physical focus, if they choose. And if they don't, we should have instilled in them an appreciation and a desire to pursue a lifetime of health and fitness.

Chapter 4: Planning For Practice

This section details the elements that go into safe and effective practices and develops a sample outline of a club's first practice of the season.

General Considerations: Everything begins with advanced planning. How often, how long, and where the club meets are decisions that need to be made by the club leader with input from volunteers and caregivers/parents. Similarly, group size and supervision are issues that need to be addressed in advance by the club leader and helpers, and then adapted to the site, activity, and weather. Clear communication between the club leader and caregivers/parents is vital.

How Often To Practice: The vast majority of BKL Clubs meet at least once a week. Most attempt a weekday, after-school practice and a longer weekend session. Some offer a second weekday practice just for their experienced children or racing group. Unless it is catastrophic, weather should not affect your practice schedule. Even in times of poor snow there is work to be done on equipment and trails, and there are many games that can be played indoors and on dryland.

How Long To Practice: A typical weekday session lasts 60 - 90 minutes. Darkness and busy schedules are less a factor for weekend sessions and the session can extend to 2 hours, or even longer for some of the older children, especially if you are planning a ski tour or special activity. But if children are tired or the weather is not cooperating, never be afraid to cut the planned session short, move indoors, play games, or engage in other activities. Pay attention to the needs and desires of the children!

Where To Practice: Long before the snow falls you need to obtain permission to use your practice site. It is important to have a site that meshes well with the children's abilities. An ideal site might connect fields with wooded trails and rolling terrain.

If you are fortunate, you will have more than one site lined up. Skiing in a variety of locations keeps everyone mentally fresh, and different sites may be better for different activities. Weather and snow conditions can make one site preferable to another as well. Most times the wind that can drive participants from open areas are blissfully absent in the woods. If you are videotaping, you may want a loop or other terrain specific to the activity you are filming (i.e. downhills).

Being able to gather in and disperse from a heated building is a tremendous asset, but practices are managed throughout the winter all over the East without a facility. More caregivers/parents, more vehicles, and a little more teamwork are required, but a building-less practice is certainly possible. Some potential sites include: cross country centers, schools, parks, golf courses, and recreational areas. Sites should be groomed prior to children arriving for practice.

Caregivers/parents should have plenty of advance notice as to where and when the practice will be held.

Temperature Guidelines for Practice*

Temperature	Racing	Training	Easy Skiing
- 0° F	NO	NO	Several (1-3) short periods of easy skiing (10-15 mins) with proper clothing
0-5° F	Not recommended	No high intensity	OK with proper clothing
6-10° F	Usually OK	Intensity with caution	OK
11° F +	OK	OK	OK

* Windchill should be taken into account

What Children Need For Practice: Children must come dressed properly (see Clothing and Equipment chapter on page 135) and have snacks and water (see Nutrition chapter on page 145). One of the first lessons children and their caregivers/parents must learn is to dress in layers. Having many thin layers of clothing allows children to regulate their body temperature by taking off 1 or 2 layers or adding 1 or 2 layers until they are comfortable. Heavy, bulky jackets and padded snowsuits can result in overheating and restrict movement, but removing them isn't always a good option without plenty of back-up layers beneath. Generally speaking, a lighter outer garment with ample layering underneath is best for active children.

Additionally, each child should have a small bag with extra socks, a dry shirt, back-up mittens, and regular shoes or snowboots. Including a plastic garbage bag is a good idea as well. Not only will it guard the bag against rain but it provides the child a place to sit on the snow.

What Caregivers/Parents Need To Know Well Before Practice

- Time and place of practice
- Associated program costs
- Special transportation needs (i.e. carpooling)
- Special services you might require of them
- Equipment, clothing, and food/water needs of their children

Club Leader Pre-Practice Checklist

- Caregivers/parents provided with what they need to know in a timely manner
- All children's equipment needs taken care of before practice starts
- Suggested clothing list distributed to caregivers/parents and children at the beginning of season
- Extra clothes available for children
- Email list, website, or other announcement for communicating if practices are canceled, changed, or moved
- Extra water and water bottles
- Access to bathrooms
- First aid kit
- Someone with basic "First Responder/First Aid Training" on hand and an Emergency Medical Plan adapted to the site (see template here: https://drive.google.com/file/d/0BxrL323QfH8qMOdSTWYzb3FaVk0/view?resourcekey=0-02Ea7VeD4yK-79GcNW-tIQ and recommendations here: https://drive.google.com/file/d/0BxrL323QfH8qTDZYX3FQdExSeEE/view?resourcekey=0-EUo_V8CuWTQe_0hLWjfPQg).
- A written practice plan (see below) in place to chart the day's activities, caregiver/parent and child attendance, and any special occurrences
- Game box with cones, pinnies, balls, etc.
- Have an idea of group size and how the group will be supervised
- Site groomed before children arrive

Group Size and Supervision: One teacher with six children works well. Any bigger than that and you may find yourself spread too thin. In groups of 10-15 children, a leader and a sweeper or support staff member are recommended. Groups larger than 15 are very awkward to teach or supervise. Ideally, there are two adults to work with children even in groups smaller than 10.

Practice Plans: Even the most experienced coaches write down what they plan to do for practice and provide a rough timeline for the activities. The practice plan might contain some or all of the following elements:

- Meet and greet

- Get ready, equipment check
- Overview of practice, expectations, and objective
- Short warm up and dynamic stretching
- Instruction
- Skill practice
- Skill practice in game form
- Fitness activity
- Cool down and static stretching
- Closing meeting evaluation and wrap up

The art and science of coaching come together in your practice plan. In later chapters you will learn what to teach and how to teach it. At the end of this chapter is a sample outline for the first practice of the ski year. Note how the elements listed above are used.

Why Plan Practices?

- Less Stress
- Enables everyone (coaches and caregivers/parents) to be on the same page
- Creates good training habits for the future
- Keeps children in the FLOW

Keep in Mind:

- Write down the plan and share with other coaches
- Create challenging yet doable practices for all
- Create child-specific challenges
- Be open to changing your plan to fit the needs of the group

Know Your Subjects:

Kindergarten (age 5-6)

- Keep moving!
- KISS- **K**eep **I**t **S**imple **S**ki-coach!
- Be aware of fatigue

Elementary School

- Kids have the ability to take in more instruction
- Use the "compliment sandwich." Give a compliment, then a critique, then another compliment
- Ask them for help. This age group likes to be empowered and helpful.

Middle School

- Peer pressure can lead to change in motivating factors
- Be the undisputed leader

- Repeat skills through growth spurts

Mobility: All workouts should start and end with a warm up and cool down. A warm up is a key component to preparing the body for the demands of any training session or competition. Part of the warm up should include dynamic stretching, which consists of functional based exercises that use sport-specific movements to prepare the body for movement. Warming up and dynamic stretching will elevate the heart rate and warm up the muscles in addition to improving range of motion and coordination. A good warm up reduces the risk of injury. After a cool down at the end of a workout, use static stretching when your muscles are already warm to improve your range of motion and prevent injury.

***

Example: First BKL Club Day (approximately 90 minutes)

The first BKL organizational/informational meeting should occur by the beginning of November. However, leaders may need to have their schedule in place well before then so caregivers/parents can plan ahead and new members are aware of your program. This meeting is a chance to get everyone together, distribute information about the upcoming season, welcome new members, sign up kids for equipment/rentals, and answer questions. However, it's also an opportunity to get everyone excited about cross country skiing and the upcoming winter season!

This first meeting suggestion is unique because it asks that the children and their caregivers/parents take part in an informational practice. This encourages caregivers/parents to ski, to ski with their children, and to volunteer at BKL practices. It also highlights what their child will need in terms of clothing, food, and equipment. This meeting should be adapted to match your club's needs, the weather, and the facilities. Talk to your District Chair or other Club leaders for ideas. Contacts for these individuals can be found on the NENSA website: https://nensa.net/bill-koch-league-club-directory/.

In periods of snow drought, take a hike, play dryland games, or host a potluck. Groups can also make team signs or ski posters, work on equipment and repair/clear trails. There is always something that can be done to build your club community!

1. Meeting begins indoors, if possible, with one or more of the following (not longer than 30 minutes total):
    a. Explanation of BKL for children and caregivers/parents
    b. Sample video of cross country skiing, preferably of BKL participants
    c. Short explanation to attending caregivers/parents of BKL costs
    d. Explanation of the day's activities; discuss appropriate clothing and/or equipment

2. If Dryland: Do activities for no more than 30 minutes. Suggestions below.
    a. Short exercises/stretches
    b. Short running games such as relay sprints with obstacles, tag games, caregiver/parent & child relays, tennis ball soccer with children and caregivers/parents (see Games chapter on page 80)
    c. Ski walking with ski poles
3. If on Snow: Give a short talk about wax needed for the day (if applicable) and then move to activities (~30 minutes).
    a. Divide into small groups (1-4 is ideal) and show diagonal stride and double pole.
    b. Show downhill skiing and snow plow. Give each child a chance to try each one. BE POSITIVE ABOUT EACH CHILD'S EFFORT!
    c. End session with a short game played without poles that works on snow feel and balance.
4. Break for snack (15- 20 minutes)
    a. Discuss energy snack foods (see Nutrition chapter on page 145)
    b. Answer more caregiver/parent questions
5. Activity session (30 minutes: depending on the age group, this can be optional)
    a. Short hike or ski, or soccer and more games

Conclusion: Send kids home with a flier or card that has the time of the next club meeting, and information on local ski shops and ski swaps/sales for equipment.

Chapter 5: Applying Skills

What to Teach and How To Teach It: In this section we will review the difference between aptitudes and skills/techniques, and outline activities where both can be developed.

Skiing Aptitudes: The aptitude areas involved in cross country skiing are balance, coordination, agility, imitation, strength, flexibility, and feel for the snow. They are primarily developed through games and self-directed play. Later on in this section, we will share games and activities that assist young children in aptitude development

Skiing Technique/Skills: Technique is the application of refined and directed aptitudes. A simple example is gliding which links balance with a feel for the snow. A more complex example is the diagonal stride which links gliding, pushing on poles at the right time, pushing on skis at the right time, and terrain adaptation. The diagonal stride involves a variety of movements which require the refining and directing multiple aptitudes. It makes sense that the application of a single aptitude such as balance (gliding) is generally learned more quickly than the application of a combination of aptitudes (diagonal stride). Consequently, a beginner's learning curve reflects the mastery of increasingly more challenging competencies. Listed below is a ladder of technical progressions arranged in order of increasing complexity. They are provided so leaders/coaches are aware of what they need to know to lead/teach effectively and so leaders/coaches can monitor and assess the overall development of each child.

We do not suggest a leader/coach go down the list and attempt to teach each skill application (technical competency) one-by-one. These technical competencies are best learned through a combination of exercises, games, and activities that are fun and challenging. Never lose sight of the cardinal rule in BKL instruction: **learning by doing is the primary way children learn.**

Technique/Skills Progression

- Putting on equipment properly
- Falling down and getting up
- Assuming the basic athletic stance
- Star turning (tips and tails)
- Side stepping
- Uphill side-stepping
- Wedging (gliding and braking)
- Herringboning/duck walking
- Kick turning
- Double poling
- Diagonal striding
- Skating without poles
- Skating with poles
- Gliding turns
- Skating turn
- V1 skating
- V2 skating
- V2-alternate skating
- Wedging christie
- Gliding christie

The competencies listed above are addressed below in simple lesson plans. They are *not* meant to be followed as if they were instructions for assembling a mechanical device. They are *not* meant to be taught in order. They are meant to provide guidance to leaders/coaches who will then make adjustments according to their respective coaching style, the age and learning style of their group, the weather, and the terrain.

Instructional Videos:

NENSA:

- Building Comfort on Skis: https://www.youtube.com/watch?v=jSTNm7E-X9Y&t=79s
- Climbing Hills on Skis: https://www.youtube.com/watch?v=V8a0zOf38ZM&t=3s
- Things to Try on Downhills: https://www.youtube.com/watch?v=Cj5u-JBKNpE&t=5s

Nordic Ski Lab:

- Beginner Cross Country Ski Lesson (including climbing and descending): https://www.youtube.com/watch?v=VfwKAU4zaJM&list=PL8ON0hrl6v8JXWGWcm4TSEe0bbSz03PBK&index=3

Green Racing Project TV:

- Double Poling: https://www.youtube.com/watch?v=_bbtN0T4j7I&list=PLZrpBGJYys86T1-dW-GLuqgxzCu40Ae8-&index=1
- V1 Offset Uphill Skate Technique: https://www.youtube.com/watch?v=zMTbTI1IAJ4&list=PLZrpBGJYys86T1-dW-GLuqgxzCu40Ae8-&index=12

Skiku:

- XC Skiing Basics: https://www.youtube.com/watch?v=2ArPTdf_Y0Y&t=3s
- Stride, Glide, and Climbs: https://www.youtube.com/watch?v=Ies9Kj5Bk80&t=1s
- All about Poles: https://www.youtube.com/watch?v=-b0jAjw2C3w
- Skills for the Hills: https://www.youtube.com/watch?v=RehJTnqH2N4&t=267s
- Adventure Time: https://www.youtube.com/watch?v=iz6JGhIgv3A
- Intro to Skate Skiing: https://www.youtube.com/watch?v=FjjyddZN-P8
- Skate Skiing with Poles: https://www.youtube.com/watch?v=qtURmYkVuKQ
- Advanced Skiing Skills: https://www.youtube.com/watch?v=cwgEHANXy20

FALLING DOWN AND GETTING UP

Purpose: To teach children how to fall safely and get up easily.

Terrain: Flat and gentle hills.

Mechanics: Children should fall back and to one side whenever possible, and their poles should point back during a fall. For safety's sake, children should avoid crossing their skis during a fall. When getting up, children should first roll onto their backs and untangle their legs, skis and poles (like a dead bug); next they should flop their skis down next to themselves across/perpendicular to the hill's fall line (the path a ball would follow when rolling down the hill), if on a hill. Then they should climb onto their hands and knees and finally they should stand up onto their feet.

Teaching Methodology and Exercises: Briefly explain the things to consider above in order to fall safely and then bring the children through the following exercises. Ask the children to lie down on one side with their skis and poles on. Then ask them to get up. Next have children lie flat on their backs and have them see how fast they can get up — ready, go! Finally, have the children start from a standing position, fall to one side, roll over (so that their skis flop over to the opposite side), and get up. Have the children start on your "Ready, set, go!" signal. Repeat this procedure on a hillside by having the children fall below their skis on the hill, flip their skis to the downhill side of their body and across the hill, and then get up.

ASSUMING THE BASIC ATHLETIC STANCE AND DOWNHILL TUCK POSITIONS

Purpose: To teach children to glide downhill with stability and to change direction while gliding downhill. You can introduce this skill while the children practice the uphill side step.

Terrain: A moderate downhill with a flat, packed, open area at the bottom (this open area is called a runout).

Mechanics:

- **Athletic Stance:** The children balance evenly on both skis; the weight is flat on the feet/skis. The ankles, knees, and hips are all slightly flexed, thus moving the center of gravity forward and down, and helping the child to better respond to changes in terrain. The upper body is bent slightly forward, the back and shoulders are relaxed, and the hands are in front of the child just below waist level and out to the sides as if they are holding the steering wheel of a big truck. The poles are directed back and the baskets are just off the snow.
- **The Tuck Position:** The children balance evenly on both skis. Once they have mastered balance and agility, the children can shift their weight back over the heels. The trunk bends forward until the back is about parallel to the ground. The head is slightly up and children should glide forward down the hill. The legs bend slightly— enough for comfort. The hands are pulled up to the chin, and the forearms rest gently on the knees or thighs. The children may open their arms for balance. The poles point back and are tucked up under the armpits and run down beside the hips.

Teaching Methodology and Exercises: You can teach these skills with or without poles. Starting at the bottom of the incline, demonstrate the athletic stance and tuck position. Have children climb approximately 15 meters up the hill and glide back down in either the athletic stance or the tuck position at their own speed. See Gliding Skills (page 64) for some other recommended exercises.

STAR TURNING, SIDE-STEPPING, UPHILL SIDE-STEPPING

Purpose: To teach children how to maneuver on skis by turning in a circle and moving sideways on flat terrain.

Terrain: An open, flat, packed area.

Mechanics:

- **Star Turning (tails):** The child lifts the front of their skis one ski at a time, keeping the tails in place. They open the skis by stepping out to the side with one ski tip and then close the skis by lifting the other foot/ski and bringing the feet together. They keep repeating this stepping process until they have made a full circle. Children should practice turning in both directions.
- **Star Turning (tips):** Children follow the procedure for tails except that they keep the tips in place and step around them by lifting and moving their tails. Children should practice this skill in both directions as well.
- **Side Stepping:** Keeping the skis parallel, children lift one foot and step straight to the side. Next, children pick up the other foot/ski and bring it to the side of the first ski bringing both feet/skis together. Children should use their poles for balance. The poles should be planted at a bent arm's length out to the side.
- **Uphill Side Stepping:** Keeping the ski parallel and perpendicular/across to the fall line, children move sideways and side step up the hill. They edge their skis into the snow on the uphill side to prevent them from sliding sideways down the hill. The steeper the hill, the more edge the ski will require. The children should plant the pole as they plant the uphill foot/ski in the snow. Children should not weight the ski until they are certain that the ski will hold body weight without slipping sideways.

Teaching Methodology:

- **Star Turning:** Before demonstrating the skill, challenge your group. Ask the children to spread out so that no one's poles touch their neighbor and then ask who can turn a full circle to the right. Repeat the challenge with a full circle to the left. Then demonstrate the skill. Next, challenge the children to do a full circle without moving the tails of their skis. Finally, challenge the children to do a full circle without moving the tips of their skis.
- **Side Stepping:** See if the children can step sideways to where their nearest neighbor is standing and back to their original spot.
- **Uphill Side Stepping:** Children climb the hill by creating little stairs or steps in the snow with their skis and step up the side of the hill.

Exercises: Once children are comfortable with these skills, they can work on balance by doing these drills without poles. Children can create wagon wheels or star patterns in the snow with their skis. Children can do a short relay of side steps with a tip-and-tail star in the middle of each leg to reinforce the skill. On the hill, these skills can be paired with simple downhill maneuvers through uphill/downhill relays.

WEDGING

Purpose: To teach children how to control speed on downhills and to progress to wedge turns. The herringbone/duckwalk should be taught in the same lesson.

Terrain: A smooth, packed hill of medium grade with a long, safe runout**.**

Mechanics: The wedge position is the ready position. The child's hands are forward, below the waist, and out to the sides as if holding the steering wheel of a big truck. The legs are bent slightly at the knees, and the ankles are flexed forward so the center of gravity is over the balls of the feet. The feet are fairly far apart, and the child steers as if pigeon-toed (the tips of the skis are fairly close together and the tails are farther apart). The children ski down the hill with the tips together in a V-like wedge. This position applies pressure to the inside edges of each ski. The children can increase this pressure by pushing their feet out and opening the wedge while lowering the body and by bending the knees more. The upper body and arms should NOT change position when changing the position of the legs and feet.

Teaching Methodology: First demonstrate the skill in front of the entire group. Have children progress directly from where they left off with gliding skills and the ready position in downhill skiing. Before letting children progress uphill, make sure that they are ALL comfortable with this skill.

Exercises: Challenge children to do the following:

- Make a piece of pie with their skis
- Ski to the bottom of the hill with their skis in a V
- Ski to the bottom of the hill starting with their skis straight and stopping at the bottom in a V
- Open and close their Vs while gliding downhill
- See what happens when they ski taller
- See what happens when they ski lower
- See what happens when they ski with their ski wider or narrower

Have the children glide as far as they can down the hill in a straight line in a wedge. Place widely-spaced ski poles where the changes should take place. Start in a ready position; halfway down the slope change smoothly to a wedge. Start in the wedge, change to straight and then back to a wedge again before the bottom of the hill. Repeat the exercise using as many changes as you can. The change in position from wedge to ready position should be as smooth as possible.

NOTE: If the arms and upper body are moving, the change from the ready position will cause a weight transfer and maybe a degree of direction change. Correct by carrying glasses of water on an imaginary tray without spilling it! Also, try skiing while holding the ski poles in front horizontally at waist level. This exercise will help keep the upper body still.

WEDGE BRAKING

Purpose: To provide a safe means of braking on gentle to moderate terrain or to provide more speed control on steeper slopes and trails.

Terrain: A gentle slope with a smooth level runout.

Mechanics: The wedge is widened by pushing further out at the heels. Edge skis on the inside by applying inside pressure of the leg, hip, knee and ankle. The ankles will roll in a little and the knees will come closer together. Overall there will be an increase in the flexion of the leg. More edging and greater widening of the tails of the ski will decrease the speed of descent.

Exercises: Demonstrate the wider wedge while standing on flat ground and have the children describe the differences between the wider wedge and the wedge, and the wider wedge and braking. Have the children demonstrate the wide stance, the increased edging, and bringing the knees closer together (yes, we are a bunch of knock-kneed people!) Start down the hill in a wedge, and change to a braking wedge to reduce your speed by half. With practice, the children should become more aggressive with the braking wedge. The goal is to brake more and more until participants can come to a quick, straight-line stop.

Game for Wedge Braking (Motor Vehicle Inspection Station): Place two ski poles wide apart midway down the slope. Descend to this point in a gliding wedge and have the class yell "BRAKES!" Do the shortest braking distance you can. Red Light Green Light is also a good game to play for practicing wedge braking (see the Games chapter on page 80).

WEDGE TURNING

Purpose: To change direction and control speed while descending.

Terrain: Smooth and gentle, the same as for wedge braking.

Mechanics: While descending in a wedge, a pivoting or turning effort is made with the legs and feet, maintaining the wedge throughout the turn. The upper body remains in the ready position. The downhill ski will be weighted as the skis are steered across the fall line while the child maintains a centered, upright stance. Proper stance/ ready position is skis in a wedge with tips slightly spaced and minimal edging. Tips remain opposite each other. The inside ski tip should not drop back. If this happens there is hip rotation.

Exercises:

- Children descend the fall line in a wedge and turn gently until the change of direction brings about a full stop.
- Children repeat the above, but this time they start the turn from across the hill and then turn down and across the fall line. As a variation to help achieve the desired amount of turning effort, place a line of ski poles in an arc and have the children try to ski around the arc.
- Children carry their ski poles in a tray position to help produce a still upper body throughout the turn.
- *Variations:* Without poles, use your imagination and carry the tray. Or pull out an imaginary tube of glue, pretend to spread it around in the palm of your hand, and then glue your hands to your knees. Also, hold your hands out in front like they are on a steering wheel and steer in the direct you want to turn.

Games for Wedge Turns:

- *Mogul Mice:* As you wedge through a turn, reach down (on the downhill side only) and point at the snow where you "see a mogul mouse."
- *Snow Daisies:* Hold an invisible flower pot in your uphill hand and as you ski through the turn, reach down with the other hand and pick a pretty bouquet of snow daisies. Interesting how they only grow on the outside of turns!
- *Airplanes:* Extend your "wings" (arms) and bank your airplane to the outside throughout the turn.
- *Atomic poles:* Place a line of cones or ski poles in an arc. Pretend they are covered in sticky goo and it is necessary to lean away from them.

Linking Turns: Descend in a wedge and turn across the fall line. Before all speed is gone, turn back down and across the fall line again. Remember to stay upright; do not lean into the turns. Try not to let the inside ski tip drop back. Steer with your hands out in front of you like you are steering a car.

Exercises for Linking Turns: After trying two turns at random, place two cones or poles to produce an easy slalom course. Remember that corrective games will work just as well in a six-pole slalom as they will in a single turn.

- To increase the fun and improve balance and general mobility, prepare an obstacle slalom course. Begin by placing tunnels made from three ski poles or large half hoops stuck in cones in between the slalom poles. Ski the whole course in the wedge at first. Then, replace the tunnels with a pair of mini-cones or other markers. When children come around a slalom pole, their skis must quickly come to parallel, pass through the cones, and return to a wedge to steer around the next pole.
- To increase the fun and skill development, have children do a small jump when they are in between turns and are skiing parallel through the cones. Just make sure that the slalom course is sufficiently spaced so that the "little extras" can be fitted in.
- A good method for developing turning skills is to pair up the children using the hoops. Two children use one hoop held between them to allow a safe distance from each other for doing wedge turns. Make sure the slalom course is wide.
- Another method is to use a pair of poles, one held in each hand, with the child in front is the engine (holding the poles by the straps) and the child in back as the caboose (holding the poles by their baskets). Make lots of train noises and free ski, or do a slalom course.

HERRINGBONING/DUCK WALKING

Purpose: To teach children how to climb up a moderate-to-steep hill with or without kick wax. The wedge stop and turn should be taught in the same lesson.

Terrain: For wedge skills, clearly outline which parts of the hill children should ski down and on which parts they should climb. Children can progress from moderate to steep inclines as their proficiency improves.

Mechanics: Children start at the bottom of the hill facing uphill, with their skis in a V-wedge. The tails of the skis are closer together than the tips. Children start walking up the hill by using the inside edges of each ski for traction by maintaining the V-wedge as they walk. As one foot steps forward up the hill, the opposite arm and pole reach forward and are planted outside the ski. The child's weight shifts completely from ski to ski with each stride, and the upper body bends forward into the hill. The hands extend forward on each pole plant, but they stay relatively low (about chest height). The children start by taking small strides up the hill. Once they are comfortable with these mechanics, they can progress to longer uphill strides. To emphasize weight transfer, have children waddle up the hill like a duck. The degree of V-wedge should match the degree of incline and children will learn to feel what angle they need. Have children bring their knees together if they are not getting enough of an edge.

Teaching Methodology: Start at the bottom of a moderate incline and have children note the similarities between the wedge's V-wedge and the herringbone/duck walk wedge. Initially, children should not use poles so they get a good feeling of ski angle, edging, and weight transfer.

Exercises: Challenge children to do the following:

- Walk like a duck up the hill
- Do the same thing, but hold their hands behind their backs
- Do the same thing, but in fewer steps than the last time
- Do the same thing, but on a steeper part of the hill
- Do the same thing, but use their poles to help push with each step
- Do the same thing, but run up the hill.

Once the students have learned the fundamentals, move to a rolling hill, and have children experiment with the various exercises.

KICK TURNING

Purpose: To learn a stationary turn that is quicker and more efficient than the star turn.

Terrain: Flat and smooth terrain with well-packed snow but without set tracks.

Mechanics: Standing with skis parallel on flat ground and poles planted in front, the children turn the upper body around as though looking over their shoulder. The pole on the side that the children turn to swings around and is replanted so that the poles are placed on the same side of the skis. Children then kick up the leg on the side they are turning and let the ski turn 180 degrees and drop it down facing the opposite direction as the other ski. Finally, children swing the other ski around in the same direction so the skis are both facing the same direction. The pole on the same side is moved around at the same time, leaving children facing the opposite direction.

Teaching Methodology: Do a demonstration for this skill with a brief explanation. Then, once the group is spread out on a flat area, play step by step follow the leader. Be sure that all children try this maneuver on both sides until they are proficient. Children can also practice the skill on a hillside during one of the downhill lessons. While facing downhill, with poles planted on the uphill side of their skis, they practice using their edges to keep from slipping and ensure that the skis are directly across the fall line. Once comfortable with edging their skis, children can try a kick turn on the hill. Do not spend too much time trying to perfect this skill or children will become cold or bored with it. Try it a few times in two or three consecutive sessions instead.

Kick Turning on a Slope: From the ready position the children completely apply their weight to the outside ski (the ski opposite the direction of the turn), lift the inside ski, and redirect it in the desired direction of travel. The children step across onto the redirected ski and completely transfers their weight off the other ski. This action releases the ski so that the children can lift it and place it parallel to the new direction of travel. The children repeat this cycle until the desired direction of travel is achieved. The children can step from either the ready or the tuck position. However, the greater the speed, the quicker and narrower the steps should be. The children must also move the upper body in the new direction of travel during these steps.

Teaching Methodology: Teach this skill with an uphill skill on moderate downhill terrain. Choose terrain that allows children to turn either right or left at the bottom of the hill. Make sure that there is a safe runout in both directions and that children practicing the downhill part of the progression will not collide with those doing the uphill portion of the progression.

Children should start far enough up the hill to allow only a few seconds of gliding to the bottom. Allow children to progress up the hill only as they gain confidence and competence. Have the group ski down in the tracks and all turn in one direction. Ask children to feel balanced on the balls of their feet and to quickly lift one foot and then the other as they glide down the hill. This stomping of the feet will teach them to balance and transfer weight from foot to foot.

Once children are comfortable doing this kind of turning, they can redirect their skis as they lift them; the exercise thus becomes lifting a ski, changing its direction, and stepping down on it. Children should keep stepping until they have turned back up into the hill. Make sure that children practice in both directions. Have the group progress into working on an uphill technique without waiting at the bottom of the hill.

DOUBLE POLING

Purpose: To use poles to propel people over flat and slightly downhill terrain.

Terrain: Flat or gentle downhill terrain with set tracks.

Mechanics: Double poling is a forward extension of the arms to shoulder height and width from an upright gliding position. The child plants the poles near or just ahead of their bindings and drives the arms and trunk forcefully down onto the poles by flexing the core and bending slightly at the knees and ankles. These movements occur simultaneously with a forward lean and slight bend of the trunk. The feet are side-by-side and the child's body weight moves from being over the toes at the start of the double pole to being over the heels at the end of the double pole. There is a slight bend in the knees. Once the push phase of the double poling cycle is complete, the child stands fairly upright and swings the arms forward for the next pole plant.

Teaching Methodology: Start by making sure that all children have their pole straps on properly or children will not be able to double pole correctly. Line children up at one end of a grid or a long, flat section of trail. Always line children up in the easiest direction to take advantage of even a slight descent. Then demonstrate the double pole in front of the group. Challenge children. Ask them who can get to Point X without using their legs and observe them as they ski to X once or twice. As they ski, offer encouragement in addition to making sure that they can see enough of your double poling to model it.

Some additional challenges to add:

- Try to get to X with stiff arms and just bend forward at the waist.
- Now use both arms and crunch your trunk/core. Which way feels better?
- For each challenge, have the children count the number of pushes they have to take to get to X. This way they will soon discover the most efficient method of double poling.

Exercises:

Have children count to themselves:

- One—arms up front
- Two—push and crunch trunk/core and breathe out
- Three—follow through and stand up
- Four— relax and glide and breathe standing up

KICK DOUBLE POLE

Purpose: To combine the diagonal stride and double pole on the flats

Terrain: A flat, consistent section of trail or a short loop that is track set (preferably double tracked)

Mechanics: Have children start with a full double pole. A review of simple double poling could be used to introduce this session. As the children complete their follow-through and recover from the double poling push, they shift their entire weight onto one ski. Then, with a quick, snappy extension of the trunk, children push forcefully off the weighted ski, compress at the trunk/core, and enter the standard double pole and glide phase on both skis. It may be helpful to see the motion as an extension of the trunk over one ski which leads into a compression of the trunk over two skis. Kick double poling is simply the continuous alternating rhythm between a double pole and a single-leg stride. Weight transfer is the most complex part of this skill. Getting a good strong push is dependent on being able to completely commit weight to the gliding ski.

Teaching Methodology: Review double poling in the form of fun relays together with a few technical reminders. Then, going in the easiest direction, practice pushing using the "scooter" exercise (successive pushes with one leg while gliding only with the opposite leg). Do this exercise on both sides. Once the children are comfortable with the "scooter", combine the poling push between each "scooter" push and you have one ski double poling.

THE DIAGONAL STRIDE

Purpose: To teach the fundamental skills enabling children to travel over flats and moderate uphills.

Terrain: A tracked, flat area and a gentle, tracked uphill of very moderate grade.

Mechanics: Children stride forward with their skis in the tracks. The skis move parallel and forward as in walking or running. Children stride by stepping from a stationary, weighted ski on to an unweighted ski, i.e. the one they have just strode forward on. Children must balance on this unweighted ski while it slides forward in the track until they are ready to step forward and onto the opposite foot again. The stride is simply the continued repetition of performing a leg push, transferring weight, balancing and gliding, and performing another leg push.

Each arm works in synchronization with the opposite leg. For example, children push down on the left pole while simultaneously pushing down with the right foot. The arms extend forward to about shoulder height (elbow bent around 90 degrees) to initiate the poling action. They are then driven down and back following a natural pendulum motion. The arms stay about shoulder width apart throughout the stride. The child's body weight should transfer from side to side over the gliding ski. The torso should face the direction of travel and should not twist or rotate from side to side. When the leg push is initiated, the ski stops moving in the track as the child pushes down to get traction on the wax, fish scales, or skins. The children must learn to keep all their weight on the pushing ski during this movement. This will ensure they get the best grip possible.

Teaching Methodology: Start by having the group diagonal stride for a few minutes in the tracks. If using kick wax, be sure skis are properly waxed to avoid frustration. Spend more time demonstrating than explaining. Only after children seem to be striding confidently and comfortably on flat terrain should they move to striding uphill. On hills we recommend starting with poles and emphasizing an aggressive weight shift from ski to ski to maximize kick. Remind children to look up the hill so they don't bend at the waist and get bogged down.

NOTE: Whenever you teach skills on hills, match an uphill skill with an appropriate downhill skill, and teach the pair simultaneously.

Exercises:

- *Diagonal Stride Without Poles:* Have children ski along a track and emphasize pushing the foot down and driving the opposite knee forward to propel themselves. Children can swing their arms at their sides as if they are holding imaginary poles. Have children count how many strides they take to get to the end of the track and then have them try to hold their glide to keep the ski traveling as far as it can before they push off with the other leg. Have children do 3x3's: three aggressive, quick strides (step-step-step) followed by an extended glide where they will attempt to balance until they stop followed by another step-step-step and another extended, balanced glide. This exercise helps with weight transfer which is the movement of the child's body weight from one ski to the other. The longer a child holds their weight over their ski, the longer the glide.
- *Just Poling (Single Sticking):* Have children take five or six full strides to gather momentum and then simply use their poles in a diagonal stride rhythm to propel themselves along with no leg action. This exercise is also good for getting children to bend the trunk forward and really engage the core in the poling movements.
- *Relays:* Relays are a great way to practice different skills. With three-person teams, have each child do one shuttle of diagonal stride with no poles, diagonal "stride" with only poles (single sticking), and full diagonal stride. Keep the number of teams in the relay small, and run a lot of relays so everyone keeps moving there's no and there's no pressure to win.

GLIDING SKILLS

Purpose: Many beginners have never tried gliding before. Since gliding skills, body position, balance, and agility are prerequisites of all other movements on skis, take special care to emphasize all of them. The purpose of this progression is to introduce children to, and familiarize them with, the feeling of gliding on skis. This progression requires that the child be able to get back uphill so you may also want to introduce the herringbone/duck walk or side step at this time.

Terrain: A smooth, well-packed,gentle downhill with a long runout.

Mechanics: The objective is to make children feel comfortable and balanced while gliding on one or both skis and at various speeds. The body is in the ready position. The legs should be shoulder width apart with slightly flexed knees and ankles. This flexion allows the legs to act as shock absorbers. The feet/skis are parallel to each other and should not be crossed. The arms are also shoulder width apart and are in front of the hips. The children should look as if they are carrying something or driving a truck.

Teaching Methodology: Be sure to teach children to glide without poles.Have children practice the ready position on the flats and explain how to improve balance by flexing their joints and lowering their center of gravity. Then have children do as follows:

- Jump on the spot
- Jump on one leg
- Slide their skis back and forth in the snow
- Lift one ski and balance on the other. Do this with both sides. Repeat with eyes closed
- Have children start near the bottom of the hill and see who can glide to a stop without falling. Gradually move up the hill as they improve.

Exercises

Challenge children to do the following:

- Be as tall as they can while skiing downhill
- Be as short as they can while they ski downhill
- Hop up and down on their skis while skiing downhill
- Step from foot to foot while skiing downhill
- Ski downhill backward
- Ski downhill in a tuck like a downhill racer
- Make their skis look like a “V” as they ski downhill
- Change tracks while skiing downhill
- Pick up an object (like a hat or a mitten) while skiing downhill

SKATING

Purpose: To teach the fundamental skills that enable children to travel over all types of terrain without using traditional kick waxes.

Terrain: A flat, level field or section of trail that is firmly packed and smooth.

Mechanics: Children skate forward and shift their weight from side to side as though ice skating. The legs push out to the side in a skating motion and returns directly under the child. The legs should push to the side with equal force. The position of the body when one foot/ski is in contact with the snow after the other has pushed off is the gliding phase of the motion. Children must shift their weight from one ski to the other while traveling forward. Children can find where their body weight should be by placing their skis in a V-shape and adjusting their weight forward and back and pushing on their skis until they start moving forward.

There are three technique variations in skating (V1, V2, and V2-alternate) that require three different arm motions. If we consider that there are 4 points of contact with the ground— two poles and two skis— we can break down the relationship of pole plant to ski step in the three styles. In the V1, both poles plant with one foot/ski step at approximately the same time: 3 points down (both poles and one foot/ski), then 1 (the other foot/ski). In the V2-alternate, both poles are planted followed by the one foot/ski and then the other: 2-1-1. In the V2, there is a double pole plant just before each foot/ski step: 2-1, 2-1

NOTE: These basic mechanics are not to be confused with the specific skills for the different types of skating.

Teaching Methodology

- *Skating Without Poles:* Try a series of exercises like the following:
    - Without poles, skate around the field like a hockey player.
    - Put your hands behind your back and skate around like a speed skater.
    - Ski around like a speed skater and swing your arms.
    - See how long you can balance on each ski before you have to take the next push.
- *Skating With Poles:* Children must learn to assist the motion by using the upper body and arms in movements similar to those used in double poling. Try the following series of exercises:
    - Push on the poles every second step/push.
    - Try pushing on every step/push.

    - Now see how far you can glide on each step/push when you skate and use your poles together.

Exercises

- **Skating Without Poles:** Have children skate without poles (choose the easiest direction of travel if there's slope, wind, etc.).
    - Have children skate from A to B and count their strides.
    - Have children skate around a large figure eight.
    - Have children play any tag game, but the only technique they can use is skating.
- **Skating With Poles:** Refer to the exercises for skating without poles and add going up a moderate hill.

NOTE: In these exercises, don't worry about proper hand position, timing of arms and legs, body position, etc. If students can manage a skating leg push and rhythmically apply force by poling while skating, they are well on their way.

SKATE TURNING

Purpose: The skate turn is used to turn sharp corners at low to moderate speeds.

Terrain: A moderate downhill with a flat, packed, open area at the bottom.

Mechanics: This technique is best described as a wide step turn with an explosive push off in the new direction. The skate turn begins with a double pole and while returning to the upright position, the child lifts their inside ski, directing the arms and body in the new direction.

The child digs in the inner edge of the outside ski in a skate push. The action is an explosive extension of the hip, knee and ankle pushing the body in the new direction. Then transfer the weight to the inside ski and the outside ski is brought parallel to the other ski. The movement is completed with a new double poling action.

Teaching Methodology: The teaching methodology is very similar to the step turn on a slope. Teach the skill with an uphill skill and make sure that there is a safe runout in both directions. Have the group start with a simple skate around a ski pole or other object. For a challenge, practice the turn on both right and left sides. You can also change the angle of the turn and increase the slope of the hill. Add the double pole with the skate turn once the children feel comfortable doing the motion without arms.

Exercises: Without poles, have the children hold hands and skate turn around the corners of a 15 meter square. A fun way of practicing this skill, in a drill or relay, is to use music. Upbeat music will encourage the participants to repeat the skill. Line up several poles in the snow so that children have enough room to double pole and have them skate turn through the slalom course

V1 SKATING (can be taught with the Gliding Christie on page 72)

Purpose: To climb moderate and steep hills.

Terrain: A hill progressing from a moderate to a steep grade climb. The hill should be wide, open, and packed with no tracks. It should be wide enough for two-way traffic (up and down).

Mechanics: Start where you left off with basic skating skills and reinforce the mechanics of a strong leg push working equally with both legs. When children are effectively gliding, shifting their weight, and pushing on both sides, introduce the upper body movements. The V1 movement involves a 3-1 rhythm of two poles and one ski/foot touching the ground at the same time. Children can pole on either side and can practice changing sides. Although the tempo of the 3-1 movement may change and become more rapid as the incline steepens, the timing remains the same. The trunk stays in a fairly upright position and does not bend much at the waist. The steeper the hill, the faster the tempo of the movement to account for the shortened glide phase. During each stride the hips should remain in a neutral position over the balls of the feet. Children must flex their ankles to achieve this position. If the children sit back too far while climbing their legs will tire.

Teaching Methodology: The first priority is to check that the basic skating skills are being well executed and that children are using both legs effectively. Skating skills can be reviewed with some games and relays at the start of the session. Don't use poles during these drills. To begin teaching the V1 technique, start the children on either flat terrain or a relatively short hill of moderate steepness. Have them start from a standing position. Have them rock back and forth while standing still transferring their weight from ski to ski. Then have them plant their poles in the V1 rhythm while rocking back and forth. Next, have them begin pushing off the *left* ski onto the right ski and coming down on the poles as they push onto the right foot and start moving forward while maintaining the 3-1 rhythm on their chosen side. Have them try to switch poling sides. Have children concentrate on fully shifting their weight and pushing off the inside edge of their gliding ski to keep the skis moving. Phrases like "quick and light" and "gallop" can help achieve the correct feeling. Keep the hill short and moderate for most of the practice or the children will tire before learning the skills. If children are not gliding for equal time on each side, have them go up the hill without poles.

Exercises

- Practice the arm movements while stationary at first.
- Have children skate without poles and practice the arm movements.
- Have children air pole to the correct arm rhythm while skating but not actually plant their poles.

- Have children start air poling and then at a marked part of the hill begin planting their poles.
- Instead of picking up their poles at the end of the poling cycle to replant them, have them drag their pole tips along the snow to return to the next pole plant.

V2 SKATING

Purpose: To skate on flats and moderate uphill slopes by skating while double poling just before each ski/foot step.

Terrain: Use flat or slightly uphill terrain that is well packed and not tracked.

Mechanics: Children double pole just before each skate step. Both legs should work equally as with all skating motions. The glide phase is followed by a strong push phase and a complete weight transfer onto the other ski. Children must master the ability to balance completely on one ski to become efficient at this skill. Gliding should be done on a flat ski and the polling is initiated early in the glide phase. During poling the core crunches and the gliding leg bends slightly. This motion is followed by a leg extension where the ski shifts onto the inside edge as the child moves up and over onto the opposite ski pushing off that inside edge. The pole recovery is quick and simultaneous with the weight shift from one ski to the other. This action brings the arms up in front in time to initiate the next pole push as soon as the child balances over the other ski. This technique increases the use of the poles during each skate thereby increasing the contribution of the upper body to propulsion.

Teaching Methodology: Instructors should begin with basic skating skills re-emphasizing balance before introducing poling. To start poling, children should skate down a very gentle hill and try to push with the poles on each stride. Tell them to glide on the flat ski, and not do anything with the push until they have done a double pole. Keep the tempo slow until they achieve a sense of timing, and then pick up the speed bit by bit.

Exercises: Relays using this skill will work to reinforce the right feeling.

- Have children see how far they can go with each single push, or count the total number of pushes over a set distance and repeat to try and reduce that number.
- Start with small skate pushes (high tempo) with every double pole until longer, dynamic skate pushes can be achieved.
- Have children double pole twice (mini-pole pushes) on each glide to practice balance. This exercise is called the V4.
- Have children hop on their gliding ski on each side before pushing and transferring their weight to the other ski.

V2-ALTERNATE SKATING

Purpose: To skate over flat and gently rolling terrain using a combination of skating pushes and double poling.

Terrain: Flat, smooth terrain with well-packed snow.

Mechanics: Poles are used together in a double pole fashion with a quick, strong compression of the upper trunk followed by a natural arm extension or follow-through. This follow-through shortens depending on the terrain and sometimes the hands do not move past the hips. The trunk starts in a fairly upright position and does not bend forward at the waist. Poles are loaded through a compression of the upper trunk. The arms work through the full range of motion but more power is applied at the start of the poling cycle. Poling is timed to occur every second leg push. The rhythm is 2-1-1 (2 poles, 1 ski, 1 ski), or pole-skate-skate, pole-skate-skate.

Teaching Methodology: To introduce poles in this technique, have children skate over a moderate downhill slope and ask them to pole once just before every second step using both poles at the same time. Once the timing is acceptable, emphasize the quick, aggressive upper trunk flexion. Poling should almost be complete when the actual leg extension (push) starts. Encourage this movement by instructing children to pole “early” and push “late”. Try having them say pole-skate-skate in time with their movements.

Exercises

- Snow soccer without poles
- Tag games without poles
- Relays (first without poles then with the complete skill)

GLIDING CHRISTIE

Purpose: To advance beyond the wedge with an introduction to the parallel progression and to introduce side slipping.

Terrain: A smooth, groomed slope slightly steeper than for the wedge.

Mechanics: The turn starts by crossing the fall line in a ready position. Ski across the hill (traverse) and open the skis into a wedge. Wedge two-thirds of the arc, or turn, as for a conventional wedge turn but after crossing the fall line, transfer weight onto the downhill ski. With your weight balanced on the downhill ski, slide the uphill ski until it is parallel to the downhill ski. Slide on your inside edges and continue to steer so that both skis continue turning. The final third of the turn is a skidded parallel. Skidded parallel can best be described as a side slip.

Exercises:

- *Side Slip:* Before attempting the gliding christie turn, introduce the concept of side slipping. Begin by side stepping two to three steps uphill in between widely-spaced ski poles. Stand beside the uphill pole with skis parallel and shoulder width apart. Relax the knees away from the hill, towards the bottom of the hill, for a moment. This will cause the edges to release and a short side slip will result. Repeat until coming up against the downhill pole. Try the exercise without using the poles for balance. Instead, rely on natural balance by standing in the ready position between shoulder width skis. Try longer and longer side slips. Try facing both directions.
- *Gliding Christie:* Try an actual turn. The secret is the smooth weight shift to the downhill ski. This allows the uphill ski to easily slide in next to the downhill ski. If the uphill ski is getting caught on its inside edge, it will not be possible to place it parallel to the downhill ski. This will result in either a wedge that is too large (putting skis on too much of an edge)—or an uphill knee that is "knock kneed." When the uphill ski is on too much of an edge, the solution is to move the knee slightly uphill until the ski flattens on the snow so that it slides easily alongside the downhill ski. Repeat for both right and left turns. Try to achieve a small amount of side slip at the very end of the turn. If the upper body is moving out of the ready position and interfering with balance over the downhill ski, try skiing with the poles held out front in the cookie tray position.
- *Linking Turns:* Before the skis have skidded to a complete stop, open into a new wedge and start a new turn in the other direction.
- *Variations:*
    - Hold arms out like wings and bank to the outside of the turn. This movement will add weight to the downhill ski.

- Mark the arc of the turn with ski poles and indicate where to change from wedging to skidding with your skis parallel.

ELEMENTARY CHRISTIE (PARALLEL TURNS)

Terrain: A smooth, packed slope or wide trail. Can use the same slope as for gliding christie above.

Mechanics: The elementary christie progresses from the gliding christie in three ways:

- Unweighting is used to help with earlier weight transfer and easier steering
- The skis will close to a parallel position earlier in the turn
- The pole plant will be introduced as a timing aid to help with the above steps

Initiate the turn by opening into a wedge and steering towards the fall line. The knees are flexed a little more than in the ready position. Plant the pole that is on the inside of the turn and rise up. At the same time, start transferring weight to the outside ski and steering the inside ski to the parallel position. Younger children may have difficulty planting the pole and keeping the skis parallel until the fall line. Children more comfortable with the skill should be able to unweight quickly shifting to the outside ski following the pole plant and allowing the skis to close to the parallel position before the fall line. Once the skis are parallel, the steering force is maintained and the skis continue to skid in an arc. As children perfect the elements, edging can be introduced to reduce the amount of skidding. Edging is achieved by allowing the hip and knee to move more to the inside of the turn putting the outside, or downhill ski, more and more on edge by bending the knees into the hill to prevent side slipping.

Exercises:

- To improve balance, the poles can be held in the cookie tray fashion. Once the weight transfer and balance over the outside ski is more natural, the pole plant can be introduced.
- To help with unweighting and weight transfer, transform the children into frogs! From an exaggerated crouch in the wedge position, the children shout “RIBBIT!”, jump up completely off the snow, land on the outside ski, and continue to turn. Any degree of success is wonderful! The goal is to reduce the jumping energy until the skis no longer leave the snow. However, the unweighting will still be a visible rising action that will make the skis lighter and easier to turn.
- Further skill development comes from using smaller and smaller wedges to initiate the turn. The game becomes one of “how small a wedge can you make to start your turn?!”

BASIC TELEMARKING

Purpose: To introduce a turn used especially in powder snow while backcountry skiing or on alpine slopes in more demanding conditions.

Terrain: A smooth, gentle slope with a flat outrun.

Mechanics:

- *Telemark Straight Running:* Children stride one ski ahead to a point where the rear ski tip is midway between the tip and boot toe of the lead ski. The body is in a relaxed ready position with hands held low and forward. The hands are well separated to aid balance. The rear thigh is never farther back than vertical (a common mistake that should not be allowed to develop into a habit). The lead foot is flat on the ski while the rear foot is flexed at the ball of the foot. The body weight is equally distributed between front and back.
- *Basic Telemark Turn:* Children rise and stride one ski forward while simultaneously steering it across the path of the rear ski. Once a large enough wedge has been created, the weight is distributed equally between the feet. The skis are pivoted the same as in the wedge turn. Hold the "tele-wedge" until stopped. Unlike the wedge, it is quite all right for the lead ski to touch the tip of the rear ski while in the telemark position.
- *Linked Telemark Turns:* Instead of finishing in a telemark position, let the rear ski come parallel to the lead ski at the end of the turn. Before momentum is lost, rise and stride into the new turn.

Exercises:

- *Telemark Strait Running*
    - On a flat surface, assume the telemark position by striding ahead.
    - Rise and stride into a new telemark position, making all movements smooth and fluid.
    - Repeat several times and watch for signs of over striding (the rear thigh angled back past the vertical).
    - From a telemark position, kneel down and touch the snow. Notice that the body height, and thus the center of gravity, can be varied without a further separation of ski tips.
    - Glide down the slope from start to stop in the telemark position without poles (just the "large tray of cookies"). Then try again with poles held horizontally, hands as far apart as possible. Remember to try these exercises again with the opposite knee down.
    - Start in a low telemark and halfway down rise and stride into a new low telemark with the opposite knee down. Encourage smooth transitions, rising and settling

down at the start and finish of every change. Try with and without poles, and try with more than one telemark position change per run.

- *Basic Telemark Turn*
    - Start down the fall line in a telemark straight run. Rise and stride into a telemark turn, holding the new position until stopped. Repeat for both left and right turns, with or without poles.
    - Repeat and encourage large semi-circular turns.
- *Linked Telemark Turns*
    - After trying two linked turns, have two poles set up to create an easy slalom. Increase to a three- and four-pole course as skills develop.
    - Have children experiment with hands wide versus narrow to improve balance.

Summary: The above methodologies have been developed to show you how to teach children to combine basic motions to build proper technique. In each lesson, learning takes place without lecture. Children learn from watching and doing. A success shart can often help motivate and reward children as they learn new skills.

BKL Success Chart

A success chart is a great motivational aid. It is also an excellent way to provide a self-paced, structured curriculum for BKL children. As you read through the directions below, please keep in mind that every club's success chart will be different. These suggestions are just meant to be a guide.

How to Make a Success Chart: You will need poster board, a yardstick, and markers

1. Determine what general categories you want to have on your checklists. In addition to the basic ski skills, you'll probably want to have some basic safety and equipment care competencies as well. There are many areas related to skiing that you can include: fitness (various strength exercises, dryland hikes, and/or ski games), races (watched, volunteered at, and/or entered), and trails (completed and/or kilometers covered). Make sure to include fun and even silly checklist items like skiing downhill backwards or skiing in a costume!
2. Leave a header on top for 4-6 categories and just below each write the checklist of associated skills and accomplishments.
3. Create a vertical column on the left (approximately 1" high x 4-5" wide) for each child's name. You may set it up so every child in your club tries for every skill, or make different charts for different age groups/levels/interests.
4. Fill in the grid on the chart with the yardstick.
5. Post your chart at a height convenient for children.
6. Use star stickers or check marks with colorful markers to show progress and accomplishments.

Below you will find suggested categories to head your success chart. Beneath each category are suggested skills. Choose from these to suit the needs and goals of the children in your club.

Suggested Categories and Skills for a BKL Success Chart

Smart and Healthy

- Use sun block
- Wear a hat and mittens
- Ski with a water bottle
- Bring a snack to practice
- Bring dry clothes to change into

Equipment Care

- Bring your skis, boots, and poles to practice
- Kick wax your own skis
- Glide wax your own skis
- Dry out boots and clothes after practice
- Put skis away after practice with ski straps

Adventure

- Ski in all weather: rain, sun, snow, wind (with the exception of thunder/lightening)
- Build a jump at home
- Ski a 5K trail without stopping
- Go on a ski tour
- Ski all the easy/blue circle trails at local ski area
- Identify animal tracks, trees, and/or birds
- Backcountry ski off groomed trails
- Ski at night

Safety, Responsibility, and Sportsmanship

- Use the "buddy system"
- Know what to do in case of an accident
- Know what to do in case of frostbite or hypothermia
- On time for practice and/or races
- Carry my own equipment
- Help the club coach carry things
- Support my teammates
- Be courteous to other people you see on the trails
- Give way to people passing you on the trails

Skills/Lessons

- Falling down and getting up
- Assume basic athletic stance
- Star turning
- Side stepping
- Uphill side-stepping
- Wedging
- Wedge Braking
- Wedge Turning
- Herringboning/duck walking
- Kick turning
- Double poling
- Kicking double poling
- Striding without poles

- Diagonal striding
- Skating without poles
- Skating with poles
- Skate turns
- V1 skate planting with left leg
- V1 skate planting with right leg
- V2 skate
- V2-alternate skate
- Gliding christie
- Elementary christe
- Telemark turning

Racing

- Participated in a BKL race
- Helped out at a BKL race
- Learned the names of people on the US Cross Country Ski Team
- Watched a cross country ski race in person or online

Chapter 6: Games

"Play is the finest system of education known to man." Neville Scarge

Games are at the heart of the BKL program and should be incorporated into every club gathering. Games teach balance, coordination, feel for the snow, and agility. Games provide challenge, stimulation, and an opportunity for everyone to feel successful. Games teach cooperation and are instrumental in transforming a group of individuals into a community.
But most importantly, games are FUN!

Having said this, we must find a balance between playing games and other learning activities. One model is to work on a skill, play a game that reinforces the skill, and then return to the skill to reinforce what was taught and provide feedback. The bottom line is:

1. Play games purposefully—not because you have nothing else to do
2. Integrate games into your practice—not the other way around
3. Don't play games for too long. Observe the children. Sometimes ten minutes is adequate. Modify the game by adding more balls, goals, or rules or move on to a new game or something entirely different.

How to Use Games: Use games to involve everyone. Children unwilling or unable to play can be officials or helpers. Games also provide an opportunity to integrate caregivers/parents into club activities. Give newcomers and visitors a chance to watch and, if possible, participate in club games. Unless stated otherwise, all of the games listed in this chapter are played without poles.

The following guidelines will help you to use games successfully:

1. Identify what games you will use before practice. Use this manual to help you figure out the games that will reinforce the skills you want to develop.
2. Have everything you need to play the game and the area where it will be played prepared before practice.
3. Divide kids up BEFORE you go out, if at all possible. Read off the teams you have elected. Letting children pick can result in hurt feelings. You can always count off "1,2,3,4" if you need four groups, with "1's" being a team, "2's" being a team, etc. Make adjustments on the fly if teams prove uneven.
4. Don't let the game go on for too long. Call for a rest or switch to something else when you see signs of fatigue or boredom.

GAMES TO START PRACTICE

There is always a time gap between the first and last child ready for practice. The larger the group, the bigger the gap. Prepare an obstacle course, a slope with a jump, or an area for tag so that those who are ready for practice early can play while they wait for their teammates. You can also have an assistant leader organize a game of "Hokey Pokey" or "Simon Says" while the leader is preparing the rest of the children.

Hit the Deck: When the leader calls "Hit the Deck" everyone must fall and then get up by rolling onto their back to untangle skis (like a dead bug). Then they place their skis on the snow parallel to each other (and perpendicular to the fall line if on a hill). Next they move forward onto their hands and knees before sliding one ski forward at a time and standing up.

The Hokey Pokey: Stand the group in a circle and sing/say: "*Put your left ski in, put your left ski out, you put your left ski in and you shake it all about. Do the hokey pokey and you turn yourself around. That's what it's all about.*" Do whatever the lyrics tell you to do. Repeat with various body parts and pieces of equipment.

Hopscotch: This game is the same as the game of squares drawn on pavement with chalk. Use food coloring or simply draw the squares in the snow with a ski pole. Use an extra hat or a pine bough to throw on the hopscotch square.

Red Light/Green Light: Have the children line up and start skiing towards you. Then say, "*Red Light*!" Give children 5 seconds to stop and try to hold the position they were caught in. When you say "*Green Light*" they can begin moving again. First child to reach you gets to be the next caller. This is a good game for practicing stopping.

Simon Says: This game is popular with younger children. *"Simon says step sideways; Simon says hop up and down, etc."*

GROUP SKIING GAMES

The Blob: "The Blob" is a type of tag. Play in an area with a defined size. Start the game with two children joining hands to become "The Blob." They ski while holding hands until they tag someone else. "The Blob" now has three people. They ski until they tag a fourth person. Then the Blob splits up into two 2-person Blobs and keep searching for more people. Tip: the size of the field is important— too big and the Blobs won't be able to tag people. Encourage the Blobs to work together to "sweep" the field.

Capture the Flag: Can be played with flags or any other easily "capturable" object. Full game description HERE.

Duck, Duck, Goose: Arrange the children into a circle facing the center. Choose one child to be "it." This child skis around the outside of the circle tapping every other child, saying "*Duck, duck, duck, . . .*" then they tap someone and say, "*Goose!*" The "goosed" child jumps up and chases the "it" child, trying to catch them. That child is then "it", and starts the second round of the game.

Egg Search (with or without poles): No need to wait for Easter! Use small candies and scatter them in a field or open woods while children are not watching. Younger children start two minutes before the older children, if working with different ages.

Ghostbusters: Spread the group out in a field (or gym) in a random formation. Choose one child to be the ghostbuster. All others are ghosts. Anyone tagged by the ghostbuster becomes the haunted house and must stand with arms and legs stretched out to the side. Haunted houses are freed only when a ghost goes under their legs. Haunted houses must remain stationary when tagged. The game starts when you yell "*one, two, three, ghostbusters!*"

Hares and Hounds: The hares get a two minute head start into a wooded area. An overgrown field is ideal terrain. The hounds are released to track down the hares who can hide or run. The hares are given long streamers, ribbons, or scarves to wear as tails. When a hound catches/tags a hare, the tail is collected as a trophy of the hunt. The game continues for +/- 10 minutes when a whistle calls everyone in. The sides switch and hares become hounds and hounds become hares. Who can catch the most hares? Count up the trophies from the hunt. Which side had the best hounds?

Mystery Time Race (with or without poles): This type of race is designed for anyone in the group to be able to win regardless of ability. Pick an approximate window of time for the activity, say 10 to 15 minutes, and select one child to pick a time in your time window. Write down the time they choose and hide it. Start the group out skiing, telling them to be back between 10 and 15

minutes. Score the race by those that come back closest (absolute time) to the *mystery time.* Distance, speed, and style are of no concern.

Obstacle Course: Ski over bumps, under a rope, around poles and bushes, and sidestep up a ramp or hill etc. Turn the course into a relay.

Red Rover: Each team has a turn to defend a square field space from invasion by the other team. When the defending team is ready, it challenges a member of the attacking team to try to ski through the field to the other side. *"Red Rover, Red Rover, send the (team name) right over."* The team members then try to rush or sneak through to the far side without being tagged. The greater the number of children that reach the other side of the field, the higher that team's score. Each team takes a turn playing offensive and defensive positions.

Rock, Paper, Scissors: Divide children into two groups. They play on a field that has two well-defined "end zone" lines and side boundaries. The width of the field should be roughly half the length. Each group huddles at its end zone and chooses 2 signs: one to be used as their first signal and the other as a back-up in case of a tie. Teams then ski to the center of the field and face each other spread out along the width of the field. At the command each team presents its signal—the losing team then flees toward its end zone with the winning team in pursuit. Tagged children go over to the winning team. Repeat until a time limit is reached or there is only one team.

Sharks and Minnows: Minnows line up on the "beach" with one shark in the "ocean." When the shark yells "*minnows, minnows, cross my ocean*!" all the minnows have to ski across the "ocean" to the beach on the other side. The beaches are safety zones. If a minnow is tagged they become a shark. Continue the game until only one minnow is left.

Follow the Leader: Everyone lines up behind the leader and then copies all the movements the leader does such as snowplowing, lying down on the snow and then getting back up, double poling, etc. Rotate who is the "leader." You can also try this activity through an obstacle course.

Ski Soccer: Children play soccer on skis but use their hands instead of their feet to move the ball. With a large group, try using two balls.

One-Ski Soccer: Children only wear one ski and kick with their free foot (no hands).

Dodgeball: You do not have to divide into teams for this game. Make sure there are plenty of balls available. Children must avoid being hit by other players' balls while simultaneously trying to throw balls at the other players. If hit, there are a variety of options for getting back into the

game including doing a specific activity like 5 jumping jacks or star jumps. If you play "Revenge Dodgeball", hit players can resume play when the person whose ball hit them gets hit by a ball.

Flag Tag: Spread children out in a field and give all players a flag or strip of cloth to tuck in their coat pocket (leave part of the flag hanging out). On the start signal children try to steal the other children's flags. Once you lose your flag, you cannot ski but must keep one foot on the flag on the ground. You can reach out and steal the flag of someone else skiing by you to reenter the game. Last person with a flag wins.

Freeze Tag: Start with a few taggers. When someone gets tagged they are frozen. There are many variations for how they can get unfrozen (the person who tagged them gets tagged or they do an activity – i.e. sing a sing, do jumping jacks, push-ups, etc).

Noodle Tag: Every child skis around with pool noodle that they use to tag the other children with rather than their hands.

What's Around the Corner?: Set two or three stations along the trail. Children must stop and do something at each station like say the first half of the alphabet, count backwards from 25 to 0, spell their name and mailing address, switch poles to opposite hands, do some toe touches, or sing one verse of a favorite song, etc. You can ask younger and older children to do different things at each station.

Ultimate Frisbee/Ball: No stop in play is allowed in this game. When children are tagged, they must give up the frisbee/ball. Children may hold onto the frisbee/ball for five seconds or five strides, whichever comes first. Ultimate Ball game description HERE.

Scavenger / Treasure Search: Pass out a list of easy to find items to each team. A 10-15 minute time limit will maintain excitement. Use natural items (leaf, pine needles, stone, and/or sticks), clothing (red hat, green scarf, and/or blue mitten), and special objects that teams can keep (ribbons, flags, and/or badges). State-specific scavenger hunt images for Maine, Massachusetts, New Hampshire, New York, and Vermont available here: https://nensa.net/2021/08/25/bill-koch-league-scavenger-hunts/.

Wedge Snake: Three or four children line up as close to one another as possible in the wedge position. Children hold onto the waist of the person ahead of them. You can make this game more difficult by adding children to the snake or by requiring that children turn while going downhill.

RELAY AND RACE GAMES

Relays are one of the most effective and fun ways to involve children in activities where they learn by doing. However, caution needs to be observed to prevent the slowest, most awkward, or least experienced children from standing out.

1. Avoid placing children who are less skilled at and/or newer to skiing in the first or last leg of a relay.
2. Try mixing children who are less skilled and slower at skiing with children who are more skilled and faster at skiing.
3. PAY ATTENTION. Yes, there is always a lot of cheering and backslapping that accompanies relays, but are any children standing back and feeling badly because they "cost" their team the event?
4. Be prepared to make some types of relays optional if you observe that some children don't like them.

Backwards-Forwards Race (with or without poles): This is a two person race where the team members start back-to-back at the start/finish line. At the sound of the start signal they ski around the race course loop in opposite directions and continue skiing in opposite directions until they meet their partner. At that point they turn around and retrace their routes back to the start line. The team finishes only after both members arrive back at the start/finish line. The first team pair back at the start/finish area wins. Pair fast children with slow children to make the race closer.

Beanbag Biathlon Relay: Children ski a lap of a short course and stop at the "firing range" to throw bean bags into a box until they get three "hits" (three beanbags in a box). Then they ski on to tag their partner. If you don't have beanbags you can use snowballs or tennis balls. Leaders and caregivers/parents help return the bean bags to the "firing line" so that there is ammunition for the next child.

Catalog Relay: You need an old catalog, a piece of paper, a clipboard, a pencil, and a stopwatch or watch. Place the catalog about 100 meters from a starting gate. Mark the catalog's location with a pole. The child in the starting gate is given a page number. The object of the game is to ski to the catalog, find the page number, tear it out, and return to the starting gates as soon as possible. The child with the fastest time wins. Appoint some children as official scorers and timers.

Caterpillar Relay: Teams of four line up with children in single file formation. Each child places skis outside the person in front of them. The lead child on every team starts with skis together. Teams then hobble, shuffle or do whatever it takes to get their caterpillar over a marked goal line.

Chariot Race: Divide the group into teams of two. One partner lines up behind the other. An old bicycle tube, rope, or belt is put around the waist of the child in front, and the child in the back holds onto the "reins." The child in front then pulls the child behind to a designated point and back. When a pair has finished, they tag the next team. The fastest team wins. If there are enough tubes/ropes/belts, all teams can go at once.

Circle Relay/Barrel Racing (with or without poles): Children ski to a pole/barrel, circle it twice, and ski back to tag the next team member. Each team has its own turning pole/barrel.

Cross Country Slalom Relay (with or without poles): Flags can be set on flat terrain, an uphill, or an easy downhill. Leave plenty of room between slalom flags for children to pass each other unless you have enough flags to make a dual slalom. You can set up two courses side-by-side on a short, relatively easy uphill and have children start head-to-head. They can ski up the hill and then back down between the slalom flags.

Double Pole Contest (with poles): Set up two flags or poles ~25 meters apart. Ask each child to count the number of double poles they use between the flags. Then ask each child to ski the route with fewer double poles. See who can do the least.

Double Pole for Distance (with poles): Make a starting line and see who can travel the farthest with ten double poles. Have each child mark their place and try again for their personal best.

Double Pole Drag (with poles): Put an old bicycle tube around the waist of the front child and have the second child hold onto the tube. The front child double poles dragging the second child behind. When they reach the end of the course, the children swap places and repeat the activity.

Double Pole Long Jump (with poles): Draw a "poling line" in the snow. Let each child back up to get good momentum. The child then executes a big double pole on the double poling line and glides to see who goes the farthest. They can try the activity multiple times to see if they can improve against themselves.

Egg Relay: Get some big spoons and decide whether or not you want to use uncooked eggs. If an egg breaks, a leader can leave the starting line with a replacement egg and ski to the site of the catastrophe. Set up a small loop in a field and break children into teams. They must complete the loop with their egg and pass it off to their teammate as the "tag."

Holding-Hands Relay: This game is popular with younger children. Partners must ski without poles and while holding hands. If one child falls down the other helps them up while still

holding hands. The lead-off pair skis the loop—keep the loop easy—and then tags the second pair.

Interval Relay (with or without poles): Two children alternate laps for three to 10 laps each. This relay provides excellent training and is a good activity for older children in the middle of the season. Choose the technique you wish to work on as the format for the relay: double pole, skating, striding, hill-climbing, downhills, etc.

Medley Relay (with or without poles): Have three or four short loops of different varieties: flat, a hill-climb, downhill, mixed-terrain, etc. Children can start from one exchange zone or have exchange zones along the trail at convenient locations.

Equipment Relay (start with poles): Children race 5 times around a short loop alternating laps with their partner. After tagging their partner, children must take off one pole or ski for their next lap. The relay finishes with a running lap. Can keep the race going by having children put their equipment back on with 5 more short alternating loops.

No Ski Start: Children start with their skis off, run about 10 meters, put their skis on, and then complete the relay.

Peas-on-a-Plate Relay: Using frisbees as plates and tennis balls as peas, relay teams of three or four take turns collecting a pea on their plate and then passing the plate to their teammate until the plate is full. Pre-count to determine how many tennis balls fit on a frisbee. The start line should be about 10 yards from the tennis balls. Scatter the tennis balls to spread the competitors. Spills are common and if the plate empties the team has to start over again one pea at a time. As children get better at this game, add in some varying terrain and a few obstacles.

Push the Piggy to Market (with or without poles): Children use a ski pole to push a ball along a short trail (25-50 meters), turn around a flag, and return to tag their partner. Their partner then goes through the same procedure. Alternatively, children kick a ball with a ski tip as far as possible in two minutes. When the two minutes are up, the next team member takes over for two minutes, and so on.

FOR SLIDING AND GLIDING

Furthest on One Ski: This exercise is designed to work on balance. Pick a tracked hill within the ability level of the group. You can decide whether or not to have the group take off one ski. Line up the children to go down the hill one at a time. Keep track of who can go the longest distance balanced on one ski. Change skis and learn to balance on the other side.

Limbo: Get small to ski under a pole that the leader is holding over the trail.

Juggler: Ski downhill balancing a snowball on your head. Who can ski the farthest before it falls off? Ski beside a partner and play catch with a snowball.

Railway Tracks: Instructor skis first and children follow in the instructor's tracks. Lay a streamer or rope across the track for children to jump over.

Scooter: This activity helps develop strong kicks for diagonal stride. Have children on one ski in a straight track. Tell them to kick off with their non-ski foot like they are on a scooter. A pole can be held crosswise to simulate handlebars. Change skis and repeat the game. Form the exercise into a relay race for a group activity or set up two poles and have children see how few kicks they can make to get between poles. This variation helps develop balance.

Gliding Contest: Have everyone double pole to a specific point at the top of the hill and then ski down and see how far they can glide. They can do this multiple times to compare their own gliding distance.

Ski the Bumps: Ski over bumps like a car on a bumpy road. Use your legs like shock absorbers.

FOR DOWNHILL SKIING

Pie Making Contest: See who can make the widest slice of pie.

Pie Slices: Identify five pieces of pie from narrowest to widest wedge. The leader calls out numbers of the pie for the children to execute. Alternatively children could call out the number of their pie slice as they ski down.

Red Light/Green Light: Play on a downhill. This variation on the game emphasizes control through wedging.

The Squeeze: Set two poles side by side so the children can ski straight between them. Then have them wedge down and close the wedge to squeeze between the poles. They can open up the wedge on the other side to stop.

Leapfrog Downhill: Pick a very gentle hill on a day when the snow is soft. Separate the group into smaller groups of about the same height. Start the first child in each group gliding down the hill and stop them a short distance down. This child must then crouch down so the next child can ski-straddle over them as in leapfrog. Continue the progression until the last child is down the hill.

Dual Slalom: Set up two identical courses side by side and have pairs of evenly matched children race to the bottom. Use poles, flags, cones, or random pieces of extra clothing to mark the courses.

Fly Like a Plane: Hold your arms out like wings and bank turns like an airplane.

Human Slalom: Have children line up on the fall line. The top child turns around each of the children and stops at the bottom. The next child "peels off" from the top and weaves through the human poles to the end of the line.

Race Cars: Kneel on skis and race downhill steering with hands on ski tips. Give children different ways of coming back up the hill.

Round the Peg: This exercise is designed to teach quick downhill turning ability and quick transitions to uphill skiing. Pick a downhill within the ability level of the group. Place a peg or ski pole on a challenging portion of the downhill slope. Have the children ski down, go around the peg, and quickly return to the top of the hill. Depending on the group, you can time them.

Slalom Course: Start with good spacing between the poles for easy turns, then move the poles closer together for quicker turns.

Ski Jumping : Make sure you create a jump with a safe outrun.

Group Icebreaker Games

These games are helpful to get children feeling comfortable in the group, and will help break down social barriers. It is worthwhile to spend time creating a positive team culture early in the season and these games can be done either on snow or on foot.

Name Game: Form a circle. The first time around each child and instructor says their name and a fact about themselves (like where they live, their favorite food, or their favorite thing about winter etc). The next time around each person says their name and fact, along with someone else's. You can also go around and each person has to introduce the person next to them in the circle to the group.

Eye Contact: Children form a circle and must introduce themselves to and switch places with the first person they make eye contact with.

Form a Line: There are countless ways to play this game. The idea is to give children a variable to organize themselves by. The simplest is to have players alphabetize themselves by first name. You can make it harder by using children's last names. Try it again without talking for an extra challenge. You can also have players organize themselves by height, hat color, etc. The possibilities are endless!

Tarp Game: The ground is a lava (or freezing water or a shark filled river etc.) and the only raft your group has is a tarp that everyone stands on. The object of the game is to flip the tarp over without anyone touching the ground. This can be done on skis if your tarp is big enough. Try with no talking for an extra challenge.

How Slow Can You Go: Children line up at one end of the game area (field, room, stadium, etc). When the leader says "*Go!*" everyone must move towards the opposite end of the game area as slow as they possibly can. Everyone must remain in forward motion. Stopping is not allowed! The last one to cross to the other side wins.

Squish Race: The group breaks up into teams of two and each team is given a balloon or ball. The team must hold the balloon or ball between their bodies with no hands. Teams race to a finish line and if a ball is dropped along the way, the team must start over.

Face Pass: Form a circle. The first person makes a funny or unusual face and "passes" it to the next person who must imitate the face, and add another face of their own. The third person in the circle must imitate both previous faces, before adding their own and "passing" it to the next person. Keep going until everyone has a turn.

Lava River: Each child is given a raft (square of cardboard, small mat, etc). The players can only step on these to cross the lava river (a designated area of the field), and each raft must always have someone touching it or it will float away. Players must use teamwork to figure out how to get across without losing a raft or touching the lava.

Fib Pass: Form a circle. One person acts out an action (i.e. brushing your teeth). The next person asks them what they're doing and the first person must fib and respond with another action that they were not doing (i.e. "I'm reading a book"). The second person then acts out the action from the first person's response, and the next person asks them what they're doing. The second person responds with yet another action (i.e. "I'm riding a bicycle). Keep going around until everyone has a turn.

Dryland-specific Games

Slow Soccer: Children earn one kick at a time by doing certain exercises (i.e. jumping jacks, sit-ups, etc). Can play with multiple balls to make the game more exciting.

Card Strength: Set a deck of cards on the ground and create a start/finish line a little ways from the deck. Assign an exercise to each card suit (i.e. hearts=push-ups, spades=lunges etc). Create teams and have the first member run out to the deck of cards, grab a card, run back to the start/finish line and do the exercise associated with the suit on their card. The rep count will equal the number on the card (face cards=10, aces=1). Once they finish their exercise, they tag the next team member.

Camouflage: This game is best played in the woods. The game starts with one person, the game leaders, shouting "*camouflage*" at which point everyone else scatters and hides. The game leader then counts to ten out loud with their eyes closed after which they begin looking around. If the leader recognizes anyone not completely hidden, they call out their name and location. If they are correct, that person is out. If not, that person does not have to reveal their identity, and is still in play. Once the leader can no longer identify anyone, they call out "*green light*" and counts out loud to five with eyes closed. The hiders have these five seconds to try and reach the leader, or at least get closer while still being out of sight. The first person to touch the leader without being seen is the winner and the next game leader.

Nordic Ski Lab Games Video Library:
https://nordicskilab.com/cross-country-ski-games-for-kids/

Chapter 7: Sample Practice Plans

These sample plans are to be used as guidelines. Each lesson should be altered to suit the skill level and age of the group, the weather, snow conditions, and terrain.

The lessons have been formatted to fit on a single page so that they can be printed or pulled up on a mobile device during practice for reference. Any notes (Sam forgot mittens so gave her a pair from lost and found), reminders to yourself (bring floppy frisbees), updates for parents (Cory is growing out of him boots), or accident reports (Jamie fell and slid on the corn snow, applied antibiotic ointment to scrape on their elbow), can and should be written on the lesson page and saved for future reference.

For caregivers/parents/leaders looking to introduce cross country skiing through their local school, check out the *Introduction to Winter Sports: Cross country Ski Curriculum Outline* written by Donna M. Smyth, Ed.D, Keene State College, for SnowSports Industries of America (SIA). These cross country instructional units for grades K-12 will be helpful for the athletic director providing a class-by-class curriculum for each grade/age group that addresses the national standards for teaching physical education. Document download available here: https://docplayer.net/21022399-Introduction-to-winter-sports-cross-country-ski-curriculum-outline.html.

Lesson One

Objectives

- Introduce children to their equipment including how to put it on and adjust it (do this indoors)
- Introduce basic kick waxing skills (not necessary for youngsters and/or beginners)
- Introduce the fundamentals of warming up
- Become familiar with balancing on a gliding ski and turning
- Introduce falling down and getting up, the ready position, star turns, and side steps.

Equipment

- Ski equipment and wax box
- Equipment for games

Terrain

- Indoor waxing area
- Sheltered flat terrain (protected from the elements)
- Packed area for games

Activity	**Time**	**Notes**
Instruction	15 min	- Basic kick waxing - Putting on equipment
Warm up	10-15 min	- Stretching - Dynamic warm up - Gather in circle and introduce everyone - Name game or other ice breaker
Skills Practice	15 min	Practice skills listed under instruction above
Fun	20 min	Games to reinforce skills
Evaluation	5 min	Ask questions about the day to be used as feedback. Such as *How did it go?*, *What was difficult?*, and/or *What was easy?*

Lesson Two

Objective

- Review last week's lesson
- Teach basic waxing principles (indoors before warm up)
- Introduce uphill sidestep, wedge, herringbone/duck walk, and kick turn

Equipment

- Wax box for demonstration purposes
- Ski equipment
- Equipment for games

Terrain

- Flat terrain and a packed gradual hill

Activity	**Time**	**Notes**
Waxing	5-10 min	
Warm up	10 min	
Instruction	15-20 min	**Review**: balance, warming up, putting on equipment **Teach**: uphill sidestep, herringbone/duck walk, wedge
Skill Practice	15 min	Practice skills on flats before moving to uphill
Fun	30 min	Uphill relay game to reinforce skills
Evaluation	5 min	

Lesson Three

Objective

- Review last week's lesson
- Teach participants how to dress warmly and layer their clothes
- Introduce double poling, kick double pole, and the wedge turn
- Develop cooperative and team skills

Equipment

- Wax box for demonstration purposes
- Clothing for demonstrations
- Equipment for games
- Ski equipment

Terrain

- Flat terrain and a packed gradual hill

Activity	**Time**	**Notes**
Waxing	5 min	
Warm up	10 - 15 min	Discuss layering and staying warm while you warm up
Instruction	20 min	**Review**: wedge, herringbone/duck walk **Teach**: double pole, kick double pole, wedge turn
Skills practice	15-20 min	Practice skills listed above by doing double pole relays and wedge slalom.
Fun	15 min	Recommended games: Downhill runs and Chariot Race (see Games chapter on page 80)
Evaluation		

Lesson Four

Objective

- Review last week's lesson
- Introduce striding without poles and the diagonal stride
- Introduce knowledge of safety and trail etiquette

Equipment

- Information on safety and trail etiquette
- Ski equipment and wax box
- Equipment for games

Terrain

- Sheltered flat terrain (protected from the elements)
- Packed area for games

Activity	**Time**	**Notes**
Waxing	10 min	
Warm up	10 - 15 min	Stretching exercises while discussing safety and trail etiquette
Instruction	20 min	**Review**: double pole and kick double pole **Teach**: striding without poles, diagonal stride
Skill practice	10-15 min	Fun relay with and without poles
Fun	15-20 min	**Recommended Games:** What's Around the Corner and Partner Relay (see Games chapter on page 80)
Evaluation	5 min	

Lesson Five

Objective

- Review last week's lesson
- Introduce skating with and without poles
- Introduce ski touring and how to pack a backpack

Equipment

- Information on ski touring and a packed backpack
- Ski equipment and wax box
- Equipment for games

Terrain

- Sheltered flat terrain (protected from the elements)
- A packed gradual slope
- A packed area for games

Activity	**Time**	**Notes**
Warm up	5-10 min	While warming up, discuss ski touring and what to pack
Instruction	30 min	**Review:** diagonal striding **Teach:** Skating without poles
Skill Practice	20 min	No poles skate relay, longest glide on one ski competition
Fun	15-20 min	**Recommended Games:** Sharks and Minnows, other tag games, Chariot Race (see Games chapter on page 80)
Evaluation	5 min	

Lesson Six

Objective

- Review last week's lesson
- Introduce uphill diagonal stride and downhill step turn
- Teach frostbite and hypothermia prevention

Equipment

- Information on frostbite and hypothermia
- Ski equipment and wax box
- Equipment for games

Terrain

- Sheltered flat terrain (protected from the elements)
- A packed gradual slope
- A packed area for games

Activity	**Time**	**Notes**
Waxing	10 min	
Warm up	10 - 15 min	Stretching exercises while discussing hypothermia and frostbite recognition and prevention
Instruction	30 min	**Review**: Skating without poles **Teach**: Uphill diagonal stride, step turn
Skill practice	10-15 min	Relay: Uphill stride, step turn around a pole, wedge turns downhill
Fun	15-20 min	**Recommended Games:** Slalom Relay, Medley Relay, Hares and Hounds (see Games chapter on page 80)
Evaluation	5 min	

Lesson Seven

Objective

- Review last week's lesson
- Introduce gliding skills, skate turn, and marathon skate

Equipment

- Ski equipment and wax box
- Equipment for games

Terrain

- Sheltered flat terrain (protected from the elements)
- A packed gradual slope
- A packed area for games

Activity	**Time**	**Notes**
Waxing	10 min	
Warm up	10 - 15 min	
Instruction	30 min	**Review**: Uphill diagonal stride **Teach**: Skate turn, gliding skills
Skill practice	15 min	Games and relays to reinforce weight transfer
Fun	15-20 min	**Recommended Games:** Red Rover and Chariot Race (see Games chapter on page 80)
Evaluation	5 min	

Lesson Eight

Objective

- Review last week's Lesson
- Introduce V1 skate and V2-alternate skate

Equipment

- Ski equipment and wax box
- Equipment for games

Terrain

- Sheltered flat terrain (protected from the elements)
- A packed gradual slope
- A packed area for games

Activity	**Time**	**Notes**
Waxing	10 min	
Warm up	10 min	
Instruction	30 min	**Review**: Skate turn **Teach**: V1 skate, V2 alternate skate
Skill practice	10-15 min	Relay: mix up V1 and V2-alternate skate.
Fun	15-20 min	**Recommended Games:** Tag games
Evaluation	5 min	

Lesson Nine

Objective

- Review last week's lesson
- Introduce V2 skate

Equipment

- Ski equipment and wax box
- Equipment for games

Terrain

- Sheltered flat terrain (protected from the elements)
- A packed gradual slope
- A packed area for games

Activity	**Time**	**Notes**
Waxing	10 min	
Warm up	10 min	
Instruction	30 min	**Review**: V1 skate, V2 alternate skate **Teach**: V2 skate
Skill practice	10-15 min	Relay: Out and back with V1 or V2-alternate out and V2 on the way back
Fun	15-20 min	**Recommended Games:** Tag games, balance drills, one ski gliding
Evaluation	5 min	

Lesson Ten

Objective

- Review last week's lesson
- Review kick waxing and ski maintenance
- Introduce advanced diagonal techniques

Equipment

- Ski equipment and wax box
- Equipment for games

Terrain

- Sheltered flat terrain (protected from the elements)
- A packed gradual slope
- A packed area for games

Activity	**Time**	**Notes**
Waxing	10 -15 min	Review kick waxing and ski maintenance.
Warm up	10 min	
Instruction	30 min	**Review**: Diagonal stride, striding without poles **Teach**: Advanced diagonal technique
Skill practice	10-15 min	Place cones around a loop and mix up striding and stepping/running between cones. Practice with or without poles.
Fun	15-20 min	**Recommended Games:** Tag games (play with no poles and use diagonal technique).
Evaluation	5 min	

Lesson Eleven

Objective

- Review last week's lesson
- Introduce basic telemark turn

Equipment

- Ski equipment and wax box
- Equipment for games

Terrain

- Sheltered flat terrain (protected from the elements)
- A packed gradual slope
- A packed area for games

Activity	**Time**	**Notes**
Warm up	10 min	
Instruction	30 min	**Review**: Wedge turn **Teach**: Telemark turn
Skill practice	10-15 min	Practice telemark turns on a gradual downhill eventually moving to a more moderate slope.
Fun	15-20 min	**Recommended Games:** Downhill slalom, free play in powder!
Evaluation	5 min	

Lesson Twelve

Objective

- Review last week's lesson
- Introduce the christie turn

Equipment

- Ski equipment and wax box
- Equipment for games

Terrain

- Sheltered flat terrain (protected from the elements)
- A packed gradual slope
- A packed area for games

Activity	**Time**	**Notes**
Warm up	10 min	
Instruction	30 min	**Review**: Wedge Turn, Telemark Turn **Teach**: Elementary Christie, Gliding Christie
Skill practice	10-15 min	Practice turns on a gradual downhill.
Fun	15-20 min	**Recommended Games:** Downhill slalom
Evaluation	5 min	

Chapter 8: Dryland/Low-Snow Lesson Plans

By Stuart Kremzner

The goal of these lesson plans is to provide the BKL leader with a framework to operate in when there is not enough snow to ski. These plans can be implemented in a relatively small area, indoors or outside. The fundamental goal is to develop basic sport skills such as balance, rhythm, ski-specific timing, technique, agility, and general fitness.

This chapter is divided into three sections:

1) Basic lesson plans
2) Description of exercises including Dynamic Warm-up, Speed Ladder Drills, and Agility and Cone exercises
3) Age-specific modules that coaches/leaders can integrate into the lesson for different age groups

When running sessions, one of the best formats is to have stations where children are doing a specific exercise in smaller groups. When adding in age specialized exercises, just have 1-3 age specific stations that just those ages rotate through 2-3 times. For maximum effectiveness and continuity, add in these elements twice per week. As children advance, add in more tempo and timing changes to teach them more about regulating tempo and changing gears when it is time to sprint.

Can try some grass skiing if willing to scratch some ski bases…
https://www.youtube.com/watch?v=0AIEr-082WU&list=PLZrpBGJYys86T1-dW-GLuqgxzCu40Ae8-&index=3

Lesson One

Objectives

- Learn new exercises and basic ski movements
- Improve balance, coordination, and fitness

Skill Focus

- Using basic ski movements to become familiar with balancing on one leg
- Coordinating the upper and lower body

Equipment

- Cones, speed ladder, balls
- Equipment for games

Terrain

- Indoor area
- Sheltered flat terrain (protected from the elements)

Activity	**Time**	**Notes**
Warm up	15 min	Dynamic warmup
Drills	15 min	- Basic athletic stance - Single leg balance - Single leg balance with closed eyes - Single leg ball tosses
Agility Drills	20 min	Level 1 Agility Drills on page 114
Skill Practice	20 min	**Games:** Follow the Leader, Red Light Green Light, relays (see Games chapter on page 80)
Cool Down	10 min	Easy jogging or other activity
Evaluation	5 min	

Lesson Two

Objectives

- Learn new exercises and basic ski movements
- Improve balance, coordination, and fitness

Skill Focus

- Using basic ski movements to become familiar with balancing on one leg
- Coordinating the upper and lower body

Equipment

- Cones, speed ladder, balls
- Equipment for games

Terrain

- Indoor area
- Sheltered flat terrain (protected from the elements)

Activity	**Time**	**Notes**
Warm up	15 min	Dynamic warmup
Drills	15 min	- Skills from Lesson One - Single leg balance with arm swing - Single leg balance with arm and opposite leg swing
Agility Drills	20 min	Level 1 Agility Drills on page 114
Skill Practice	20 min	**Games:** Follow the Leader, obstacle course, tag games (see Games chapter on page 80)
Cool Down	10 min	Easy jogging or other activity
Evaluation	5 min	

Lesson Three

Objectives

- Learn new exercises and basic ski movements
- Improve balance, coordination, and fitness
- Develop ski-specific skills

Skill Focus

- Becoming familiar with balancing on one leg
- Coordinating the upper and lower body

Equipment

- Cones, speed ladder, balls
- Equipment for games

Terrain

- Indoor area
- Sheltered flat terrain (protected from the elements)

Activity	**Time**	**Notes**
Warm up	15 min	Dynamic warmup
Drills	15 min	- Partner falling drills with an emphasis on ankle flexion - Single leg balance with arms (eyes shut) - Single leg hops - Double leg hops
Agility Drills	20 min	Level 1 Agility Drills (page 114)
Skill Practice	20 min	Practice skills taught above and integrate into Follow the Leader and relays (see Games chapter on page 80)
Cool Down	10 min	Easy jogging or other activity
Evaluation	5 min	

Lesson Four

Objectives

- Learn classic technique-specific exercises
- Improve balance, coordination, agility, and fitness
- Develop ski-specific skills

Skill Focus

- Becoming familiar with balancing on one leg
- Coordinating the upper and lower body

Equipment

- Cones, speed ladder, balls
- Equipment for games

Terrain

- Indoor area
- Sheltered flat terrain (protected from the elements)

Activity	**Time**	**Notes**
Warm up	15 min	Dynamic warmup
Drills	15 min	- Skills from previous lesson - Double leg (bunny) hops 3x~10m (focus on extension of arms and legs) - Double pole motion (try with a hop) - Single leg hops - Double leg hops,
Agility Drills	20 min	Level 2 Agility Drills (page 118)
Skill Practice	20 min	Practice skills taught above and integrate into Follow the Leader and relays. Finish with a game (see Games chapter on page 80)
Cool Down	10 min	Easy jogging or other activity
Evaluation	5 min	

Lesson Five

Objectives

- Learn skate technique-specific exercises
- Develop lateral agility and balance
- Improve balance, coordination, agility, and fitness

Skill Focus

- Becoming familiar with skate technique and arm movements
- Coordinating the upper and lower body

Equipment

- Cones, speed ladder, balls
- Equipment for games

Terrain

- Indoor area
- Sheltered flat terrain (protected from the elements)

Activity	**Time**	**Notes**
Warm up	15 min	Dynamic warmup
Drills	15 min	- Skills from previous lesson - Explain basic skate motion - Side-to-side skate steps - Side-to-side skate hops - Double leg (bunny) hops
Agility Drills	20 min	Level 2 Agility Drills (page 118)
Skill Practice	20 min	Practice skills taught above and integrate into Follow the Leader and relays. Finish with a game (see Games chapter on page 80)
Cool Down	10 min	Easy jogging or other activity
Evaluation	5 min	

Lesson Six

Objectives

- Learn skate technique-specific exercises
- Develop lateral agility and balance
- Improve balance, coordination, agility, and fitness

Skill Focus

- Becoming familiar with skate technique and arm movements
- Coordinating the upper and lower body

Equipment

- Cones, speed ladder, balls
- Equipment for games

Terrain

- Indoor area
- Sheltered flat terrain (protected from the elements)

Activity	**Time**	**Notes**
Warm up	15 min	Dynamic warmup
Drills	15 min	- Skills from previous lesson - Double pole motion (try with a hop) - Skate hops sticking the landing on each side
Agility Drills	20 min	Level 2 Agility Drills (page 118)
Skill Practice	20 min	Finish with group game or relay of tennis ball biathlon, partner tag, obstacle course or Red Rover.
Cool Down	10 min	Easy jogging or other activity
Evaluation	5 min	

Core Strength and Dynamic Warm-Up Exercises

Core strength, flexibility, and general strength can easily be integrated into a pre-workout warm-up called a dynamic warm-up. The goal of this is to be a quick, functional, and highly productive session of exercises packed into 10 minutes or so (roughly the same time a child would usually spend jogging prior to a dryland session). This is a great, functional warm-up to use prior to intervals, hill bounding, strength training or any dry-land training session. If done twice a week, many gains can be made. This type of training has long been used by track and field athletes with great success. This routine efficiently addresses many areas of the child's body to improve general strength and flexibility necessary to maintain good body position, apply power efficiently, and reduce injury risk.

There are many exercises that can be used for this session. Ideally you will do two sets of two strength, flexibility, and core strength exercises. Exercises are selected and rotated in and out to achieve different group fitness goals and to keep the routine fresh and exciting.

Below are some basic exercises to select from. Pick 6-8 exercises and do two sets of 10 repetitions. After two weeks increase to 15 repetitions and after that increase the number of exercises. For a warm-up, keep total time to around 15 minutes. If you want to make this into a standalone strength/agility workout, then do 3 sets and add in some speed and agility exercises.

Make sure you coach children to maintain correct body position. Correct alignment is important for the development of good athletic posture and correct muscle firing patterns.

Key body position points are:

- Keep hips scooped (if hips are a bowl of water you want to keep them level so the water does not spill)
- Keep back flat and in line with hips
- Keep hips in line with shoulders
- Flex ankle at all times

Exercises (video: https://www.youtube.com/watch?v=95qYwDVvNas&t=1s)

- Air squats (0:12)
- Forward/backward lunge (0:27)
- Lunge jumps (0:55)
- Lying side raise (1:00)
- Fire hydrants (1:08)
- Bird dogs (1:14)
- Sky divers (1:22)
- Supermans (1:41)
- Swimmers (1:54)
- Kayakers (1:59)
- Hip flexor pedestal (2:10)
- Bridge w/leg raise (2:19)
- Mountain climbers (2:32)
- Reverse lying side raise (2:50)
- Critter crawls (video: https://www.youtube.com/watch?v=lKmcCMzDlsg)
    - Inchworm (0:16)
    - Crab (0:39)
    - Bear (0:55)

Agility Drills

The important things to emphasize with all of the agility drills are good body position (hips up, chest up, head up, hips and chest square) and rhythmic mechanics. Have the kids set the tempo with the movements. For single leg exercises, classic ski arm movements can be utilized. For double foot movements, skate arm motions can be used.

Level 1

Speed Ladder Progressions 2x each:

1) Forward and backward run both feet in each square

L R
L R
L R
L R
L R

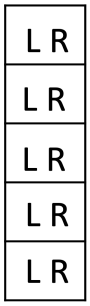
2) Forward and backward run one foot in each square

L
R
L
R
L

3) Forward run one foot every other square

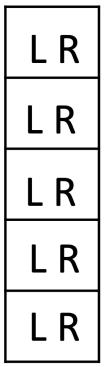
L
R
L

4) Forward and backward fast feet both feet in each square



5) Sideways both feet in each square

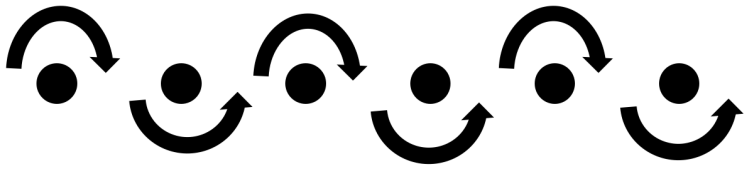
6) Double leg hops (coordinate arm swing with take-off)



Agility with Cones: For agility with cones, the sky's the limit with your creativity! You can set up slalom courses to run, backward run, skip, hop, you name it! Use the terrain you have to place slalom cones going uphill, sideways, and downhill. You can even use tree obstacles or hay bales to spice things up.

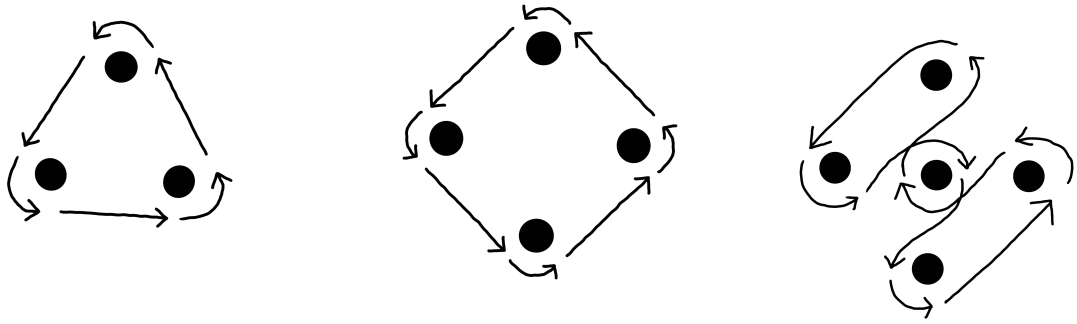
Multi-directional agility progressions can be done with figure 3, 4, or 5 formations. At each cone/junction, change the movement mode, body position (high or low), and/or tempo (fast, medium, slow). All of this is important in developing a sense of rhythm and tempo. This will translate exceptionally well to changing gears when skiing.

To increase the challenge, add more cones, lengthen the distance between cones, or increase the number of repetitions. Below are some ideas for starters. To keep children moving you can set up multiple stations.



- Forward/backward cone slalom with slow to medium tempo switch up (i.e. change gears halfway through)
- Forward/backward cone slalom with medium to fast tempo switch up

Figure Three, Four, or Five Agility Progressions: With these progressions the key points are good body position and ankle flexion. Make sure children have their feet, knees, and hips in line. If knees bend inward, have the child slow their speed.



Variations:

- Single leg hops switch legs at cone
- Forward shuffle, backward shuffle
- Left side shuffle, right side shuffle
- Skipping

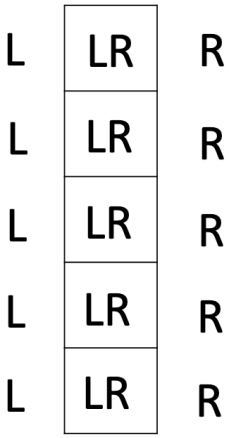
Level 2

Mix in 2-3 Level 1 exercises of your choice and the following exercises. For older children, add in soccer ball passes or medicine ball tosses as each child moves down the ladder. Focus on good body position (no sitting back), quick hands, and rhythmic feet.

Speed Ladder Agility:

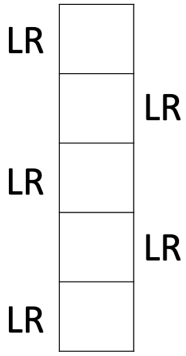
1) In/out side shuffle

2) Icky shuffle: Start on the side of the ladder with the left foot. With quick feet shuffle through the ladder to the right. Land inside the ladder on the right foot first and then shuffling to the left pushing off the left to land on the right foot on the outside of the ladder. Repeat going the other way.

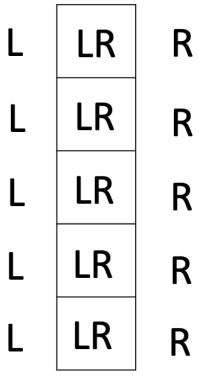


3) Every other box 2-leg hops

4) Side-to-side slalom/hops (get both feet outside of the ladder)



5) Hopscotch: Start with both feet on the outside, jump in with both feet in, then back out, and repeat.



Cone Agility:

- Slalom with obstacles to hop or jump over
- Skip with tempo changes at cones
- Ski walk with tempo changes at cones
- Medium forward jog, fast side shuttle, medium backwards jog, fast side shuttle
- Forward skate push-offs, backwards jog, backwards skate push-offs, forward jog

Additional Agility Exercises

- Hurdle steps over balls, sticks etc.
- Jump twist and land
- Partner mirrors movements

Age Sensitive Training Modules

These modules are specifically designed to be used as 15-20 minute break out sessions where they can easily be integrated into the lesson plan. Within the basic lesson plan the coach can add in specific elements to make the training more specific and effective for different level age groups. The module sessions can also be integrated into any on-snow practice as well.

Module 1

Age: Boys 8-10, Girls 7-9

Age Specific Elements: Balance, reaction time

Exercise	Notes	Key Points
Tennis ball start drops	Two children lie down in a push-up position. Third child drops a tennis ball 10 feet in front of them. Children get up, run forward, and race to grab ball.	Stay Low
Single leg hops	Hop on one foot keeping body weight centered. Focus on balance.	Flex at ankle
Whistle drill	Leader has a whistle and directs children with hand signals. Each whistle signifies a change in direction. Children must change direction as fast as possible.	

Module 2

Age: Boys 8-10, Girls 7-9

Age Specific Elements: Rhythmic motion

Exercise	**Notes**	**Key Points**
Speed ladder drills	Level 1 or 2 (see pages 114 and 118)	Quick feet, high hips
Skipping	Backwards and forwards skipping through a marked course or around obstacles.	
Rhythm change drill	Children alternate between skipping, running, and ski walking every 30 seconds at leader's signal.	

Module 3

Age: 10-12

Age Specific Elements: Movement efficiency, kinesthetic differentiation

Exercise	**Notes**	**Key Points**
Obstacle course stations	Set up various stations: - Long jump - Squat jump - Soccer ball pass at ~10 meters (no stopping, continuous passing) - Medicine ball toss - Crab walk	

Module 4

Age: 12-13

Age Specific Elements: Balance, coordination, movement adequacy

Exercise	Notes	Key Points
Obstacle course	Use a natural obstacle course or create one with jumps and things to skip over or crawl under, etc. Repeat several times. Can be set up as a relay.	
Easy tempo run or ski	Run or ski a rolling course at an easy pace and focus on efficiency.	

Chapter 9: Setting Up Noncompetitive Events

Think back to the basic philosophy of the BKL that was introduced in Chapter 1: *children should have the opportunity to have fun while learning how to cross country ski.* Outside of games and free play, one of the best ways to promote this is to attend or organize strictly noncompetitive events. These events should not take the place of racing—competition can be fun and extremely valuable when approached correctly—but they can be a great addition to your club's winter schedule.

Cross Country Cross (XCX)

Cross Country Cross (XCX) is a new and exciting discipline of skiing incorporating elements of a terrain park into a closed loop. In a competitive setting, XCX is essentially a sprint race with added bumps, slalom gates, sharp turns, etc. FIS defines XCX as the following:

"Cross Country Cross is a competition where competitors compete on a cross country ski course that includes both traditional and non-traditional elements such as natural and artificial terrain features, corridors, obstacles and tight turns, as well as different natural or artificial types of turns, jumps, waves and other skiing terrain features. The competition may be carried out as an individual interval start competition, or follow the finals format of an Individual Sprint Competition."

BKL clubs have been doing this for years—you don't have to reinvent the wheel in order to make a successful XCX course and you don't have to make it competitive! A few well placed snow bumps or rollers will let children experiment with new ways of using their agility, balance, coordination, and rhythm and help develop better all around athleticism and physical literacy. If you have your own place to hold practice and you have available snow, it can be really fun to have a permanent course or loop set up near your stadium or meeting area. This gives children who are dressed and ready to go early a place to stay busy and warm while they wait for practice to start. It also provides a format for fun low key competitions such as obstacle course races or relays and jumping contests.

It's important to be safety conscious when setting up any sort of XCX or agility course. All features should be well designed and maintained to keep children as safe as possible and to limit undue stress on equipment. For younger children, be sure that there is proper adult supervision any time features are in use.

What You Need (aside from snow): You will need cones, bamboo poles, rope, an existing playground or terrain with promising features, and a sense of fun!

Options to consider:

- Set up a course where children ski up a small hill and slalom down between cones or gates
- Set up two parallel courses and children can race each other
- Groom a short course that utilizes a side hill in a pattern that requires both left and right hand lead, short sharp climbs and descents, sharp corners, etc.
- Build a snow bump
- Create an agility course that might include:
    - 360 degree turns around trees, poles, or playground apparatuses
    - Ropes, 2x4's, or plastic pipes to jump over
    - Places where children have to duck low through existing playground apparatuse, a picnic table, or two poles tied together in a V
    - A section where children balance just on a left ski and then just on a right ski
    - Little jumps and/or rollers
    - Cones in slalom patterns to maneuver through
    - A place to ski backwards

BE CREATIVE. Think like a kid!

You can set up a simple course in just a few minutes. You can hold relays and organized activities in them or simply have them available as a place for children to play.

Mini-Marathons

The Mini-Marathon was the inspiration of the Stowe Nordic Club. Several local families, inspired by their skiing experiences at the Craftsbury Marathon, began hatching the idea of creating a child-oriented version. It was their experience as caregivers/parents/leaders/coaches in the Bill Koch Youth Ski League that children are capable of much more than they often realize. A long-distance, non-competitive ski event gives children an opportunity to acknowledge their own abilities and to feel good about themselves and their achievement. In 2004 the New England Nordic Ski Association presented its first "Club of the Year Award" to the Stowe Nordic Club for "pioneering the mini-marathon concept."

Preparing for the Mini-Marathon requires the collective work of several volunteers. The final meeting is an annual gathering at an organizer's house to make chili and finalize the trail maps. One important detail was ensuring the safety of children skiing alone, so they stated on the registration form that children under a certain age must be accompanied by an adult and all children were encouraged to ski in groups.

The Stowe Nordic Club hosted its 3rd Annual Bill Koch Youth Ski League Mini-Marathon on Saturday, January 8th, 2005. Eighty-eight people participated in the event. The course consisted of a 15K loop and a 25K loop, both originating at the Stowe Mountain Resort Cross Country Center. While the 15K loop traversed the trails at Stowe Mountain Resort, the 25K loop included a climb to the trails at Trapp Family Lodge. Participants enjoyed several food stops along both courses and a chili feast awaited them at the finish line. This was a timed classic tour, with cowbells awarded to all participating children.

"I will never forget that first marathon. Between 90 and 100 children were on the starting line. As I looked over the crowd I realized that our anticipated fear of children skiing alone had not materialized. Instead, families littered the starting area. It was then that I realized the hidden gift of this marathon. On this day families are given the opportunity to leave behind the day-to-day distractions that separate them and come together for a few hours of quality family time." (Deb Miller, co-organizer of the Stowe Nordic Mini-Marathon)

Mini Ski Festivals: A Planning Guide

This planning guide is based on the Central Vermont Middle Level Ski Fest Series, first run in North Central Vermont the winter of 1999-2000, with modifications from the 2021 BKL Mini-Fest Guide. Partners in the pilot Middle Level Ski Fest project were: Stowe Middle School, Peoples Academy Middle Level, Craftsbury Academy, Lamoille Union Middle School, and Harwood Union/Crosset Brook Middle School.

What is a Ski Fest?

A Ski Fest is several hours of organized fun for children on cross country skis. A Ski Fest is a largely noncompetitive series of fun events ranging from games to obstacle courses, all on cross country skis. The goal is to get children on cross country skis in an accessible, fun, entertaining, and enjoyable setting with lots of other children.

Ahead of Time:

- Set a date
- Avoid conflicts that might keep children from coming
- Coordinate with other schools or clubs
- Determine a location with enough space
- Arrange access to a warm place
- Parking
- Source of snow for building obstacle course
- Tracked/groomed trail
- Get permissions from venue if necessary
- Plan for advertising (posters; flyers; email outreach to individuals, schools, and clubs; social media; newspaper articles; etc.)
- Create an online registration, if applicable

Equipment

- Bibs (borrow or buy)
- Air horn (a great way to indicate time to switch events)
- Name tag stickers for participants, coaches, and officials
- Sign-up sheets/registration forms
- Flags to mark race courses, and other events
- Props for events (see detailed info below)

Staffing

- Registration
- Refreshments (setup and supervision)
- Clean-up volunteers

- Awards and announcements (emcee)
- Event directors and helpers (see detailed list below)
- Grooming, course set up
- Obstacle course design and construction (get kids to help with this fun project!)

Awards

- Ribbons/cowbells/medals for all participants
- Freebies from local businesses, or ski manufacturers (stickers, posters, water bottles, energy bars, etc.)

Refreshments

- During: Have water available to participants outside
- Afterwards: Hot cocoa, water, cookies/snacks (brought by caregivers/parents, supplied by a school, or donated)

Safety Considerations: The following guidelines are for official NENSA cross country ski races and also apply to Ski Fests.

- A "Search and Rescue Plan" should be present in written form at all sites. It should include:
    - Alerting the nearest medical facility of the date and time of the event
    - Alerting local medical transport service of date and time of event
    - Detailing the quickest and safest access and exit routes to various points on the course
    - Course monitors stationed at points on the course. They should be in radio contact with all other volunteers/event staff
    - At least one snowmobile staffed by an EMT or medical personnel stationed at/near the hub of activity.
    - NENSA Medical Plan Recommendations: https://drive.google.com/file/d/0BxrL323QfH8qTDZYX3FQdExSeEE/view?resourcekey=0-EUo_V8CuWTQe_ohLWjfPQg
    - NENSA Medical Emergency Plan Template: https://drive.google.com/file/d/0BxrL323QfH8qModSTWYzb3FaVk0/view?resourcekey=0-02Ea7VeD4yK-79GcNW-tIQ

THE AROOSTOOK YOUTH SKI FESTIVAL: A Review
Saturday March 5th, 2005, 10am-4pm
By: Northern Skiers Club, Caribou, Maine

This first annual festival was designed as a new and **COOL** way to celebrate all the ways kids can MOVE on a pair of cross country skis!! All skiing youth ages 5-13 were welcome to attend this unique one-day festival. The entry fee was only $10 and included lunch, entry to all events, a certificate of individual achievements, and a water bottle.

One of the goals was to give all kinds of kids a chance to be "successful" during the day so we designed a few new types of events so everyone could shine. While some kids have good endurance for a ski race, there are many more who do not but they still enjoy skiing and become skilled in other areas.

Event Descriptions:

- **Big Air EXPO:** How much air can each child get between their skis and the ground! Three jumps of various sizes. Helmets required for the larger jumps (only open when adults were present). Great upbeat music playing for the crowd and participants.
- **XC Speed Skiing:** Measured with a radar gun for maximum speed in miles per hour. A big hit!!
- **XC Power Ski Drag:** A measure of skiing power! Special sled designed with weight added for 20 meters. A Monster Truck pull on skis!
- **Double Pole for Distance:** A show of double poling ski strength with this arms-only event. Includes a double pole section and a marked glide section.
- **XC Slalom Course:** A few gated courses on a downhill slope. Gates aren't just for alpine skiers! Experienced skiers teach the children to carve turns.
- **XC Standing Jump Turns:** Jump up and turn mid air. We had 9 children do a complete 360!
- **XC Distance Event:** Freestyle (classic track available) 2k, 1.5k, 1k, or 500m with all courses visible to caregivers/parents and spectators.
- **Barrel Sprints:** 50m barrel sprint (25m to the barrel and back to the start/finish line). Five barrels set up, but most children chose not to go together.
- **Tandem Skiing Relays:** Two children on one pair of skis! A true display of teamwork.
- **Biathlon Challenge:** Take a "shot" at the bean bag biathlon targets.
- **Obstacle Courses:** Available ALL-Day with other activities including ski-joring demos, skiing teeter totter, skiing Limbo, and ski tours.

- **MASSIVE Sharks and Minnows game:** We had about 150 children and volunteers/adults all join in for a massive game of Sharks and Minnows with live play by play on the PA system. It was a great way to end the day!

In all, we had about 150 children, 50 volunteers, and another 100 caregivers/parents/spectators come for the event from all around. The most complicated part of the festival was scoring children in six different events before we broke up into more free time. Each child had a bib with numbers corresponding to their age group for scoring purposes. The following events were SCORED or noted for participation:

- Distance Ski Race: NO Times recorded, mark only that they COMPLETED the distance
- Slalom Course: NO Times recorded, marked only that they TRIED the slalom course
- Radar Speed Skiing: Fastest speed in miles per hour was recorded (event highlight for most kids)
- Double Pole for Distance: Length of their double pole induced glide was recorded
- Barrel Sprints: Times on this standardized distance that can be reproduced in future years to note improvement.
- Jump Turns: Large circles made in the snow with degrees marked (this can be reproduced each year as well for the children to note their improvement).

Final Notes:

The Northern Skiers Club helped to provide the 50 volunteers we needed to pull this event off. They are excited to hold it again next year. There were (by design) no POSTED RESULTS, and NO AWARD ceremonies! Each child left with a certificate which highlighted their own achievements. Everyone left a winner! We would not change much for next year. A few tweaks here and there maybe, but mostly we would like to find ways to get more children there to experience this one full day of fun on skis. We may find sponsors who can pay for the buses needed from all the surrounding towns. We can get 500 kids if they all have transportation right from their hometowns, so this is where we will focus some time and effort.

CONCORD-HOLDERNESS BKL MINI-FEST: A Summary
From Peter Hendel, NENSA Treasurer

During the 2021 ski season, volunteer leaders from the Concord and Holderness BKL clubs got together and decided to organize a joint club youth skiing Mini-Festival in the absence of the full regional Festival. As this was to occur during the COVID pandemic, the goal was to keep the event simple, safe, and fun. To that end, the guiding principals were:

- Limit participation to the Concord & Holderness clubs
- Maximize the opportunity for family time and limit the number of activities (less stress and physical contact)
- Require masks and self-screening
- Include traditional racing by age group, but design this activity so as to minimize pressure on the kids.

Site: Waterville Valley hosted the event. They were awesome in dedicating their north end "Bob's Lookout" and Osceola Campground as our stadium, and Osceola/Deer Run/Moose Run trails for racing and family skiing. In preparation, they groomed around all of the campground picnic tables so that families could safely spread out during the day. In addition, they hauled up a ton of firewood for S'mores and lunch use.

Event Schedule
9:30am – registration at Bob's Lookout. Families needed to ski from parking lot 2k to event site
10:30am – Racing by age group
12:00pm – Graduation Ceremony for 8th graders
12:30pm – Lunch – families packed in their own lunches.

Race Format: Racing was spectacular. Each race started with a fun double figure-8 agility ski around all of the campground picnic tables, and then each youngster completed their respective 3k, 1.5k, 1k, or 0.5k course. Our course layout allowed spectators to feel a part of the race despite being very spread out, and the kids created their own fun in the woods between races. No fencing, no course marshals.

We held the four races (girls following boys) at 10:30am, 10:45am, 11:00am, and 11:30am. Before each race we gathered the children together by grade which greatly decreased the stress of 'racing.' There was no start list and the chief starter started kids roughly in 10 -15 sec intervals and roughly in bib order. This provided time to calm a scared child, recognize a falling off mitten, and even have the pink gorilla race a too serious child for the first 100 yards.

Race Timing: By using the Webscorer's "Individual" race format, we could easily manage children that missed their start or who were not quite ready. For example, we were easily able to insert some late arriving Grade 1-2 kids into the grade 3-4 race without a hitch. Start and finish lines were adjacent and one iPad could easily punch start bib #'s and finish bib #'s with one assistant calling out numbers.

Cost: $5 per participant (including caregivers/parents) which went to Waterville Valley Adventure Center. All pre-organization and events were club volunteer run. We had 88 youth and 80 caregivers/parents attend.

Final Notes and Organizer Takeaways:

"This was my 16th BKL Festival in a row and the simplicity of it was magical as both an organizer of the day and I think for those in attendance. The sense of community and lack of structure created friendships and an enhanced love of Nordic skiing in the great outdoors." - Molly Whitcomb, Holderness BKL

"In reflecting on lessons learned this season, it is clear that neither of our clubs has ever had this kind of turnout for the New England Festival. Clearly this local event was accessible to a great many people who would not normally make the trip for a N.E. festival. Also, another big difference is that the little kids all knew the big kids and vice versa." - Peter Hendel, NENSA Treasurer

Ski Touring

Some of your club's most memorable and enjoyable practices can involve ski touring. Exploration, discovery, fitness, skill-building, and fellowship all come together on ski tours. Have caregivers/parents and/or additional coaches along to assist you. If your group is too large, break up into smaller groups. Don't allow children to race off at top speed. This activity is about going steady for a long period of time.

The Bill Kocher's Backpack: On a tour lasting one to two hours, each child should carry the following in a small backpack or waist belt:

- Snacks with a nutritional value that will fuel them through a longer tour such as dried fruits, nuts, granola bars, or but butter sandwiches.
- Consider packing a hot drink in a thermos such as warm apple cider; hot chocolate; a mixture of apple and orange juice; or a mixture of honey or maple syrup, lemon juice, and hot water. Cold drinks in small cartons are also very handy.
- A cork and a couple tins of wax selected to cover the temperature range of the day.
- A few extra pieces of clothing such dry mittens, dry socks, and a windbreaker shell to ensure comfort in an unforeseen event.
- Large plastic trash bags are good to wear in wet weather or sit on during a break.

The Leader's Backpack: For any outing lasting more than an hour, the key is to be prepared. Beautiful weather can quickly and unexpectedly change. You should carry a repair kit, a first-aid kit, and a map. It is also advisable for the helper in your group to carry a spare repair and first-aid kit because you may not be available to help out in every situation. These safety measures ensure that there are always two kits on a ski tour.

The **repair kit** should contain:

- Spare ski tips
- Tape, laces, or string
- Wax and cork
- Old pair of wool socks (large enough to fit over a ski boot)
- Penknife
- A lighter

The **first aid** kit should contain:

- Emergency blanket or tarp
- Foam pad
- Moleskin
- Shears
- Ace bandage

- Cravats
- Assorted gauze
- Hot/cold packs
- Handwarmers
- Ambu pocket mask
- Whistle
- Medical tape
- Safety pins
- Bandaids
- Alcohol and iodine wipes
- Triple antibiotic ointment
- Gloves
- Pen
- SOAP note and incident report form
- Penlight
- Biohazard bag
- Advil, aspirin, tylenol, benadryl, glucose

Be sure to carry a map of the ski trails where you will be skiing,and make sure that *all* leaders and helpers have a copy. Mark the trails to be skied on the map. Do not change the route planned unless *everyone* knows the new route.

Terrain and Trails: Be aware of where trails will take you. Check for lake and river crossings, increases in elevation, sharp corners, and other potentially hazardous terrain. It is best to stick to trails that you know well. If you are not familiar with the trails, make a reconnaissance trip or get first-hand information from a local person or a ski club. Remember that beginners should not have to ski on difficult terrain.

Trail Etiquette and Safety: These are the "rules of the road" that make skiing with others more fun:

- Leave a safe trail behind you. Fill in divots in the trail from falling, clear obstructions from the trail, and warn others of hazards.
- When overcoming a slower person, say "On your left or right!" and leave enough time for them to react before you pass them.
- When faster people call "Track" or "On your left or right!" immediately step to the side of the track to allow them to pass. Remember that those skiing downhill always have the right of way!
- On double tracks, move to the right to let faster people pass. On a single track, move out of the track to let faster people pass.

- Keep your poles tight to your body when passing or being passed.
- Get off the trail when taking a break. Don't stop for a chat in the middle of the trail.
- Don't litter!
- Observe all posted signs. Ski in the correct direction on one-way trails

Safety Measures for Children

- Never ski alone
- Know where you are; use a map!
- Keep to well-marked trails (unless you are on a planned backcountry or off-trail tour)
- Ski terrain or distances that all members of your group can handle.
- Ski under control.
- Advise others of your intended route and plans.
- Be prepared for bad weather or changing conditions. Carry extra layers of clothing in a backpack.
- Wear proper clothing; you need it to stay dry and warm!
- Be prepared for accidents, emergencies, or damaged equipment. Carry a repair kit, ski tip, and a first aid kit.
- Check your group's condition frequently; be on the lookout for frostbite.
- Regroup at intersections.
- Don't ski too close together; it is annoying and could cause an accident. Keep a good distance from other people on downhill sections.
- On blind descents, call a warning to people who might be ascending or who might have fallen. Alert waiting people when the trail is clear.
- Roll off the track as soon as possible after a fall and then fill in your divot so that the next person won't fall in the same place.
- Always ski with caution, and always beware of open streams, fallen trees, and snow-covered lakes.
- If you are skiing for more than a couple of hours, ski with a daypack, and carry food and drink.
- Know the location of snowmobile trails and show courtesy toward snowmobilers.

Chapter 10: Clothing and Equipment

Clothing

While new types of fabric and new accessories have emerged in recent years, the principles of layering remain the same. In order to best protect against the elements, layers of clothing should be worn to help trap air. The amount of still air trapped in the clothing is directly related to the warmth of the child! Having many layers on hand also allows children to adjust what they are wearing to stay comfortable if the weather or their activity level changes. It is important to note that most wet clothing will not keep a body warm. It is also important to note that there is a fine line between being warm and being too warm. With the right materials, layers will work together to wick sweat away from the skin and keep the child from overheating. However, if a child is dressed too warmly and sweats a lot, they can get cold very fast if they stop skiing.

Leaders should keep an eye on children to make sure no one is getting too overheated during practice. If they are, encourage them to shed a layer. By the same token, if children get too cold or cannot keep their hands and feet warm, they should be encouraged to put on an extra layer. The best way to keep warm, of course, is to keep moving!

Layers

Base Layer: The base layer consists of the clothing worn next to the skin. Base layers can be made from many wicking materials including wool, synthetics, and silk. Cotton should be avoided at all costs as it soaks up sweat instead of wicking it away from skin and does not dry quickly. For cold days, base layers should be worn on top and bottom.

Mid Layer or Insulating Layer: This layer does a lot of work to keep children warm by retaining body heat. The more efficiently this layer traps heat, the warmer the child will be. In general, thicker/puffier layers are warmer. The best materials for mid layers include fleece, wool, or down/synthetic down. Vests can be a great option for a midlayer and are easily packable (although they do not tie around waists).

Outer Layer or Shell: The outer layer protects from wind, rain, and snow keeping children dry and trapping warm air. In wet conditions, it's important to have a waterproof shell layer so that water doesn't penetrate the other layers and make the child cold. For variable conditions, a lightweight packable shell carried in a fanny pack can be a lifesaver.

Accessories

Hats: The head is a very important regulator of body temperature. A large amount of body heat is lost through the head. As children warm up during exercise, suggest that they remove layers of clothing, but not their hata. Hats should be worn at all times unless it's really warm.

Mittens & Gloves: Mittens are usually warmer than gloves because the fingers are not separated and can keep each other warm. Gloves are a good choice for more warm/moderate days while mittens are a better choice when it's cold.

Buffs/Neck gaiters: Buffs or neck gaiters help keep children's necks and chins warm and can be pulled up over the ears or face for additional protection on particularly cold days. A buff can also be modified to wear as a headband.

Eye Wear: There are days when eyes must be protected from the sun and the sun's glare reflecting off the snow, or from falling snow that makes it hard to see. Sunglasses are great for glare and goggles or clear-lens glasses are great for snow.

Skin Protection: Lip balm can be used to prevent windburn and sunburn on the lips. On sunny days and at high altitude, children should use sunscreen as well. On very cold days children should wear vaseline or dermatone to help protect exposed skin from frostbite.

Drink Belt, Fanny Pack, or Water Bottle Holder: These are a great way for children to carry their own water during practice, as well as some spare wax, snacks, or an extra layer. Encourage children to bring water to practice and drink it as necessary.

Post-Practice Clothes

It is very important to change into dry clothes after practice. When a child stops moving at the end of practice, sweat/moisture in the clothes cools off and the body rapidly becomes chilled. By encouraging children to change into dry clothes for the ride home, you can help them stay healthy throughout the winter.

Skis, Poles, and Boots

Choosing equipment can be overwhelming; there are a lot of different kinds of skis, boots, and poles out there and new advances in materials and technology means the offerings are regularly changing. All the latest and greatest equipment is available online or at your local shop but for a cost. Equipment can be a hugely limiting factor for families who are new to the sport of cross country skiing, and it's important to remember that beginners do not need to have the fanciest or most expensive equipment to start. Chances are they'll outgrow it soon anyway.

So where should you start? If your child is a true beginner, it's recommended to start with a pair of waxless classic skis, combi boots (for more ankle support), and classic-height poles. As your child gets older and more experienced, consider getting a pair of skate skis and skate-height poles. After your child has a few years of skiing experience you may want to consider purchasing a pair of waxable classic skis. The proper equipment will make it easier to learn to ski.

We no longer suggest combi skis as very few beginner children have the skills, or develop the skills fast enough, to classic ski on wax and caregivers/parents may not yet know how to wax skis. Additionally, combi skis rarely get cleaned well enough to make skating fun. However, combi skis can effectively be used as standalone skate skis.

In a world where online shopping has become the norm, we still recommend going to a local shop to get fitted for skis instead of ordering online. Proper ski fit depends on more than just height and weight, and your local shop may be able to let your child demo a pair of skis before buying so you can be sure that you are getting equipment that fits.

An intro video to classic equipment from NENSA sponsor, the Craftsbury Outdoor Center: ohttps://www.youtube.com/watch?v=MoVuh_8QL6w.

Ski Swap/Sales

A ski swap is a large community event where used ski equipment is brought to a central location and sold with proceeds usually going to the local club/business organizing the swap. Because of the rate at which children outgrow equipment, buying used gear can save a family a lot of money especially if they have multiple children involved in the BKL!

Hosting a swap is a great opportunity to fundraise for your club, and you can sell snacks and hot cocoa as well as ski gear. To hold a ski swap, you'll need to leverage all your community outreach methods. Email lists, social media groups, newspaper ads, and personal outreach will help you find people looking to part with old equipment. Have a place where people can come and make equipment donations prior to the event so your club can inventory, inspect, and price the gear.

Once you've accumulated enough skis, poles, boots, and clothing, it's time to spread the word. Reach out to caregivers/parents in your club, as well as other clubs in the area, with the time, date, and location of the ski swap. Put an ad in your local paper, create a Facebook event, or post to your community bulletin board. It can also be helpful to include a caregiver/parent info session on your club at the same time or before/after your ski swap. You can also use a Google Group for club members and local skiers to post used equipment throughout the season.

Chapter 11: Waxing

To new BKL members, waxing can seem intimidating, but it doesn't have to be. We have broken down the basics for you here and included an in depth look at classic kick waxing. To start, you should know there are two broad categories of cross country ski wax: kick wax and glide wax.

Please note that as of June 2020, all NENSA events, including BKL races and the Festival, are fluoro-free. Please see the BKL Wax Policy below (updated 12/2021)

In an effort to lessen the cost barrier and to keep the focus more on skiing rather than on waxing at the Bill Koch Youth Ski League (BKL) level, the BKL District Chair Committee has voted to only allow basic block/hot wax or liquid paraffin wax at Eastern BKL ski races including the Festival. Please see the following list of allowed Swix and Toko block/hot wax and liquid paraffins. Please note that equivalent base line block/hot waxes and liquid paraffins from other wax companies are also allowed despite not being listed below. We appreciate everyone's cooperation in following this new guidance.

Swix Performance Speed (PS) Block Wax Line (formerly the CH line)
Swix CH liquid line
Toko Base Performance liquid paraffin
Toko Base Performance Hot Wax
And equivalent base line block/hot waxes and liquid paraffins from other wax companies

Application Videos:
Swix: Applying block glide wax
(https://www.swixsport.com/en/tips/swixschool/nordic-racing/apply-glide-wax/)
Swix: Applying liquid glide wax
(https://www.swixsport.com/en/tips/swixschool/nordic-racing/apply-liquid-wax/)
Toko: Applying Toko Base Performance Liquid Paraffins
(https://tokous.com/applying-toko-base-performance-liquid-paraffin-for-nordic-ski-training-regular-skiing/)

Kick Wax: Kick wax allows the skis to grip the snow during the kick phase so children can push off and propel themselves forward. Kick wax has to grip during the kick phase and glide during the glide phase of classical skiing. When a ski with the correct wax is kicked down onto snow, the points of the snow crystals stick into the wax. This temporary bonding, or grip, allows the child to push off without slipping. The ski glides when the waxed part of the ski (the kick zone or wax pocket) isn't flexed onto the snow and force of the forward sliding ski is too great for the wax-snow bond to form. Different kick waxes work in different temperatures and snow conditions. Klister is a special kick wax used when snow has been transformed by weather. Because old or wet snow has rounded crystals, wax must be soft enough to allow the smoothed

snow crystals to stick. Klister is as soft as toothpaste (but way stickier) and comes in toothpaste-like tubes.

Glide Wax: Glide wax minimizes the friction between the snow and the base of the ski and is used on the full length of a skate ski and on the sections of a classic ski outside the kick zone. In all except the coldest snow, friction creates a microscopic water layer between the ski base and the snow by melting the upper part of each snow crystal that the ski touches. The ski glides on the thinnest layer of water between the snow and the ski base, just like a hockey skate glides on a thin layer of water between the ice and the skate blade.

Basic Waxing Guidelines

The Preparation of Ski Bases: Modern skis have polyethylene bases. Over time, especially when used in dirty snow or when left to sit for a long time without storage wax, ski bases collect dirt. Cleaning will prevent grit from being waxed into the base of the ski. Skis can be cleaned by glide waxing with a warm-temperature wax and scraping while the wax is still warm. Also, many companies make liquid wax removers/base cleaners that will clean your bases.

Glide Waxing: Glide wax, like kick wax, is tailored to temperature and snow conditions although having the right glide wax for the conditions is not as important as having the right kick wax. To glide wax with block wax you will need block glide wax, an iron, plastic scraper, nylon brush, a wax bench, and a tarp (to collect the wax shavings). Instead of a wax bench you can use saw horses or two chairs with a tarp beneath but waxing and scraping will be much easier if you have vises or a wax bench to secure the skis to. Most ski centers have wax benches for public use.In addition to block glide waxes, most wax brands now offer liquid glide waxes although it is recommended to still glide wax with block wax every so often.

Some important block glide waxing tips:

1. Do your work in a well-ventilated area, and dispose of your wax shavings in the trash (do not dump them outside).
2. Use an iron to melt glide wax onto the ski. Make sure that the iron is at a low temperature (most glide wax containers will tell you what temperature to set the iron to for that particular wax); **Caution**: If the iron is smoking it is too hot! Repeatedly hold the wax to the base of the iron and then rub the melted/warmed end onto the ski base.
3. Move the iron slowly down the length of the ski, but not so slowly that the iron overheats the base. Occasionally feel the top of the ski, particularly at the tip and tail where the ski's core material is thinnest, to see if the iron is heating through the ski. Heat the wax on the base until it is melted and evenly covering the base.
4. Let the ski sit until the wax is cool to the touch.

5. Scrape with a plastic scraper. Make flat, steady passes from tip to tail using even pressure. Scrape until no more wax comes off. Be sure to clean out the grooves using a plastic groove tool. Don't forget to remove any wax that may have dripped down the sides of the ski (sidewalls).
6. Brush with a nylon bristle brush until the base shines— brush from tip to tail.

It requires practice to learn to glide waxt. A good way to learn is to watch someone else. Watch an experienced waxer at a ski center or have someone put on a wax clinic as a club learning activity. You can also assist experienced waxers and when in doubt, ask questions!

Glide waxing instructional video from NENSA sponsor, the Craftsbury Outdoor Center: https://www.youtube.com/watch?v=ogIjhpiKNDo

Kick Waxing: A basic kick wax kit contains the following: several types of hard wax and klister wax, a cork, and a scraper. A torch or heat gun is useful for heating klister so that it spreads easier. Also, a plastic applicator can be useful for those who prefer not to spread klister with their thumb and palm.

1. Start with a clean ski base.
2. Select the wax of the day, according to snow type, temperature, and track conditions.
3. To apply hard waxes, strip the metal or plastic covering of the container back around the top edge; to open a klister tube, unscrew the top and use the sharp point at the top of the cap to puncture the mouth of the tube.
4. Wax in layers. Wax lasts longer if it is layered. Lightly crayon on the hard wax onto the ski base. Wax about 45 centimeters of the area under the foot, from under the heel towards the toe of the binding (or wax your marked kick/wax pocket if you've determined that). A wax job will last longer if you start with a first layer of kick wax binder or a wax one or two steps colder than the wax of the day. See Marking Wax/Kick pockets below on page 141.
5. To apply klister, squeeze out a line of klister dots, or angled lines, along the 45 cm base area or wax/kick pocket. Smooth out with your finger/thumb/palm or plastic applicator provided in the klister box.
6. To rub in hard wax, use a light steady cork stroke cork to buff and smooth the wax.
7. If waxing indoors, allow the waxed ski to adjust to the temperature outside before use otherwise icing may occur when the ski first touches the snow.
8. Ski a short distance in order to check the wax. Once you start skiing, give the wax several hundred meters to start working. If snow builds up under the ski, scrape it off and apply the next colder, harder wax. If you are slipping, you can do one of the following:
    a. Thicken the wax

b. Lengthen the wax pocket
c. Use the next warmer wax on the temperature scale.

Kick waxing instructional video from NENSA sponsor, the Craftsbury Outdoor Center: https://www.youtube.com/watch?v=TmqycGpeLho.

Klister: Klister is used when the water content of the snow is very high or the snow has thawed and refrozen. Try to wax indoors with klister whenever possible; this wax applies best when warm. If you have to apply the klister outside, heat the klister tube with a torch or heat fun, or warm it with your hands.

To apply klister, put tiny dots or angled lines every five to eight centimeters on the middle half of the ski avoiding the groove. Smooth it first with your thumb/palm/finger or klister applicator. Then heat it with a torch or heat fun and smooth it into a thin and even layer. Be careful not to heat the klister to the point of smoking which causes a chemical change that diminishes the wax quality. If you do not have a torch or heat gun, spread the klister with the applicator from your wax kit and then further smoothen the klister with the palm of your hand. Cool your skis outside before use.

Klister waxing instructional video from NENSA sponsor, the Craftsbury Outdoor Center: https://www.youtube.com/watch?v=DPyGzgmzCV8.

Cleaning: It is often possible to ski on the previous day's wax. However, if snow conditions or the temperature has changed, then clean skis before rewaxing. Start by scraping off as much wax as you can without harming the ski base (a klister applicator or putty knife is ideal). Use wax remover or a torch/heatgun and rag to finish cleaning your skis. Be sure to keep the torch/heat gun moving at all times otherwise you might burn the ski base. Be sure to scrape the wax from the sidewalls of your skis as well. Check whether the ski is clean by seeing if you can leave a fingerprint on the previously waxed surface.

Marking Wax/Kick Pockets (an excerpt from Andrew Gardener's "Testing the fit of new or cold classical skis"): The Swix-recommended method of finding the kick zone requires a friend, a very flat surface and a piece of normal typing paper (they suggest A4, 60 gram paper, but any fairly normal typing paper will do). Place the paper under the ski and stand with the body-weight equally distributed on both skis. For all these tests you must stand with your feet on the ski where they would be if you were skiing on them on the bindings. Have the friend move the sheet of paper towards the tip. At the point where the movement comes to a stop, mark with a pen on the sidewalls. This point represents the forward front of the kick zone for cold, dry snow conditions (hard kick waxes such as VR 40 or Extra Blue). Next, fold the paper

once and repeat the process. Where the paper stops represents the forward front of the kick zone on freezing point conditions (soft kick waxes such as VR 60 or a red kick wax). Finally, fold the paper once more so that it is 4 times its original thickness. Repeat the process by moving the paper as far forward as possible. This time the stopping point represents the front of the kick zone when using klister. The rear of the kick zone normally ranges from under the middle of the foot back to the heel of the boot. Very, very seldom does the kick zone extend beyond the rear of the heel. Often a klister kick zone will stop under the mid-foot while a hard wax kick zone will extend back to the rear of the heel.

Conclusion: There are certain basic steps to follow when learning to wax. With time, your growing knowledge of waxing, combined with an increasing awareness of you or your child's own style of skiing, will lead to rewarding results.

Classic Kick Waxing: A Simplified Approach
by Fred Griffin, Northeast Nordic Ski Club

Waxing for classical skiing is 90% science and 10% intuition. The intuition is informed by experience. But make no mistake—there are no shortcuts, no magic pills, no substitutes for *doing*. Classical waxing is in fact the perfect embodiment of the BKL teaching methodology, "Learning by Doing." The more you wax the better you get.

I. Factors Influencing Wax Selection:

1. Snow Quality
    - Fresh fallen/ not transformed (*binder and kick wax*)
    - Partially transformed/been subject to some freeze-and-thaw (*try binder and kick wax, then go to klister and/or klister covered with kick wax*)
    - Transformed/artificial/ ice-like rather than flake-like (*binder and klister*)
    - Abrasiveness (*determines how many layers of kick wax and type of binder; determines whether you need a klister binder*)
2. Snow Temperature and, to a lesser degree, Air Temperature determine the waxes you use for testing
3. Humidity: Greater humidity means tracks glaze more quickly and you generally move to a warmer wax than the temperature indicates; if there is very little humidity and the snow is dry, you might need a cooler wax than the temperature indicates.

II. Wax Selection: Wax selection is a wonderful example of the scientific method in action. Arrive at the race site and be ready to start testing two hours before the first racer goes off. Gather data then read labels, factor in the variables above, and:

1. Pull out 4, 5, 6, or more kick waxes or klisters that seem to fit the criteria
2. Have a minimum of 4-6 skis, (2-3 pairs) with which to test
3. Apply different waxes to different skis. Use a sharpie and tape to indicate what you have put on which ski. Send testers out to test. No less than ten minutes—ski the wax in!
4. Discard waxes that aren't working. Test those that are working to varying degrees against each other. Look at waxes you haven't tested but come close to matching the profile of what seems to be working. Maybe try a few of them.
5. Zero in on what is working best; keep an eye on weather conditions and track conditions. Have your bailout waxes lined up and ready to go—something colder if the kids start dragging and something warmer if they start slipping. Know where you are going to go ahead of time if you are forced to make a change.
6. If you feel pretty certain the wax is the right wax but your child complains, go longer in application, then go thicker in application before moving to the warmer wax.

7. Always, always, always exude relaxed confidence. “I want you to be happy with your wax. Let me know if it’s not like you want it and we’ll fix it!” When you get tight and panicky kids’ anxiety levels red line.

III. Wax Application

1. Have kick zones accurately marked (paper test as described under Marking Wax/Kick Pockets on page 141); keep in mind that klister zones will be 1 1/2 inches shorter on average.
2. Have kick zones sanded with +/- 180 grit sandpaper.
3. Binder wax or binder klister goes on thin! Just thick enough to cover the hairies raised by the sanding; heat with iron and smooth with cork or hand.
4. Subsequent coats of kick wax go on thin and are corked until smooth; klister goes on thin and is corked or hand rubbed until smooth.
5. Know your kids and know their skis. Inexperienced children may want/need warmer wax than children with better technique. Children with stiff skis may need longer and thicker applications.
6. Wax zones are not constants. In general, cold dry weather lengthens the kick zone and makes thinness of application more important. Warm wet weather shrinks the kick zone and may require a thicker application.

Chapter 12: Nutrition

By USOPC Sports Dietitian, Megan Chacosky

When we think of nutrition in the context of BKL aged children, it's important to remember that we do not need to do anything out of the ordinary to make sure our kids are getting the nutrition they need. Simple, healthy choices and a well balanced diet will go a long way to make sure your child has the energy and nutrients they need.

Instead of thinking of nutrition in terms of limiting factors, we want to look at prioritizing healthy choices and eating what makes your body feel good. We will still go into some helpful pointers for each meal below, but remember these are only guidelines and there is no tried and true formula that works for every child.

Ideal selections of food for children should provide a mix of carbohydrates, protein, and fat. Traditional thinking is that carbohydrates should make up the majority of a diet (55-65%), with smaller amounts of protein (10-20%) and fat (15-35%). But nutrition should never be taken out of context. The most important thing is to make sure your child is getting enough of what they need, and that they have a positive relationship with food and their body. Mealtime should be fun and relaxing. Healthy, pleasurable food choices should not be viewed as a training tool but rather habits that enrich your life.

Breakfast

Often called the "most important meal of the day," a well rounded breakfast is key for the body AND the brain, so be sure to help your child create a morning routine that includes breakfast each day. Skipping breakfast can lead to low energy and fatigue, and breakfast should include a mix of carbohydrates combined with sources of proteins and fats for long lasting energy.

Oatmeal and cereal are good easy options for breakfast. Some folks even refer to winter as *oatmeal season!* High marks also go to high-fiber cold cereals. To boost the flavor of oatmeal try adding your own mix of nuts, seeds, and fresh or dried fruits. Raisins, bananas, sunflower seeds, and almonds all work well. Milk (dairy or non-dairy) with cereal is a good choice too. In addition to providing nutrients of its own, milk helps boost the protein power of grains.

Whole grain breads, english muffins, and bagels can provide the foundation for a quick, tasty breakfast that's portable enough to eat on the go. Spread them with nut butter or cream cheese and you're off. Pancakes, waffles, and french toast are also energy-packed breakfast choices. For

extra health benefits, select buckwheat flour, bran, or whole grain varieties. Topping them with fruit, yogurt, or nut butters is a great way to get some added nutritional value.

Eggs are a great source of protein, and on a chilly morning it can feel good to eat a warm breakfast. Boiled, poached, scrambled, fried or in an omelet, eggs are a complete protein and a great option for breakfast. Greek yogurt is also a high protein breakfast option and fruit smoothies with yogurt are an easy breakfast option to prepare and transport. They are also easy to digest and liquid calories can sometimes be easier to consume if morning appetite is low.

Lunch

Lunch is a critical time to replenish your body after expending energy in the morning whether at school or at ski/sport training, and it sets you up for feeling good through the afternoon. Many times BKL practice or other athletic events take place after school and what your child eats for lunch will be directly related to how they feel for their afternoon activity. If a child reports an upset stomach, perhaps it's time to look more closely at what they had for lunch. On the other hand, if a child is feeling great when they ski chances are they are eating the right thing for lunch.

Sandwiches with whole grain bread are a good lunch option. Fill them with meat, veggies, hummus, or peanut butter and jelly. Truly the options are endless and you can let your child be involved in choosing what they like. Salads are a great lunch option with some added protein and carbs. Lunch meats, chickpeas, tuna, cooked grains, and chicken are all healthy and easy additions to a salad. Leftovers from dinner are great for lunch as well. Pastas, grains, veggie dishes, sweet potatoes, and grilled meats are all good the next day and make for yummy lunch additions.

The main thing to remember with lunch (and all meals) is that what your child is eating should taste good and make them feel good. There is no problem with having dessert after lunch, or eating pizza and burgers. Just be sure they are also getting enough fruits, veggies, and whole grains. Think of nutrition in terms of prioritizing healthy items instead of limiting what you may consider unhealthy.

If you are packing your child's lunch, consider adding some healthy snacks or items that can be eaten on the go like carrot sticks, nuts, fruit, granola bars, or trail mix. They may get hungry before practice and will also need a post practice snack to help them quickly refuel their energy stores (more on that later).

Dinner

Dinner gives children a chance to replenish any nutrient and calorie loss after a day full of activity. Since muscle glycogen can be rebuilt overnight, carbohydrates are a great nutritional option at dinner and later in the evening. Protein and fat intake is necessary to make up for the extra energy expended during a long day of skiing or playing outside. Evening snacks can help rebuild nutrient and energy stores too.

The same principles that apply to the other meals apply here. Be sure your child is getting enough food and that they are eating a mix of carbohydrates, protein, and fat. Meats, vegetables, salads, pastas, grains, and beans are all good dinner options. A good guideline is to make sure your child's plate is multicolored. Think about what's fresh and in season in terms of vegetables and use those when you can.

Snacks

Snacks are essential for children whether they participate in athletics or not. In a day full of school and activities it can sometimes feel like a long time between the three standard meals of the day. Healthy snacks can add essential calories that your child needs to keep them energized throughout the day. If you are packing your child's food, think about packing " lunch and a half" so they have enough food at lunch as well as some snack options for later in the day.

Post Practice Snack: Muscles are most receptive to replenishing glycogen (energy) and protein (to build muscle) fifteen minutes to one hour after activity. Because of this, it's key to have a snack available for your child after they ski. Either pack your child a snack in the morning, or have something ready in the car when you pick them up from skiing. Half a sandwich, a banana and peanut butter, granola bar, or a bag of trail mix are all good easy options for a post practice snack. Even beverages like milk, chocolate milk, soy milk, or fruit smoothies can be great post-practice snacks to help refuel glycogen and protein. Also, sometimes children are not hungry after training and liquids are easier to tolerate.

Hydration

Water makes up about 60-70% of body weight depending on age, and is constantly being lost from the body throughout the day. Because of this, make sure your child has access to water all day. Children don't always recognize the early stages of thirst, which can make them prone to dehydration especially during an endurance activity like skiing.

Children should always have a water bottle with them at practice. Coaches/leaders should encourage children to drink water on breaks during practice and when finishing up a long ski.

Club leaders can also use email lists or other caregiver/parent communications to make sure caregivers/parents are sending their child to practice with a water bottle.

Hydration Facts:

- In one hour of activity the body can lose up to 1 liter of water (almost one quart) depending on heat and humidity.
- One pint of water equals a pound. Just remember: "A pint's a pound the world around." For every pound of body weight you lose in a day, chances are good that you've lost a pint of water. Drink up!
- Being just a little dehydrated means a rise in body temperature during exercise, which means your heart rate goes up slightly, and you breathe harder while going slower.
- A dehydrated person can lose 5-10% of their performance capability.
- Once you become dehydrated it takes a minimum of 6 hours to restore hydration and up to 20 hours if you are seriously dehydrated.

What to do:

- Sip water all day everyday and keep your tank "topped-off"
- Carry water bottles to class, around the house, everywhere you go
- Be very intentional about your fluid consumption
- Do not share water bottles
- Always bring water to practice

Health & Nutrition Resources

- **Sunn Idrett (translated)** – the Sports Nutrition section has lots of good articles and recommendations. This website takes a more "proactive" approach with ideas of what good, positive nutrition can look like. Link: https://translate.google.com/translate?hl=en&sl=no&u=https://sunnidrett.no/&prev=search&pto=aue.
- **Emily Program Resources** – videos and articles spanning a wide range of topics from disordered eating to body image. Link: https://www.emilyprogram.com/resources/.
- **With All: What to Say** – after taking a pledge to end harmful diet/weight talk, you'll have access to a library of materials that can be specific to athletes, parents, or coaches on "What to Say" in certain situations around diet, weight, and body image talk. Link: https://www.whattosaynow.org/.
- **Development Nutrition Factsheets:**
    - Fueling 101: https://drive.google.com/file/d/1fY5B_2-hTt9wYK8Q6Mn3ycEvKwFoV-tW/view
    - Fueling to Win: Race Day Nutrition Tips: https://drive.google.com/file/d/0B8PVQgUFDMmER0I2RWl5UHZJNjg/view?resourcekey=0-J5rPflPNFRXRuWzMonQ70Q

- Fueling for Multiple Events: Sample Meal Plan: https://drive.google.com/file/d/1d1I-i9g7UIkUaxZJkJBRk1VUd0Omu6Vv/view
- Hydration 101: https://drive.google.com/file/d/1LWCoN1ctjPiRfMtevrZAdfaX2TVLawtF/view
- Recovery 101: https://drive.google.com/file/d/1yEjvspx9Y9eMvBolax4ImH-l0IbvdzXX/view

- **Additional Resources Available Here:** https://nensa.net/health-nutrition-resources/

Chapter 13: First Aid

Someone with first aid training must be available at every club activity. This section is not designed to provide that information. It focuses on cold weather-related first aid for frostbite, hypothermia, and dehydration. These are all serious, life-threatening conditions. All can be prevented through proper preparation. All can be caught in their initial stages through close observation. The key then is not treatment, but prevention.

Frostbite: Frostbite often occurs when people are exposed to the cold for a long time. Frostbite normally occurs on the exposed parts of the body and extremities such hands, feet, ears, nose, and cheeks. The symptoms of frostbite are cold, white, frozen patches of skin. There are two types of frostbite: superficial frostbite (frost nip) and deep frostbite.

- ***Frost nip*** is a frozen, hard area on the surface of your skin. If you see a white patch on a child's face while you are out skiing, put your mitten or your bare hand over that patch of skin—DO NOT RUB THE SKIN! Rubbing the skin will cause the ice crystals that are in the skin cells to tear the cells. If you have a long way to ski back to the lodge, cover the area with a scarf or neck gaiter/buff. As soon as you get inside, put the injured part in lukewarm (NOT HOT!) water for about 20 minutes.
- ***Deep frostbite*** is when the entire thickness of the skin and the underlying tissue are frozen solid. In this case you need to seek out medical attention as soon as possible

Hypothermia: Hypothermia normally occurs when exposure to cold is made worse by wet weather, wind, and exhaustion. The symptoms are:

- Uncontrollable fits of shivering
- Vague, slowed, and/or slurred speech
- Memory lapses and incoherence
- Immobile, fumbling hands
- Frequent stumbling or a lurching gait
- Sleepiness
- Apparent exhaustion, i.e. an inability to get up after a rest

The procedure for treatment is:

- Insulate the victim from the snow/cold
- Get the victim out of the elements
- Strip victim of all wet clothes
- Get victim into dry clothes and a warm sleeping bag or bed. Placing well-wrapped, warm rocks (not hot) or heat packs in their sleeping bag will hasten recovery. Body heat from having another person in the sleeping bag will also help warm them.
- Build a fire

- Give victim warm drinks

Minimum Temperature Guidelines: The New England BKL's recommended minimum temperature guidelines are based largely upon the below information. Please take into account the children involved, their clothing, the length of the workout, the intensity and distance of the workout/event, and the protection offered, or not, by the terrain. See page 41 for the BKL Race, Train, and Ski Temperature Recommendations.

FIS Minimum Temperature recommendations for Popular Cross Country Competitions:
387.1.1: "There are three main factors to be considered… regarding cold weather safety: the temperature, the duration of exposure, and the clothing and other protection against cold weather. These factors taken together with any other relevant information such as "wind chill factor" must be taken into consideration when making a decision regarding cold weather."

Dehydration: Dehydration can easily occur on an extended tour because of overexertion and perspiration. It is made worse by breathing cold, dry air, which absorbs a considerable amount of moisture from the lungs. The symptoms of dehydration are extreme fatigue, light-headedness, and thirst. Dehydration can be prevented by dressing in layers that can be removed before excessive perspiration causes heat build-up and drinking plenty of fluids. It is strongly recommended that children carry a plastic bottle of fluids in their fanny pack when they are on an extended tour. Eating snow relieves a dry mouth, but it does not satisfy water requirements. It takes approximately 10 cups of snow to make one cup of water. In addition, eating snow lowers your body temperature and increases vulnerability to hypothermia.

Chapter 14: Setting Up Competitive Events

In this section you will learn how to integrate competitive events into your overall club program. This section will also explain the procedures for organizing and running cross country ski races for youth skiers. For organizers of multi-age events, NENSA's ***Event Organizers Handbook*** is another resource. Handbook available here: https://nensa.net/event-organizers/.

Setting Up Competitive Events: Competition is a distinct part of the overall BKL program. While not all children want to participate in races, each local BKL Club should consider providing opportunities for those children who do. In this section you will learn how to integrate the competitive aspects of cross country skiing with your overall program. You will be led step-by-step through the process of organizing and running racing events for youth skiers.

Philosophy of Competition: It is the responsibility of leaders, coaches, and caregivers/parents to provide children with the skills and knowledge to pursue skiing beyond BKL should they choose to do so. As with all BKL activities, competitions are designed to teach each young person to participate to the best of their respective abilities. No child should be forced to compete.

Cautionary Note: The long-term developmental needs of each child must be observed by club leaders, coaches, and caregivers/parents. Allowing or encouraging children to race two and three times a week and/or at longer distances than is best for their age will risk their long-term development and overall enjoyment of the sport. While it is true that all children develop physically and mentally at different rates, the dangers of "rushing" young athletes are well-established. Children who race several times a week may experience short-term success but at the cost of long-term development. They are more susceptible to injuries as well as physical and psychological burnout. Children who consistently race distances longer than those recommended for their age group risk jeopardizing their neuromuscular development. Psychologically and neuromuscularly, they quickly become efficient at moving themselves over the snow at a conservative pace. In almost every case, children who race too often or who race at distances which are too long, are doing so to please an adult and not because they truly want to.

Racing Opportunities: Clubs that are too small, or feel too inexperienced to hold their own competitions, can participate in races offered by neighboring clubs, or in district races. Volunteering to help others is a great way to learn how to run competitions yourself. Leaders should contact their District Chair (www.nensa.net/bill-koch-league-club-directory/) or contact NENSA to find out more about these opportunities. Also, many NENSA races feature a BKL race prior to or after the main event. Contact NENSA or consult the calendar on our website to find out more about these events: https://nensa.net/events/.

Organizing a Cross Country Ski Race: Organizing a cross country ski race requires planning. Poorly organized races are frustrating and discouraging to both competitors and caregivers/parents. Procedures must be thought out in advance and communicated clearly to the team of workers/volunteers. Beginning race organizers should observe activities at a host club before running their own race. Volunteering to work at other club's races is a great way to learn. Equipment required to run a ski race is minimal and inexpensive. Race administration techniques vary. The suggestions here are provided as a basic outline to help the organizer establish procedures for a local club.

Choosing the Course: Choose the cross country race course prior to race day. An ideal course is a fair test of a racer's speed, technique, and, lastly, endurance. Racing is fun for kids when they go fast and when they feel fast. Courses that reward endurance above speed are discouraged. The terrain should be smooth and undulating with no extremely sharp grades. The course should have smooth turns that leave skiing rhythm uninterrupted. A limited number of bumps and sharper turns have their place on courses for the older, more experienced youth racers. More difficult features such as steep, long uphills and downhills with high speeds and sharp turns may be added to courses for older juniors and adults but they are not recommended for youth participants.

Distance, Terrain & Timing Guidelines for Bill Koch Youth Ski League Races

- **Lollipoppers (ages ~5-7):** No more than 500 meters. Although flat terrain might appear easier, it is actually more difficult to ski than rolling terrain with its downhill "rests" and opportunities to change techniques. If there is some terrain, caregivers/parents should be encouraged to help the less experienced children with a little push up the hill or a hand hold on the way down. Race is not timed, results are not posted.
- **Grades 1& 2 (ages ~6-7):** 1 kilometer. Remembering that this is a transition category from Lollipop to Grades 3&4. If individual start, the race can be timed but times should not be posted (only post placement).
- **Grades 3&4 (ages ~8-9):** 2 kilometers with no more than 20-25 meters (65-85 feet) of total elevation gain and a maximum single climb of 10 meters (35 feet). If individual start, the race can be timed but times should not be posted (only post placement).
- **Grades 5&6 (ages ~10-11):** 3 kilometers with no more than 30-40 meters (100-135 feet) of total elevation gain and a maximum single climb of 10 meters (35 feet). Times and placement can be posted for results.
- **Grades 7&8 (ages ~12-13):** 4 kilometers with no more than 40-55 meters (135-180 feet) of total elevation gain and a maximum single climb of 15 meters (50 feet). Times and placement can be posted for results.

- **Relay Race Guidelines**: Grades 1&2 should be no longer than 1 kilometer while all older grades should not exceed 2 kilometers. Relays do not need to be timed as they are mass start and order of finish can be recorded.

As with every other guideline put forth by NENSA for the Bill Koch Youth Ski League, the objective here is to make racing fun for everyone. The goal is to create events that make children love skiing. As more challenge is desired, it is preferable to focus on courses with more technical challenges such as compression dips and turns rather than more climbing. If a club or district has a lot of children who have never raced before, a course can be laid out just for them, regardless of age that might be only a kilometer long with no climbing. Following the fall 2021 NENSA District Chair meeting, the District Chairs voted to only post placement for Grades 1-4 (not times) in an effort to reduce the focus on competition.

When it comes time to put together the courses for the Festival, these guidelines are more important than ever. When all of the districts and clubs come together at the Festival bringing with them an incredible variety of skiing ability, they should know what to expect. Consistency is important. The less time a child at the Festival spends worrying about how long or how hard the course is, the more time they can spend focusing on going fast, having fun, or whatever their personal goal may be.

To insure course distances and climbs are within the recommendations, event directors can:

- Use a GPS watch or tracking app like Strava or MapMyRun to get a GPS track and elevation profile of your proposed course.
- Use a topographic map to help estimate the height difference from known points on the course. While not 100% accurate, it will give you a sense of the terrain.
- Use an inclinometer to measure the angle and a tape to get the distance and some basic geometry to calculate the approximate rise, again this is not exact but it will get you pretty close.

Course Preparation: Trails should be packed to a width which allows two people to pass. An eight foot width is adequate with good snow conditions. Hills and fast corners require wider packing. The course is marked clearly and at frequent intervals with flags, arrows, signs or painted snow. Trail junctions require special care; ensure that markers point in a clear direction. The following color coding scheme can be used to mark courses:

CLASS COLOR
Grades 3&4 yellow
Grades 5&6 red
Grades 7&8 blue

Emergency Medical Plan (EMP): An emergency medical plan should be present in written form at all race sites. It should include:

1. Detailing the quickest and safest entry and exit routes to various points on the course
2. Names of people who are on the EMP Team
3. Location of first aid equipment
4. Location of nearest medical facility

At least one snowmobile staffed by an EMT or medical personnel should be stationed at/near the start/finish line. See Emergency Medical Plan Recommendations and Template links under safety considerations on Page 127.

Race Equipment Checklist (compiled by Rosemary Shae-Cobb, NWVT District Chair)

- Bibs: 60 to 100 bibs will probably suffice for most club youth races
- Clipboards: at least three so there's one for the starter, one for bib recording, and one for time recording.
- Stopwatches: at least 3 with 30 minute capacity (can also use personal watches or phones although phone batteries can die in the cold).
- A big "Registration" sign that you can attach to a table
- A bag of pencils, pens, markers, and packing tape
- A folder of Bib Recording sheets
- A folder of Time Recording sheets
- Ribbons: 1st-10th place and Participant ribbons
- Lollipops for the lollipoppers!
- A bell to ring to start each race
- Bullhorn
- Emergency Medical Plan
- Course marking flags or cones
- Start and finish gates/signs.
- Shovels/rakes
- Refreshments
- Money box or bag
- Radios can be helpful if available

Race Personnel

The following personnel are essential to a smoothly run cross country ski race. One person may fill several positions, especially in smaller races, but they must be able to perform all of their duties.

Chief of Competition: Responsible for preparing the race, supervising the race, and assigning duties to the other race personnel.

Chief of Course: Prepares the race courses and marks the courses so that racers can follow the courses easily. They also position the course marshalls and close courses as needed.

Race Secretary: Registers racers, distributes bibs, posts results, prints results, and distributes awards.

Chief Timer: Times the race accurately and records the times of each racer. They also calculate results and run team scoring, if applicable.

Starter: Starts racers at the determined interval, operates the start clock, and ensures racers are at the start line in the proper order.

Start Wrangler: Lines up racers by class in bib order behind the starting gate.

Finish Timer: Responsible for communicating to the Finish Recorder (below) the finish time and bib number of each finishing racer. They also operate the finish clock/watch.

Finish Recorder: Responsible for recording the finish time of each finishing racer and repeating the time back to the Chief Timer.

Bib Recorder: Responsible for recording the bib order of finish, recording finish times as a double check on the Finish Recorder, and repeating the bib number of finishing racer back to the Chief Timer and the Finish Recorder.

Pre-Caller: Announces the bib number of each finishing racer. Must be equipped with a loud voice or a bull horn.

Back-up Timer: operates a back-up watch.

Controllers/Stewards/Marshalls: Direct racers on the course and checks off racers on a checklist if laps are involved.

Bib Collector: Responsible for collecting bibs from each racer crossing the finish line.

Aid Station Attendants: Serve hydration fluids/refreshments at the finish line. Hands out lollipops to lollipoppers.

Forerunners: skis the course before the first racer starts in order to clear the track and guide the racers. Forerunners should check the course for fallen branches, obstructions, and windblown sections of the course and make quick repairs if possible or communicate problems to the Chief of Course.

Post-Runners/Sweepers: Ski the course behind the last racer to check that all the racers are safely off the course. They also close the course by taking down all signs and flags.

Wax Consultant: Posts a suggested wax for the race and the temperature in the registration area for racers and coaches to consider when choosing their wax. This person should be proficient in waxing.

Race Procedures

The following tasks are arranged more or less chronologically, although some of them will be going on in different places simultaneously.

Pre-Race:

- Race Secretary registers the racers by class
- Establish a registration area to record registrants by name, club, and class
- Assign bibs in racing order by appropriate class
- Seed the racers in each class (how this is done is up to the host club)
- The Chief of Course inspects the course to insure that the track is in good condition and the markings are accurate
- The Chief of Course stations responsible Course Marshalls at strategic points on the course such as turns, junctions, and road crossings
- Equip Marshalls with appropriate materials including paper and a pencil for checking off racers, shovel/rake for patch work where the snow is thin, radio, etc.

Race Start:

- Forerunners should ski the course two to five minutes ahead of the rest of the field.
- Racers are briefed on often violated rules (see Reminder to Racers and Coaches on page 158 below).

- The Start Wrangler lines up racers by age class in bib order behind the starting gate. A typical procedure is to start the racers individually or in pairs every 30 or 60 seconds.
- A "5-4-3-2-1-go" countdown is usually used.
- At "go" the start watch time is recorded. Note: the clocks will run continuously for the duration of the race. They are not stopped as a racer finishes. A back-up watch is used in case the primary watch fails.
- The late starters' starting procedure is determined by the Starter. Racers who miss their start may be run at the end of their age class (with their actual start and finish time recorded) or they may be started midway through without interfering with the regular start order (with their start time remaining the same as on the start list). Usually an interval of five minutes is left between age groups.
- The starting procedure continues until all racers are on course. Please note that prior to starting the last racers, the first racers may be finishing. Be prepared to record finish times as they happen.

Race Finish:

- Using a separate finish recording team is important.
- A finish team of three people can record finish times effectively. The Finish Timer, looking at the watch, calls out the time (i.e., 30 minutes, 25 seconds…26 seconds..27 seconds…) as the racer approaches the finish line. The Finish Recorder and Bib Recorder record finish times and bib numbers on clipboards. The Finish Recorder repeats the time and the Bib Recorder repeats the bib number. A cool head and a quick pencil is needed because several racers can finish together.
- Station a Pre-Caller 20 to 30 meters from the finish line with a loud voice or a bull horn to call out the numbers of approaching racers.
- A Post-Runner/Sweeper should ski the course and close it after the last racer starts.
- The Chief Timer computes elapsed times for each racer and places are recorded for each racer by age class. All results should then be double-checked. Unofficial results are often posted immediately for coaches/leaders to review.
- Post the official results and let them be observed so that any protests can be made. Award all ribbons and medals in a public ceremony. Communicate the outstanding efforts of all participants. Acknowledge the sponsors and thank the site, coaches, volunteers, and caregivers/parents.
- Official results should be sent to all team leaders

A Reminder to Racers and Coaches

- Be prompt in registering. Don't forget your entry fee (if there is one).
- Tour the course before any races begin.
- Be waxed and ready at the start of the race. Take care of and secure your own equipment.

- Line up according to your number. Don't be late.
- Stay warm while waiting to start.
- Listen to the starter's instructions.
- Wait for the "go" signal.
- Overtake/track other racers with courtesy.
- Yield the track to overtaking racers at their first request. Keep your poles out of the way.
- Follow the course markings and any Course Marshall instructions while on the course.
- Move out of the way when you finish.
- Give your bib to the Bib Collector.
- Put on warm clothes right after finishing.
- Don't ask questions of the timing officials.
- Don't pace any racers. Pacing is skiing alongside, behind, or in front of a racer for more than 25 meters. Please note that caregivers/parents can do this in lollipop and Grade 1&2 races where children are less experienced and may be intimidated by racing or worried about following the course.
- Keep clear of the tracks when not racing.
- Cheer for everybody.
- Have fun!

The New England BKL Festival

One of the largest cross country ski events in New England is the New England Bill Koch League Festival. It is a two-day celebration of youth cross country skiing with over 400 participants annually, most of whom are accompanied by their families. The Bill Koch Festival rotates to a different state each year and features a "theme" that emphasizes the fun of participating in cross country skiing. There is an opening ceremony, complete with a parade of children representing their Districts, a graduation ceremony for the 8th graders, a pasta dinner, games, and any possible event that can be done on skis or snow. For many BKL children, the Festival is the culmination of their season, a chance to see ski friends from far away, an opportunity to ski at a new venue, and fun way make new ski friends. Each BKL clubs sends a contingent of children and families to the Festival. Information on the New England BKL Festival can be obtained on the NENSA website: www.nensa.net/bkl-festival.

Summary

The competitive side to cross country skiing can be challenging, exciting, and rewarding to many or all of your club members. Adequate preparation is the key to running races smoothly and safely. Attending and working at races held by other clubs will give you the confidence and expertise to hold your own competitive events. Consult your District Chair for more information about racing programs in your area: https://nensa.net/bill-koch-league-club-directory/.

Chapter 15: The Cross Country Skier Lifestyle

Cross country skiing is not just a winter sport, it's a way of life. It's a love of being outside, playing with and supporting friends, exploring trails, and learning or making up new games. Someone who cross country skis gets to play outside year round!

For BKL-aged children, the focus is on general athleticism like agility, balance, speed, strength, and endurance. The best approach to training young children is an instructional program that builds basic aptitudes. Children younger than age 10 benefit from a loosely-structured program which focuses on fun and general fitness. Older children can learn the basics of ski technique. Children who are 11 to 13 years old should be committed to competition before they train more than three to four days per week. A BKL caregiver/parent/leader can encourage and guide healthy, active children to do the following:

Diversify: Enjoy a wide range of activities, games, and sports to develop a wide range of motor skills.

General Fitness: Children can develop overall physical fitness and general athleticism during the off-season through a variety of activities. Voluntary participation in these activities allows a child to stay fit naturally. Club activities can encourage group participation in off-season sports, games, and events. These activities should encourage endurance, heart and lung development, and power and body strength. Below are some suggestions:

- ***Running:*** Vary the distance, terrain, and speed. Fun games and relays can help build a young child's speed
- ***Hiking:*** Explore! Bring last year's ski poles along, or swing your arms when hiking to simulate skiing. Older children may want to carry a backpack or a water bottle carrier.
- ***Bicycling:*** Master the two wheeler! Where it's safe, bike to school, to the store, to your friend's house, to the park, or on trails. Helmets are a must!!
- ***Swimming:*** Learn to swim. Be a part of a swim team. Perfect your dive.
- ***Canoeing, Kayaking, and/or Rowing:*** Canoe to explore a lake or a river. Canoe to get to a picnic spot. Canoe-camp with your family. Paddling is a great activity for the upper body.
- ***Gymnastics:*** Great for developing strength, agility, balance, and flexibility.
- ***Ball Sports:*** Tennis, basketball, baseball, football, and softball are great for developing hand-eye coordination, speed, agility, and teamwork. Be a little cautious of these sports. Ball sport coaches tend to increase the intensity of the workouts as competitions increase which can cause mental and physical burn-out and result in children losing valuable aerobic endurance work that's key to physical development at a younger age.

- ***Soccer:*** Soccer is terrific for developing speed and agility. It's a game best played with friends and it helps develop teamwork.
- ***Natural Weight Training:*** Chores are the ideal 'weight training' for kids at this age! Weights and machines aren't fun or productive yet. Instead, carry out the garbage, help stack the woodpile, or haul some hay to the garden.
- ***Rollerskiing:*** Roller skis are great fun, but it takes a lot of time to get comfortable on them. If your child does choose to rollerski, make sure they are closely supervised by coaches for both safety and technique. Rollerskiing for youth skiers should emphasize double poling and skating, not diagonal striding. However, classic rollerskis can be a good way to start since they are more stable than skate rollerskis. A helmet is absolutely necessary and gloves are suggested.

Chapter 16: Book Resources

Books For Caregivers/Parents/Leaders

- *Long-Term Athlete Development, 1st Edition* by Istvan Balyi, Richard Way, Colin Higgs
- *Coaching Young Athletes* by Rainer Martens
- *Coaching with Heart: Taoist Wisdom to Inspire, Empower, and Lead in Sports & Life* by Jerry Lynch, Ph.D. and Chungliang Al Huang
- *Quicksilver* by Steve Butler and Karl Rohnke
- *Cowstails and Cobras* by Karl Rohnke
- *Silver Bullets* By Karl Rohnke
- *No Props: Great Games with No Equipment* by Mark Collard
- *Tips & Tools for the Art of Experiential Group Facilitation* by Jennifer Stanchfield
- *Changing the Game: The Parent's Guide to Raising Happy, High Performing Athletes, and Giving Youth Sports Back to our Kids* by John O'Sullivan
- *Let Them Play: The Mindful Way to Parent Kids for Fun and Success in Sports* by Jerry Lynch and Steve Kerr
- *Developing Talent in Young People* by Dr. Benjamin Bloom
- *Just Let the Kids Play: How to Stop Other Adults from Ruining Your Child's Fun and Success in Youth Sports* by Bigelow, Moroney, Hall
- *Better Training for Distance Runners* by Martin & Coe
- *No Pain, No Gain?: Athletes, Parents and Coaches Can Reshape American Sports Culture* by Richard Taylor
- *Total Training for Young Champions: Proven conditioning programs for athletes ages 6-18* by Tudor O. Bompa

Books For Children

- *Trouble with Trolls* by Jan Brett *
- *Ollie's Ski Trip* by Elsa Beskow *
- *The Race of the Birkebeiners* by Lise Lunge-Larsen, Illustrated by Mary Azarian *
- *Snowflake Bentley* by Jacqueline Briggs Martin, Illustrated by Mary Azarian *
- *Cross Country Cat* by Mary Calhoun, Illustrated by Erick Ingraham
- *The Search for Dragon Proof Snow* by Dorothy Wallace-Senft

* available through the New England Ski Museum