NORDIC JOURNEYS CURRICULUM AND COMPLETE GUIDE: REACHING FOR A SUSTAINABLE PROGRAM

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Abstract

Nordic Journeys is a non-profit organization striving to bring cross-country skiing to rural Alaska as a way to enjoy a healthy lifestyle and the beautiful landscape of Alaska. Nordic Journeys is working to build a sustainable program model that will allow skiing to become a regular activity in rural Alaska. Rural Alaska is known for some of the worst rates of physical and mental health problems in the state and while a cross-country ski program is far from a solution, providing instruction and activity for a healthy life is a positive prevention measure that can help combat many of these problems. Program sustainability in remote areas is a significant challenge with no easy answer. It is clear from review of both physical education programs and indigenous youth programs worldwide, that creating a culturally embedded program with activities outside of school, good role models, and access to the entire community, is the best chance for success. Through providing materials in every community for engaging cross-country ski lessons and all the appropriate information on equipment, safety, weather, training, and technique, this guide seeks to aid in the sustainability of Nordic Journeys' programs.

Keywords: positive prevention program, rural Alaska, program sustainability, cross-country skiing, curriculum, education, physical education, outdoor education

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Preface

In the spring of 2014, after having been on the road, ski racing myself for the previous five months, I volunteered for Skiku, a Nordic Journeys program. Not being from Alaska, I was not familiar with much outside of Anchorage so after I was told I would be traveling to the village of Kaktovik, I did some quick Internet searches, first to find out where this place is, and second to learn what might be there.

Kaktovik, Alaska is a tiny village of 262 people, mostly of Inupiaq descent, on the northeastern coast of Alaska located on Barter Island in the Beaufort Sea, but when the sea is frozen it doesn't feel like much on an island (Kaktovik, 2017) . Man has inhabited this area for the last 11,000 years, mainly as a temporary village for the nomadic lifestyle of the Inupiaq people (Kaktovik, 2015). By the nineteenth century, Barter Island became a place Alaska Inupiat and Canadian Inuit gathered to trade and engage in whaling expeditions, something that still happens today (Kaktovik, 2015). Many know of Kaktovik today because of the great numbers of polar bears that can be found there. When whaling occurs in the fall, the polar bears move through town to feed on the whale remains, making Kaktovik a tourist destination. I unfortunately didn't see any polar bears.

Figure 1 Geographic location and aerial photo of Kaktovik, Alaska (Kaktovik, 2015)

This basic information gave me a rough idea, but still traveling to somewhere so far away and to a place where the culture is so different from that of my everyday life, I still wasn't sure what to expect. First, I suggest looking up Kaktovik on a map right now to get an idea of just how far away it is. Next, take into consideration that I took a two-hour flight on a 737 airplane from Anchorage just to get to Prudhoe Bay before hopping on a small plane for a 45-minute ride to Kaktovik. This is similar to flying from Salt Lake City to Minneapolis, but I was still in the same state I started in. As the largest state in the country, at 663,268 square miles, Alaska is enormous.

Landing in Kaktovik, it was clear and quite crisp, with a freezing sea breeze coming across the frozen water. The Brooks Mountain Range loomed in the distance giving some depth to this otherwise vast landscape. I was shocked to see some new Ford F150s and Chevrolet Suburbans waiting for us at the airport. I didn't expect cars on such a remote island. I learned however, that in the summer, barges can get in allowing things like cars to be brought up with

less additional cost than say flying a car in.

The village of Kaktovik is approximately ten blocks long and five blocks wide with most houses being small, earth tone colored buildings intermixed with industrial buildings, the very large school, and a few businesses scattered throughout.

We arrived on Easter Sunday so after we landed and got ourselves settled, we went to the community center for an Easter Potluck. I was unsure how we would be received in the community. Here we were, a bunch of white kids from the city trying to teach local villagers our own sport. This is what made me most nervous about the whole trip. I didn't want to seem imposing, disruptive, rude, or inconsiderate. But, I was also intrigued about their way of life, their culture, and their values.

Of course, in a village with a population of 262, everyone knows everyone, so we certainly got a lot of looks as no one knew who we were. I went straight to the wall of the community center to stand, feeling like I had gone back to a middle school dance, being the wallflower, waiting for someone to talk to. Slowly, we engaged in some small talk with people who were waiting in line for their food. After everyone had food, we were able to more formally introduce ourselves to the group and invite them all to come try skiing later in the afternoon.

We returned after the Easter egg hunt, this time with our skis on, to drum up some interest for our program. Immediately, some young boys found me and told me how cool that looked and soon enough they were all climbing on the back of my skis trying to get a taste of that glide that every skier loves. Suddenly, interacting with the kids seemed easy and I quickly realized just why we were there teaching those kids to ski.

We had about 30 kids that afternoon putting on skis for the first time in their lives. There are not any groomed trails so learning to ski on uneven terrain can certainly be a challenge, but

every kid would fall, get up, keep going, and all with a smile on their face or at least a look of determination. These kids all put a great deal of trust in us as they tried something they might not have even seen before, let alone experienced and that made me feel confident in what we were doing. I skied around, freezing to death, trying to help kids get up and giving them some pointers, thinking they too must be freezing or at least tired of falling. But, no, I couldn't get them inside to save my life. I think these kids would have literally skied all night if I had not gotten so cold and eventually put my foot down.

I realized what skiing really means. As an elite athlete, skiing is my life. It dictates my day and is my job. I must race fast to make money, which means, I must train hard, eat well, stay healthy and so on, which often makes me lose sight of what skiing is all about. I love skiing because I love that feeling of sliding across the snow on my own power and I think that is a universal love for all who experience it. The joy these kids got from making their way up the little bump we were skiing on and skiing down it was contagious.

We weren't in the village trying to preach anything or tell them how they should live, we were simply there to teach them this amazing sport that can bring joy to anyone's life. Skiing allows them to see and experience the incredible landscape they live in, to get outside the 8 months of a year they have snow on the ground, and to have fun with their friends. I think the kids, too, realized this after their first day out as they kept coming back for more.

As we skied with the kids every day, we watched them make some great improvements and we could see the confidence they would gain in themselves the first time they would make it down the hill without falling. This reminded me of all the great things I have learned through skiing, making me feel even better about teaching these kids this sport.

We also had some laser Biathlon (a sport that combines cross country skiing and rifle

shooting) rifles, which was a neat thing because, one it provided us something to do when everyone got too cold, and two, because many of the kids already have experience shooting. With hunting being a means of feeding the family, I think Biathlon was an easy sport for the kids to relate to. Having no biathlon experience myself, I enjoyed using the rifles and having races with the kids.

It was a remarkable experience to see and take part in life in a village, pointing to another unique aspect of this program. While people in the community are receiving cross-country ski lessons, volunteers are receiving a lesson on culture and perspective. As a professional cross-country ski racer myself, I cannot begin to count the number of big life lessons skiing has taught me. I have learned everything from goal setting, teamwork, dealing with frustration, and the power of healthy living through skiing, to name a few. With snow on the ground more months of the year than not in much of Alaska, cross-country skiing seems like a great activity to learn many of these lessons, making this program one I believe is valuable to these communities. As a result, I found myself wanting to help in Nordic Journeys' mission of spreading cross-country skiing across Alaska.

CHAPTER ONE
BACKGROUND

Skiku Curriculum and Complete Guide: Reaching for a Sustainable Program

Brief Overview

Alaska Native History (1890-present)

Alaska Natives have a different history than many Native Americans in the lower 48 as the economic development of Alaska occurred much later than the rest of the United States with the first influx of outside settlers flocking to Alaska during the Gold Rush of the 1890s (Thomas, 1986). The early 1900's marked the first push of Alaska Natives working to gain rights to the land they subsisted on with the formation of the Alaska Native Brotherhood (Thomas, 1986). Eventually, oil was discovered in 1968 in Northern Alaska and fast paced development began as everyone wanted a claim in the industry, spreading conflict with Alaska Natives throughout the entire state, not just the Southeast region where the Gold Rush thrived. When their land was in jeopardy, Alaska Natives congregated to form the Alaska Federation of Natives to make sure they received their fair share of the land in a legal sense and were treated better than American Indians in the lower 48 who were largely moved onto reservations. After years of negotiations with the federal government, the Alaska Native Claims and Settlement Act (ANCSA) was passed December 18, 1971 making it the largest Native land claims settlement in the history of the United States (Thomas, 1986; Summit, 1997).

The settlement provided Alaska Natives with $962.5 million dollars and 44 million acres of land or 12% of the state, ending all land claims (Thomas, 1986; Summit, 1997). The way in which the Alaska Natives were to manage the land and the money, was established through the creation of twelve corporations divided up by regions of the state (Thomas, 1986). The idea

being that through investment and good management the corporations would be money making endeavors creating further opportunity for Alaska Natives. All people who could prove they were at least a quarter Alaska Native received 100 shares of their regional corporation (Thomas, 1986). In addition, village corporations were established for villages of a certain population that served the purpose of managing the village lands and could be for profit or non-profit (Thomas, 1986). The hope was that Alaska Natives would largely continue to live as they had for centuries, in their respective villages enjoying a mostly subsistence based lifestyle. While most would argue that this settlement was far superior to setting up reservations, as had been done in the lower 48, many Alaska Natives still feel it was not enough (McDonnel, 2001).

Figure 2: The twelve regional corporations of Alaska that resulted from the ANCSA (Alaska Department of Health and Social Services, 2015).

Today, without a doubt, western culture has infiltrated villages across Alaska, creating

several health, social, and development issues that plague villages today. Villages often boast some of the worst statistics of the entire United States with domestic violence occurring ten times as frequent, suicide four times as often, and rape three times more than the national average (Horwitz, 2014). Smoking, alcohol, and other drug abuse all occur at higher rates among Alaska Natives than the rest of the U.S. (Hagan & Provost, 2009). Obesity and diabetes rates have increased significantly over the past ten years (Hagan & Provost, 2009). In addition, the high school dropout rate and number of Alaska Natives living below the poverty line is twice that of the rest of the U.S. (Hagan & Provost, 2009). Alaska Natives make up about 14% of Alaska's population, making these statistics that much more frightening and the need to address them that much more important. Physical education and participation in sport has already been recognized as a valuable preventative measure as students involved in sport are less likely to abuse drugs (Henchoz et al., 2014).

History of Skiing and Skiku in Alaska

The climate in Alaska is harsh with average winter highs in the NANA region only reaching the single digits (Climate Kotzebue-Alaska, 2017). Many of the villages experience the harshest of Alaska weather conditions as the coastal villages receive ocean winds and interior villages are home to the dry cold. Add in the influx of technology and western culture and suddenly there is a big loss of heritage, culture, and appreciation for the land. While there is no magic fix or even one solution for any of these problems, there are many ways to help villagers bridge cultures and find a balance between the two. These so-called preventative measures do not directly address social, health, crime, or culture issues, but provide opportunities for people to find other areas to focus (Hudson, 1997). Nordic Journeys is one such program. Seeking to provide an opportunity for students to enjoy the vast lands Alaska has to offer while maintaining

a healthy lifestyle.

It is unclear as to when skiing in rural Alaska was first introduced and this certainly varies significantly village to village. The first known skis date all the way back to ca. 6000 BC from northern Russia and we have periodic record of skiing, used as a form of transport for people in snowy climates, across the north from Russia, China, Finland, and Scandinavia (Leich, 2009). It is then possible that Alaska Natives also used skis as transport, but such proof is not known at this time. We do know, however, that some villages have seen skiing since outside cultures first arrived. We know that organized ski programs have been introduced as early at the 1970s in some parts of Alaska. John Miles began a ski and biathlon program in the Bering Straits around this time (Miles, n.d.). I also heard from elders in the northwest village of Noatak that they participated in skiing when they were in school, presumably about the same time Miles was running his program. Even though cross-country skiing may not be a traditional mode of transportation or recreation for Native Alaskans, it provides an incredible way to get in touch with many other traditional aspects of Native Alaskan life because it allows people to enjoy their unique surroundings, something very valuable in Alaska Native culture.

Olympian Lars Flora founded NANANordic in 2012 ("Skiku," 2014). In 2011, Flora presented his idea to NANA, the Native Corporation of Northwest Alaska. NANA executive, Robin Kornfield, became excited about the idea, leading to the founding of NANANordic in the spring of 2012 ("Skiku," 2014). Flora took coaches to four different villages in the NANA region, bringing and leaving them with all the necessary equipment while teaching them cross-country ski skills. It was a huge success leading the program to expand in 2013 to where all 11 villages in the NANA region and Anaktuvak Pass received a cross-country ski camp and equipment ("Skiku," 2014).

Figure 3: The 11 villages in the NANA Region of Alaska (NANANordic, 2017)

Success continued and regions outside of NANA also wanted to be part of the program. As a result, Nordic Journeys was born as the overarching organization in which partnerships with other non-profits and corporate sponsorships could be formed. NANA Nordic continues to operate in the NANA region under Nordic Journeys, while Skiku, a name that combines the Iñupaiq word for ice, siku, with ski, was the program created under the same Nordic Journeys umbrella for all other regions in the state of Alaska. In 2017, 40 different villages were visited throughout the winter. This makes Nordic Journeys a very successful and far reaching organization. Growth of the program will continue each year in hopes of introducing as many people as possible to the joy of cross-country skiing.

Ski camps work by taking volunteer coaches, who are selected out of an applicant pool including Olympians and other remarkable community members, to a village for about 5 days at a time to teach cross-country skiing. Typically done through the schools, students receive ski instruction during their physical education class during the day and then after school skiing is offered for anyone in the community. Cross-country skiing is one way to enjoy an active and healthy lifestyle while appreciating winter and the surroundings under the guidance of very accomplished individuals who have been selected in the hope of serving as role models. This

idea is what makes Skiku and NanaNordic unique programs and ones which can help in the prevention of many of the issues plaguing villages today.

Purpose of the Project

At the end of the week I spent in Kaktovik, we divided up equipment to leave the necessary components at the school. As we zipped up the ski bag full of brand new skis for students to use, I couldn't help but wonder if that bag would get unzipped again before volunteers from Skiku arrived in 2015. This is a problem that haunts programs all over rural Alaska. The distance, cost, and logistics make it challenging for any organization to reach all villages more than once a year, especially when relying on volunteers. With no training or instruction, it is not realistic to think a program can be effective in this environment. Nordic Journeys mission is to "foster the health and recreational benefits of skiing and biathlon through sustainable programs across Alaska." ("Nordic Journeys", 2017). Sustainability is the key word here. While Nordic Journeys has already managed to find enough funding to leave ski equipment in the villages, that is not enough to ensure the ski equipment will be used more frequently than just when volunteer coaches are visiting. Making a program sustainable in rural Alaska entails much more than finding financial stability due to the distance and remoteness of these villages. To truly be sustainable, I believe a program must be adopted by the local community. Nordic Journeys has already built valuable relationships with the Native Corporations and many local communities beginning the process of building a local platform in which to create a sustainable program, but with the lack of a skiing history, more needs to be done.

As a result, Program Director, Flora and I discussed the idea of creating some sort of guide or manual that anyone in the village could pick up and start a more regular ski program. Of course, we hoped to recruit a motivated community member to take over, but recognizing that

not everyone has a background in cross-country skiing, we wanted to include all aspects in the guide. As an education student, I thought I could take my background and knowledge in that field, as well as my experience as a cross-country ski racer to create such a product. My goal for the project is to create a guide that encompasses all areas of cross-country skiing including technique, safety, weather, equipment, training, and racing.

By creating a manual that includes all information needed to run a ski program either within the physical education class or as an extra-curricular, the sustainability of Nordic Journeys is being addressed. The manual provides structure that also allows community members to become involved, help create a program they believe in, and have all the necessary information readily available to do so. Ski training can then take place year round, without the direct supervision of Nordic Journeys program employees or volunteers.

Limitations of the Project

While this project provides the physical means of helping address the sustainability of Nordic Journeys, it still requires finding, recruiting, and/or motivating people in the community to pick up the manual and to put together a ski program. This is certainly a lot to ask of a community and requires Nordic Journeys to make a lasting impact on the community in order to motivate someone in the community to pick up this program. These are issues that Nordic Journeys will also need to address to make the program fully sustainable, in addition to issues such as funding and maintaining a volunteer base.

Definitions

Cross-country Skiing: a type of skiing that relies solely on one's own power to travel across the snow. Also, one of the Nordic sports, cross-country skiing features equipment that attaches the toe to the ski, but leaves the heel free, allowing for better movement.

Program sustainability: Most often this references financial stability, however, this paper uses a more liberal definition from Washington University (2012): the ability to maintain programming and its benefits over time. More specifically, to ensure continuation of the programming, communities will have to adopt the program as their own.

positive youth program: Programming that is designed to introduce youth to alternative activities that are healthy, safe, engaging, and take up free time when school is not in session. These programs are not designed to be a cure to a specific problem, but to provide better activities during the time in which youth are most likely to take up harmful activities. Also referred to as positive prevention.

Understanding by Design (UbD): An educational curriculum framework that emphasis working backward or starting with the end goals before planning the everyday lessons (Wiggins and McTigue, 2005).

Skiku: a name that combines the Iñupaiq word for ice-—*siku*—with ski, this is the name of the statewide program in Alaska working to have skiing as a regular activity for youth.

Nordic Journeys: the 501c(3) non-profit that serves as the umbrella organization for Skiku, operating in most of the state, and NanaNordic, that operates solely in the Nana region.

CHAPTER TWO
REVIEW OF THE LITERATURE

Overview

The literature review has been divided into sections for the different areas of research that were considered when making a complete cross-country ski guide for rural Alaska. Current research in physical education, rural programs, multicultural education, and educational programs specific to rural Alaska were all investigated.

Expanding Physical Education

While traditionally, physical education is looked at as a place for specific rules of sports to be investigated and the skills associated with various sports to be practiced, there is a growing movement to incorporate moral or character education into a physical education setting (Jacobs, Knoppers, & Webb, 2013; Deline, 1991). In a world that can often be dog eat dog competitive, many feel that physical education classes are a great environment to teach skills such as teamwork, cooperation, constructive criticism, sportsmanship, and respect. Developing thorough lesson plans for each day that include time to discuss and reflect can help build cooperation skills amongst students in a physical education setting (Deline, 1991). The Sport Education model is a common model used to do just that. In this model, the students take on all roles involved with sport such as coaching, managing, refereeing, as well as playing (Hastie & Sharp, 1999). Teachers educate students on these various roles and slowly step back week by week, giving the students more and more responsibility. In return, students are learning "leadership, organization, and interpersonal skills (Hastie & Sharp, 1999 p. 419).

Hellison (2011) is a leading scholar in the physical education field. He has developed a

model of personal and social responsibility through physical activity and education. Developed in inner-city Chicago in 1987 (Hellison, 1990), this model was originally designed for at-risk youth in inner-city settings, but has been quickly adapted to many different types of environments (Destani, Hannon, Podlog, & Brusseau, 2014). Youth progress through four goals to develop the responsibility skills Hellison (2011) has deemed important for this at-risk community. Students first learn self-control before moving towards the effort they put in, developing goals for themselves, and lastly reaching the ability to look out for and empathize with others (Hellison, 1990). Expanding this model into an extended day program, after school program, or program during other times when school is not in session has proven effective in reducing crime and gang involvement while also increasing academic performance (Hellison, 2000). Hellison's model (2011) was used by Destani et al. (2014) to teach wrestling, which is often viewed as a violent and/or competitive sport. By building specific lesson plans that address not only the wrestling skills, but the life skills such as self-control, Destani et al. (2014) could successfully teach both wrestling skills and Hellison's responsibility skills.

Along with life-skills, experts have also noted the importance of making physical education culturally relevant (Flory & McCaughtry, 2011). Flory and McCaughtry (2011) used the cultural relevancy cycle in an urban physical education setting to demonstrate the power of not only knowing community dynamics, but understanding how those dynamics affect education, and incorporating knowledge of local culture into the lesson plans. For example, teaching activities and sports students can do at home or adapting them so they work for the community, participating with the students, having a concrete lesson plan for the day and using concrete discipline, teaching and emphasizing respect, and using students first language were all strategies recognized as positive during this study (Flory & McCaughtry, 2011). Culturally relevant

teaching (CRT) means that there is an understanding of the community. Using the idea of a "community of practice," Sirna (2008) showed how physical education can be taught in remote communities:

> Linking curriculum in meaningful ways to students' experiences and local contexts requires the teachers to embrace curriculum as dynamic and emergent. This approach enables the teachers to deliver an outcome-based syllabus through locally mediated contexts. Curriculum that is responsive to the community cannot be realized in a static pre-set course that must be followed to a pre-established outcome. Rather it flows from an active perspective emphasizing the experience of engagement. (p. 8)

Embedding curriculum into the context in which it is to be taught is an effective way of being a culturally relevant educator. The field of multicultural or culturally sensitive physical education is rather small and there is still a lot of research to be done.

Many scholars have pointed out that teacher education fails to address many of these models, techniques, ideas, or situations (Flory & McCaughtry, 2011; Hellison, 2011, Jacobs et al.,2013; Sinelkov, 2009; Sirna, 2008; Sirna, Tinning, & Rossi, 2008). While physical education naturally has lots of flexibility in what is taught and how it is taught, it seems this flexibility has led to a lack of thorough teacher education in the wide variety of issues a physical education teacher might encounter. For the purposes of this project, it is clear that physical education can easily incorporate character development, life skills education, be culturally relevant, and be adapted for the population in which it is serving.

Indigenous Youth Programming

There are several youth development programs in indigenous communities worldwide, but very few have been thoroughly evaluated in an academic arena. It appears that this is

happening more frequently now and this body of literature will grow rapidly in the coming years. From what has been observed and evaluated however, youth programs in rural areas can reduce crime, drug addictions, violence, alcohol abuse, obesity, diabetes, and other health problems, while increasing academic performance (Evaluation of the sporting chance program, 2011; Carter, Straits, & Hall, 2007; Hawkins, Cummins, & Marlatt, 2004; Hishinuma et al., 2009; Hudson, 1997; Lopes, Fouris, & Lindeman, 2013; Warlpiri Youth Development Aboriginal Corporation, 2009).

Lopes et al. (2013) evaluated a few aboriginal youth programs throughout Australia, finding successful commonalities amongst them. Programs that provide activities when school is not in session are best because they occupy time in which students might otherwise seek risky activities or develop bad behaviors (Lopes et al, 2013; Cairnduff, 2001). At the same time, it has been emphasized, that providing activities that allow for risk-taking behavior is important to keep things exciting and to appeal to students that need that type of stimulus (Lopes et al., 2013). Activities that were less structured and more flexible were also more appealing in this particular culture. Often, the size of these communities is less than 1000 people so developing programs that serve a variety of ages are effective in reaching more people. In other words, the community and culture within that community must be looked at and used to create context specific programs (Lopes et al., 2013).

Despite a lack of systematic measures, some youth programs have been considered in a less formal sense. Sporting Chance is a program in Australia that is designed to "improve the educational outcomes for Aboriginal and Torres Strait Islander students using sport and recreation" (Evaluation of the sporting chance program, 2011). Through interviews, program feedback by students and staff were positive citing things like increases in attendance,

engagement, achievement, retention, and community involvement (Evaluation of the sporting chance program, 2011). Using high profile and elite athletes as role models is another commonly used strategy in youth programming that is thought to be effective in preventing students from making poor choices (Evaluation of the sporting chance program, 2011; Warlpiri youth development aboriginal corporation, 2009).

Knowing the vast health reasons to engage in daily physical activity from mental well-being to physical health, outdoor and sporting recreation are often sought as the basis of preventative youth programs. As a result, there have been numerous other benefits of organized sport activities that have emerged in rural areas:

> Sporting activities at the grass roots level have the potential to motivate, inspire, and forge a community spirit in the face of the ever-present scourges of poverty, unemployment, substance abuse, domestic violence, ill health and apathy. (Cairnduff, 2001, p. iii)

The benefits go on, including developing a sense of belonging, improving social skills, reducing stress, anxiety, and depression (Cairnduff, 2001; Henchoz et al., 2014).

While elite athletes often provide valuable role models, it is also imperative that training of volunteers, program employees, and community members is done to maintain a quality and effective program (Cairnduff, 2001; Hishinuma et al., 2009). Program sustainability is a significant challenge in rural communities. To face this issue, Cairnduff (2001) suggests that involvement of the local community allows a program to build from within to be sure that the focus of the program is culturally relevant and appropriate. For example, many aboriginal communities do not have a competitive culture so seeking recreation programs that steer clear of competitive situations are more effective (Cairnduff, 2001).

Another way of addressing the sustainability issue as well as the effectiveness of a program is to design content that is culturally relevant. This has been cited repeatedly for programs that work specifically with indigenous communities as an effective method of reaching out without imposing upon (Cainduff, 2001; Carter et al., 2007; Findley & Tonsmeire, 1989; Hawkins et al., 2004; Hishinuma et al., 2009; Kenyon & Hanson, 2012; Lopes et al., 2013; Ritchie et al., 2010; Takako, 2006; Takano, Higgins & McLaughlin, 2009; Warlpiri youth development, 2009). Project Venture is an example of a program for American Indians that uses culture as the basis of the planned activities (Kenyon & Hanson, 2012; Carter et al., 2007). Participants in the program use outdoor recreation activities and storytelling to revisit and learn about their unique culture and value for the landscape and surroundings while developing self-respect and other key aspects of youth development (Kenyon & Hanson, 2012; Carter et al., 2007). This type of education is referred to as Place-Based Education (PBE), in other words, considering the landscape, culture, and environment in which a program is to take place (Takano, 2009). The Hui Malaka O Ke Kai program is another place-based and culturally-centered after-school youth development program for Native Hawaiians. Again, this program has been found successful in the development of responsible youth by integrating with the local community (Hishinuma et al., 2009).

While these programs do not use methods that directly preach anti-drug, alcohol, or violence messages, by providing an alternative and developing values in youth, this growing area of preventative or positive youth development is effective (Carter et al., 2007; Hishinuma et al., 2009; Ritchie et al., 2010). Hudson (1997), developed five areas in which a youth development program could focus to produce successful adults: health/physical competence, personal/social competence, cognitive/creative competence, vocational competence, and citizenship competence.

A program that creates "The nurturing environment where young people can have a sense of achievement and recognition as well as opportunities for creative expression, physical activity, and social interaction, [will] provide the necessary ingredients that allow youth to fully blossom" (Hudson, 1997, p. 16).

Teaching and Programming in Rural Alaska

There is very little research specifically on youth programs in rural Alaska leading to the more in-depth review of literature on world-wide indigenous youth development programs. Certainly, the information found on aboriginal communities in Australia, American Indian, Native Hawaiian, and Canadian Indigenous people pertain to Native Alaskan communities as well. However, there are a few anecdotal and less formal reviews of various methods of teaching in rural Alaska and different outreach programs. In particular, Takako (2006) reviewed a school program at the Russian Mission School in which students partook in subsistence activities and outdoor trips in order to connect to the natural environment and emphasize traditional cultural values of the Yup'ik people. There were a few benefits that arose from this program. Academic progress improved, students began to value and relate to their natural environment and "by actively involving community values, the Russian Mission School became a more integrated part of the community, and there was a sign that the community began to acquire a sense of ownership in educating their young" (Takako, 2006, p. 282; Takano, 2009). It was found that many students had a lack of experience in subsistence activities and were hesitant to jump in, but once outside, students become very involved (Takano, 2009).

As an educator, looking at the methods in which the students around you are learning is imperative and developing the ability to be flexible and work within the constraints of being in a rural community is a must (Skelton, 2004). Strategies such as teaching multiple ages and abilities

in the same classroom, using different vocabulary, and incorporating traditional activities in the classroom have all been recognized by teachers as ways to have success teaching in remote Alaskan villages (Findley & Tonsmeire, 1989; Skelton, 2004).

In the field of education, PBE models are taking shape in the form of multicultural education rather than a separate type of pedagogy. PBE serves to bridge the gap between the local community, environment, economic circumstances, and culture (Takano, 2009). This method has proven effective in several environments, including rural Alaska (Takako, 2006).

Barnhardt (n.d.) has recognized that most literature is written about American Indian rather than Alaska Native so he has developed a few specific Alaskan teaching resources. Foremost, it is suggested that a newcomer hold off any judgments as long as possible and try to immerse oneself in the community. Recognizing that one may not understand every part of another culture, but can still accept it, is another important aspect of entering a new community. Barnhardt (n.d.) emphasizes place-based education as the best method, taking into consideration the social context in which the curriculum is to be taught. Recognizing that education in rural Alaska has been moving from a more federally dictated system to a more locally run system allows education in the villages to use "Native Knowledge Systems" in conjunction with western education techniques to develop an integrated and more effective form of education (Barnhardt, 2005). Possibly most important, is the idea that every Alaskan community is unique and every situation is individual so taking time and consideration to understand and respond appropriately will go a long way in being an effective teacher in a new community (Findley & Tonsmeire, 1989).

Alaska State Physical Education Standards

Nordic Journeys' mission and vision fit directly into the state physical education

standards, making this curriculum a valuable addition to any physical education program. The standards even mention skiing as an activity in which a student could demonstrate motor competency in adventure/outdoor activities (Alaska State Education Standards, 2008). The standards also address issues such as understanding what a healthy lifestyle is, developing leadership, social skills, self-expression, and sportsmanship, all things that seek to be addressed in the Nordic Journeys curriculum as well (Alaska State Education Standards, 2008). This makes the development of a curriculum for Nordic Journeys a valuable fit to the pre-existing expectations of physical education in Alaska.

Fitting into the Literature

From the review of literature, there are strong ideas that this curriculum should uphold in order to be an effective tool for aiding villages in starting ski programs and continuing the mission of Nordic Journeys. First, the curriculum should incorporate more than just ski skills. Considering areas in which character development can occur, makes for a stronger program. Second, the curriculum should find ways in which to be more culturally relevant. Using local vocabulary, engaging all people in the community, and fostering village values will allow for faster adaptation by a given community. Third, recognizing that not all villages are equal and allowing for a flexible curriculum to adapt to the local community will ease the adoption process. Lastly, making a curriculum that also meets the standards required by the state will make the idea of incorporating skiing into the school more attractive to administrators and teachers alike.

CHAPTER THREE
METHODS

The goal of this project is to create a dynamic curriculum that provides communities with all the knowledge they need to run a cross-country ski program. To develop a curriculum, the stakeholders, the audience, structure, and design of the curriculum as well as the individual lesson plans must be considered. After these choices have been made, the curriculum itself must be completed before testing the product and making revisions.

Target Audience of Project

Teachers who have chosen to take on the role of ski coach will most likely use the curriculum. However, other communities might find an enthusiastic parent or another community member that might be motivated to continue a ski program. They may not have any previous experience with the sport. The teachers may also be new to the community as teacher turnover in rural Alaskan communities is exceedingly high with a three-year running average that hovers around 20% (Hill and Hirshberg, 2013). Additionally, even though the target area is rural Alaska, each village is unique and has its own culture and way of life. It is important that the curriculum is dynamic enough to be able to be easily tweaked to fit each and every community. As Nordic Journeys expands, some villages are just learning how to ski while some of the original participants have been skiing for six years. As a result, the curriculum also needs to work for groups at varying levels and proficiencies. Lastly, the curriculum needs to be accessible. One of the challenges of programming in rural Alaska is the great distance between villages, only accessible by plane. When dependent on volunteers, ease of access to resources that can help them be effective is an important consideration in making a sustainable program.

These requirements led to the development of a web based curriculum. All village

schools are equipped with the Internet so this allows increased accessibility, ease with which the curriculum can be further developed and edited, and more available resources using various multimedia outlets to create a dynamic curriculum. It also provides more of a framework than a step-by-step guide allowing for adaptation for each villages' needs. In time, the web-based platform will also allow for faster communication and dialogue between ski coaches in rural Alaska.

Curriculum Framework

This curriculum follows the framework of Understanding by Design (Wiggins & McTigue, 2005). While Understanding by Design was developed for use in the classroom, it also provides a good framework for effective teaching in general. Understanding by Design (UbD) was used for several reasons. First, UbB offers a framework, structure, and process for developing or using curriculums, including the instruction and assessment components. Using a framework, rather than a rigid recipe curriculum allows for flexibility and adaptability for each program, a key component of this project. This pushes teaching towards improvement and development of skills specific for everyone. Second, UbD requires the educator to work backward by considering what the desired results are before developing the path to get there. This is an important aspect of learning goal setting, something integral to becoming proficient in any sport. Lastly, UbD asks planners to consider how they will know their students or in this case, athletes, have met the goals, objectives, or standards before planning the everyday activities. This forces practices to be more productive because it outlines what an athlete must do to show they have met the goal or objective for that day. Standards can often use difficult vocabulary and be very specific. To combat this, UbD asks the instructor to simplify or broaden the standards into "understandings" or big picture things that the athletes should know. Then,

these understandings are put into question form, referred to as essential questions, that ask something to provoke critical thinking and draw connections between lessons.

Lesson Plan Design

Lesson plans are an integral part of any curriculum. Developing a lesson plan that provides structure is helpful for both the instructor and the student. It allows the instructor to easily adapt the given plans and develop further plans by following the same basic structure. This structure also fits under the Understanding by Design framework, focusing first on the goal or outcome before developing the plan to get there during that day's session. Additionally, kids work well with routines. If a kid knows the basic routine of the day, they are more likely to remain on task or can redirect themselves if they get off task (Ostrosky et al., 2003). Each lesson needs to meet several requirements. First, the lesson plan needs to have very clear differentiated instruction to serve the varying abilities not only within a group of kids, but from village to village. Second, we know that not all kids learn the same way (Gardner, 1983) so each plan needs to include different modes of learning. Each lesson plan has a drill or movement section, a video to accompany it, recognizing that not all instructors will be expert skiers, and of course a written description of the technique. This incorporates audio, visual, and kinesthetic learning. Lastly, lessons need to be adaptable for things like lack of snow or bad weather. As a result, using the basic Madeline Hunter (http://www.onetohio.org/library/Documents/Dr%20Madeline%20Hunter%20Article1.pdf) lesson plan model as a base, I took ideas from the Understanding by Design Framework and my knowledge of ski instruction to create a lesson plan framework. With the UbD idea of working backwards, the goals of each lesson are the first thing that is listed, the first thing that is determined when writing the lesson plan, and the first thing that should be shared with the students. There is not a lot of research to support UbD as a more

successful way to plan, however, it seemed very applicable to athletics as it follows one of the curriculum goals of teaching students how to set goals and work towards accomplishing them.

Lesson Plan Design:

Goals: There are three levels of goals listed for most lessons.
(-) first level of goals: for all students to begin with
(+) second level of goals: for fast learning students or for the group to repeat the lesson in the coming weeks after mastering Level 1
(*) third level of goals.
This allows many different abilities to train at the same time and to use the same basic lesson plan in the coming weeks as kids improve.
Get the Jitters out: something to let kids burn some energy so they can focus on the instructional section
Instructional Piece: Use video of elite skiers to demonstrate what skiing looks like. Point out the motions of a specific technique that will be used that day.
Modeling: Run through the motions of that technique on feet in the gym. As kids become more advanced, ski practice can begin outside on skis and this can be done on skis.
Guided Practice: Let kids try the motions on feet, working through various drills. Again, this can be done on snow once kids get a grasp of skiing.
Once on skis, kids should be given 10 or so minutes to warm up and explore moving on skis. This also allows for everyone to get their skis on and be ready for instruction.
Run through different drills with the group on snow
Independent Practice: Next, set up different stations for different abilities. Keep the different goals in mind that the skiers in your group are working on to set up appropriate stations. You can assign kids to groups or you can let them decide themselves. Let them run through different skills at the stations.
Group Game: Kids have short attention spans so 10-15 minutes is all the time they can spend on an activity before they need to move on. A game that all kids can participate in and use the skills they were working on is a good way to finish up ski practice.
Wrap Up: It is good to ask kids some questions about technique they were working on or different things they learned. Also give time for kids to record progress towards goals and their daily activity.
Standards: Possible standards that can be worked on for each lesson are listed.
Given bad weather, there is always an indoor option as well. The instructional sections should remain the same. All the techniques can be practiced on feet in the gym. After some time is spent practicing body positions and timing for a specific technique, develop stations, a game, or a relay that incorporates that technique as well as any other techniques that have already been taught. In the end, cross-country skiing requires a lot of fitness so reverting to some sort of game of tag is always a good choice to get kids moving! Adding in strength exercises, balance drills, power activities, and stretching are all good indoor activities as well.

Figure 4: The Lesson Plan design

Personal Experience

The next portion of the project involved traveling as a Nordic Journeys volunteer with a nearly finished curriculum to see if my vision was applicable. This was far from an extensive research evaluation and more of an experience gaining opportunity to better understand the needs of villages and the needs of the possible coaches that may use the curriculum. Immersion into a program is a valuable way to better understand the needs, problems, and successes of that program and how it fits into the community. It also provides opportunity to informally discuss different aspects of the community and the program with other volunteers, teachers, and community members. After reflecting on my personal experiences and further study of outdoor education curriculums, the curriculum was handed off to Nordic Journeys and more specifically, a volunteer to head to the villages six weeks ahead of time to try to recruit a coach and share the curriculum as an aid.

CHAPTER FOUR
FINDINGS

The result of this project is a website that provides all the necessary information to start and run a ski program in rural Alaska while addressing the Alaska State Education Standards. The content of the curriculum was chosen based on the personal experience as an athlete and Nordic Journeys volunteer, informal discussion with the Nordic Journeys director and current ski coaches, and research of other youth ski programs in the United States. The curriculum was created using Weebly (www.skikucuriculum.weebly.com), an online platform used to create websites. The content is sequential, starting with the goals and working through all the components necessary for a person to become a coach and run a ski program. Below is a table outlining the different pages included within the curriculum

Table 1

Outline of Skiku Curriculum Website

Home
About
Essential Questions and Understandings
Basic Guidelines
- -Building a Practice
- -Equipment
- -Safety

Coaching Basics
- -Coaching Philosophy
- -Communication
- -Coaching Multi-age, Multi-ability Groups
- -Assessment
- -Goal Setting

Biathlon
- -Safety
- -Set up and Storage
- -Rifle Basics
- -Training Activities

Lesson Plans
- -Equipment Basics
- -Ascending and Descending
- -Classic: Striding Basics
- -Classic: Double Pole
- -Classic: Kick Double Pole
- -Skate: No Pole
- -Skate: V1
- -Skate: V2
- -Skate V2 Alternate
- -Downhill Skills
- -Adventure Ski: Birkebeiner
- -Adventure Ski: Scavenger Hunt
- -Setting Goals
- -Intensity Basics
- -L4 Intensity Training

Training Basics
- -Training Levels and Design
- -Recording Training
- -Dryland Training
- -Racing
- -USSA Pipeline

Games
- -Short Games
- -Group Games

-Relay Games
-Skill Practice
-Tag Games

Standards

-Grades K-2
-Grades 3-5
-Grades 6-8
-Grades 9-12

Resources
Contact Us
Community
References

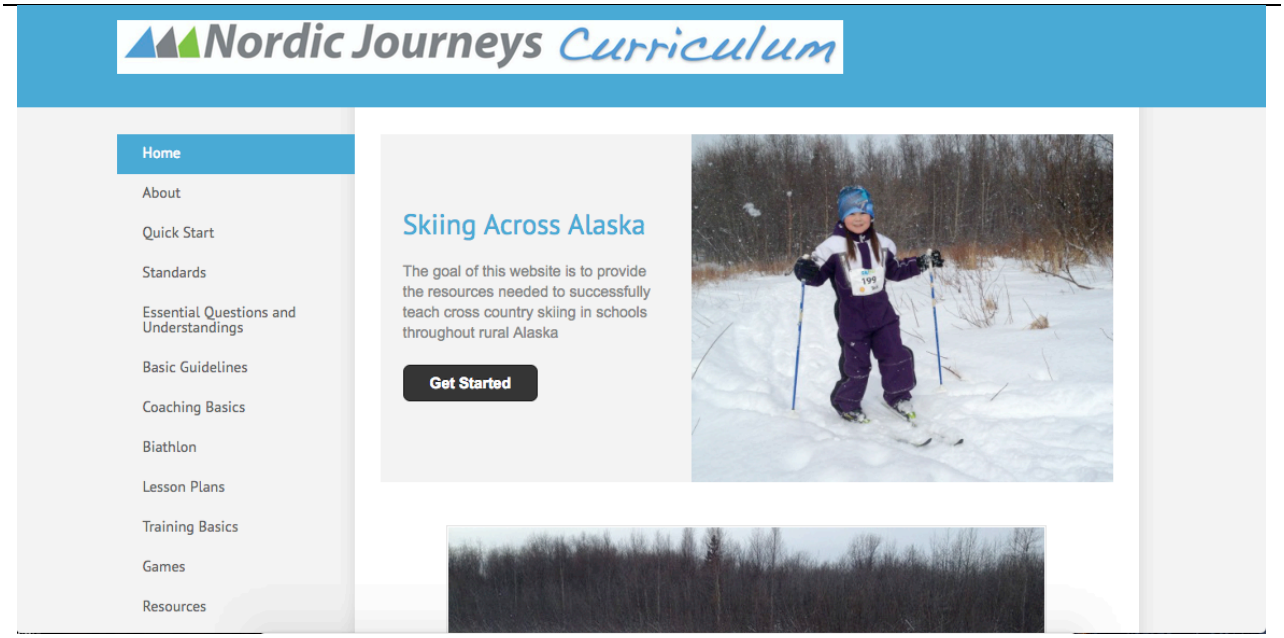

Figure 5: Homepage of the website

What is included in the Curriculum?

The first page of the curriculum is designed to tell about the Skiku program, the goal of the curriculum and the most important things to run a ski program in hopes that at the very least, that information will be shared. Next, following the UbD framework, the outcomes and goals are written both in the form of Alaska State Physical Education Standards and what more specific

goals this curriculum should help kids reach.

Table 2:

Understanding by Design Outline for Nordic Journey's Curriculum

Students will understand that… · Outdoor recreation is a way to develop personal character · Setting goals is a process that needs daily attention · Exercise makes you feel good and leads to a healthier life · Outdoor recreation is a way to connect to the surrounding environment · Learning a new set of skills takes teamwork, determination, goal setting, patience, practice, and focus	Essential Questions: · What can we learn about ourselves through learning to cross-country ski? · How can setting goals help us to reach our dreams? · How can learning cross-country skiing enhance our daily life? · How can we develop a connection to our environment through cross-country skiing? · How can cross-country skiing lead to character development? And what characteristics do we need to develop?
Students will know… · How to transfer energy from body to skis · The difference between V1, V2, Double pole, Striding · Ski safety · Proper equipment and care for that equipment · The value of goal setting	Students will be able to… · Ski on their own over undulating terrain · Ski using the appropriate technique for the terrain · Decide when it is safe to ski · Pick up, put on, and store ski equipment · Set appropriate ski goals for the season

The basics of skiing, including the equipment needed, possible safety concerns, and how to build a practice session are next to provide the proper background for an instructor. It is important to understand the equipment, possible dangers, and best recommendations for length of a practice, time of year, length of a season, and how to get the equipment to the students before attempting to learn the actual movements on skis. This provides a structured backbone for any program to be effectively run.

Next, an instructor needs to know the basics of coaching before being put into a coaching position. This section includes how to create your own coaching philosophy, best ways to communicate with youth athletes, ways to best coach multi-age and multi-ability groups, how to

assess students during ski practice, and methods for teaching goal setting, a key component of this curriculum. This section is designed to give an instructor background on how to be the most effective in their coaching, maximizing the time spent with kids during practice. School teachers will have a lot of this background knowledge already, but this section will help translate those skills into an athletic arena, specifically cross-country skiing. This section is important to not only help translate teaching skills into a sports setting, but also help develop these skills in different members in the community that might not have teaching backgrounds. This also ensures that anyone can help lead a ski program, tackling the goal that this curriculum be easy to use for anyone.

Fifteen lesson plans are included as a base for running a season long ski program. Many of the lesson plans have multiple levels included so the lesson plans can be reused with more advanced skills as the athletes' progress. The lesson plans are organized by skill and are designed to teach basic ski skills first before taking athletes through a full progression of techniques in both skate and classic skiing. Additionally, two lesson plans were created as culminating experiences, incorporating all skills and allowing for students to work more specifically on character development. Lastly, there are lesson plans for specific workouts designed to increase fitness, as kids become more competent skiers. As described in the methods section, the lesson plans include audio, visual, and kinesthetic learning as well as differentiated instruction to account for the varying ages and skills likely to be present in any one ski group.

Once kids start to develop ski skills and the program becomes more regular, it is important to begin to push athletes from a training perspective. The training section includes information and the basics of training for cross-country skiing by increasing strength, speed, and fitness. This section includes how to design a training plan for a week, season, and year, how to

record training, training ideas for the summer, and how to get involved in racing. There are links for different race series throughout Alaska as well as the National Governing Body, United States Ski and Snowboard Association (USSA) with suggestions for age specific development in cross-country skiing. This information is also important, as the Alaska State Education Standards require students to develop an understanding of fitness and be able to design training on their own.

A major goal of Nordic Journeys and of this curriculum is to make cross-country a fun and worthwhile activity for kids in rural Alaska. As a result, almost all lesson plans are designed to incorporate different games that help build specific skills on skis and continue to foster character development. To help mix things up and keep the lesson plans flexible and adaptable, a complete section of different games was included. The games are divided into sections based on the type of game. All the games can to substituted into the lesson plans or simply used on their own to keep things fresh and fun, while working on ski specific skills.

Lastly, a section of different online resources to help instructors find the information they need was created with the understanding that different instructors will want more information in different areas. It includes links on how to get information from USSA, as well as other youth ski programs that have developed coaching resources, technique videos to provide more visual aids, and links for skiing organizations throughout Alaska.

How to use the Curriculum

The curriculum is very sequential so anyone interested in becoming an instructor can simply work down the menu and have all the basic knowledge for running a ski program. The lesson plans are downloadable so coaches can download them and edit them to best fit their style, their program, and their community. The videos have all been stored on youtube.com so

that they too can also be stored for use by instructors without linking through the curriculum every time. Ideally, anyone interested would first read through the whole curriculum before picking the pieces they find most valuable to refer to or base their program off. Keeping with the goal of a flexible curriculum, this content is designed to be edited and adapted for maximized use in each community. For example, there are many different languages spoken throughout rural Alaska so it did not make sense to incorporate some local vocabulary into any of the lessons or games, however, that is strongly encouraged and proven to make a better connection with the community.

CHAPTER FIVE

CONCLUSIONS

When developing curriculums for specific and unique communities, it seems imperative to immerse oneself in that community to try to understand exactly what the curriculum should include. The literature review provides insight into different programing aspects for rural youth programs, but part of what makes rural youth programming so challenging is the unique barriers each rural community must overcome to have a successful program. As a result, part of the research aspect of this project involved personal experiences as a Nordic Journeys volunteer. This section serves to reflect on those experiences and how this curriculum fits into the Nordic Journeys program for the future.

My Experiences

As discussed in Chapter 1, I traveled as a Skiku volunteer to Kaktovik in 2014, sparking the idea that led to this project. In 2015, I traveled to Barrow, having completed the curriculum and hoping to get a better sense of how it might help maintain a local ski program. I spent the week working in the middle school, teaching all P.E. classes as well as after school skiing. There were five classes a day with anywhere between 10-25 kids in it with an additional 30-40 kids who joined after school skiing. It is exhausting and often overwhelming to take over someone else's class and teach them how to ski, but it certainly allowed me to see where my curriculum would be helpful and where edits needed to be made to be more effective. Barrow, Alaska also has a designated ski coach, who unfortunately was only able to join us skiing the last day, pointing to probably the largest problem in creating a sustainable ski program. It will be a challenge for Skiku to find someone who has the time and dedication to run a consistent ski

practice. One of the frustrations is that these coaching positions are often filled because they offer extra pay, but there is not much competition for the job so the person who takes it might not know much of anything about what they are coaching or have the interest in making a team. My hope is that by providing this curriculum, the job becomes less daunting and time consuming.

In 2016, I traveled to Noatak, Alaska, my first time to the NANA Region. Nordic Journeys originated in the NANA Region so the students had taken part in this program for the past 5 years. This provided some new insight into how a program must keep fresh to keep the kids as excited year after year. It was exciting to know that many of the kids had used the skis over the course of the winter. The challenge is that once basketball season starts, it is rare to see anyone skiing. With such small communities, it is challenging to have more than one sport "in season" at the same time so one of the keys for skiing will be to compliment the basketball season rather than compete with it. Luckily, there is snow on the ground for four to five months! The elders in Noatak were very excited to tell us about how skiing used to be a big sport in the village and many of them had participated. This is also a valuable thing to know as their excitement brought more support for our program and lets us know that a ski program is possible.

In the summer of 2016, I traveled to Unalakleet as a volunteer for another non-profit, Healthy Futures of Alaska. This was a valuable experience as it allowed me to see another village and to see how other programs operate in rural Alaska. Unalakleet is home to Nick Hansen, also known as the Eskimo Ninja. He is a competitor on American Ninja Warrior, a popular televised competition that challenges athletes to make is through a short but grueling obstacle course. He not only coaches many sports at the school, but acts as a great role model to all the students and is constantly emphasizing the value of sport and activity. The kids in

Unalakleet and around Alaska follow Nick and are motivated by him to participate in sports. While waiting in the airport in Kotzebue with him, at least ten different people came up and asked for a picture or said they were a follower, emphasizing the much stronger power of a more local hero. This made me realize the importance of having role models, something which Nordic Journeys provides by seeking to recruit high level skiers to volunteer. However, I believe the power of a local role model is even stronger. In a few villages where skiers have been developed, a few of those skiers have also worked as volunteers, hopefully filling the local role model void. I hope this aspect continues as more skiers are developed in the villages.

Lastly, in 2017 I traveled to Kotzebue, the hub city for the Nana Region. While Kotzebue itself was largely struggling from many of the issues that I found in Barrow, they did have two local women who ran a ski club for about six weeks in the late winter. Unfortunately, there was a cold snap, forcing them to cancel a number of the practices. I hope with my curriculum in hand now, they will not cancel, but will simply adapt practice and still get kids active. In addition to my own week volunteering, I was able to connect with a number of volunteers returning from villages throughout the Nana Region, allowing me to gage where many of these villages stood in terms of having a ski program.

Challenges and Limitations

As a volunteer, I faced challenges that pushed me to change and revise parts of the curriculum. The biggest challenges I faced were group management, varying skill level, and short class periods. Struggling with group management I felt was largely due to being an outsider who took over someone else's class and therefore not being familiar with that teacher's rules, guidelines, and procedures. However, I think I could have taken my own advice as well. Developing a checkout and check-in process for the equipment as well as a routine for starting

each class is key to good group management and making the most of the short time on snow.

Even in a group of first time skiers, it is amazing the different paces at which people learn new skills. While everyone may have started on the same level, after ten minutes of class, there are many skill levels. This is something that is hard to adapt to on the fly in a limited time frame. As a result, I added varying levels into each lesson plan so an instructor can be equipped each day with different activities to direct kids to as they progress. Additionally, some games or activities caught on well, while others just didn't connect with the kids. This variance in the skillset would vary class to class all day. This led to the suggestion that an instructor should be equipped with a few different games and activities that work on that day's skill so that if something is not working well for a group, the instructor can quickly switch them to a new activity.

Lastly, I found it challenging to do more than two different activities with the short class periods. With only five days to work with the kids, on-snow time was emphasized, leading to a little more chaos as skill practice inside or without skis was largely left out. Of course, with a more consistent program, the push to get kids on snow would not be as significant, but if skiing is to take place in the physical education classes, dealing with short class periods will continue to be a challenge. I chose to leave the lesson plans as they are, most needing about 90 minutes to complete, with the idea that ideally, an after-school ski program would have 90 minutes to work with. I chose instead to add in suggestions for what to cut out to reach a time limit.

Overall, my experiences provide a very limited scope to the different challenges and shortfalls of this curriculum, but with 200 hours spent volunteering in villages, this will provide a first stepping-stone to creating something of value for village communities and the Nordic Journeys program alike. Developing a strong routine, being familiar with different games and

activities, and having consistent ski practices are what I felt the most important parts to overcoming the challenges I experienced.

Successes

It is exceedingly challenging to measure the success of my curriculum in aiding consistent ski programs in Alaska. It is simply one aspect of aid Nordic Journeys can use in pursing their mission. At this point, there have been no formal studies done to measure the effect of this program, however, there are some pieces of evidence that suggest progress and success, specifically in the Nana region that has been recipients of NANA Nordic for six years now. First, two skiers from Buckland, were able to compete in the neighboring regions ski championships, something they had been striving to do since being introduced to skiing (Treinen, 2017). Second, many of the volunteers I talked to in Kotzebue that were returning from villages discussed the state of the ski program. In Ambler, volunteer and elite skier, Elizabeth Guiney, reported that there was a coach who was running a checkout system and ski practice. In addition, she was able to get the proper equipment for waxing skis built and taught the coach how to wax. This marks great progress and further suggests the importance of a curriculum such as this that helps to teach information like caring for the equipment to an excited coach with limited knowledge.

Future Plans

The curriculum provides an extensive amount of information and everything needed to begin a ski program. While edits will need to be made as time passes, the next step is to get the curriculum distributed and to recruit ski coaches in each community. This process will need to begin in the winter when Nordic Journeys begins sending volunteers to different communities. A recruiter or gatekeeper will be sent to a sample size of villages to initiate a ski program six weeks before the NanaNordic camp week happens. This allows NanaNordic volunteers to follow up

with the coach and students after six weeks. Another method of doing this would be to have Nordic Journeys volunteers first become familiar with the curriculum. This would help them get more ideas on how to be more effective during their time in the villages and allow them to discuss the curriculum and run through it with different people in the village as a method of recruiting a ski coach. It will be much less daunting for a potential ski coach to run through it with someone else and to have help running ski practice for the week in which Nordic Journeys volunteers or a recruiter are there. Next, there needs to be a method of following up with the ski coaches to enhance the curriculum, provide more resources, and ensure the programs are continue to run after the volunteers have left. The website currently has an area in which to leave comments, feedback, pictures, or ideas both on the curriculum itself and any skiing experiences village teams want to share. This is voluntary however, so more structured feedback will be a future step that needs to be taken by Nordic Journeys. Additionally, acknowledging that each village is unique and has slightly different needs, it would be valuable to conduct more action research while in each specific village to better understand those unique needs and how they can be met.

Program sustainability is a multifaceted problem and project that cannot be solved with just a program curriculum; however, this provides a written and easily distributed foundation in which to work from. It provides continuity of expectations and techniques throughout rural Alaska as well as a resource and wealth of information that most villages need to even consider starting a ski program.

This is the starting point of research for Nordic Journeys. Understanding the needs of the villages and what makes a valuable program in these communities is the first step before evaluating the effectiveness of the program itself. As Nordic Journeys rapidly expands across

Alaska, the need for more qualitative research on the reach and outcomes of the program will need to be evaluated to maintain a strong and worthwhile program in the coming years.

Understanding that this is just the tip of the iceberg in terms of research that can be done both to enhance Nordic Journeys' programing and to also better understand the effect of the program, having a consistent and tangible curriculum will aid immensely in further research as each village will have a common thread and the mission of Nordic Journeys can be more thoroughly carried out.

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Appendices

Appendix A

Lesson Plans

Lesson Plan 1
Content Area: P.E.- Cross Country Skiing

First Day on Skis

Time Estimate: 60-90 minutes

Summary: Kids will be introduced to cross country ski equipment and how to use it. Kids will learn the basics for movement on skis and have time to explore the feeling of skiing on snow

Goals/Objectives:
Athletes will know and understand the rules established for safe skiing
Athletes will understand that using the equipment is a privilege so it should be properly taken care of in order to be used again.
Athletes will be able to:

- identify skis, boots, bindings
- put on and take off their equipment on their own
- get up after falling on their own without taking their skis off
- get into an athletic ready position on skis
- know what dangers might exist and how to act
- dress properly for winter activities

+ jump in place on skis
+ balance on one ski

* use a star turn technique on flat terrain to change directions
* use a side step technique to move side to side

Assessment:
Check to see if athletes can return their equipment without your help.
Observe kids who are self-sufficient in falling down and getting up.
Simon says with equipment will let you know if students know the vocabulary
Observe students in stations practicing skills like jumps, star turn, side step. Watch for students obeying and understanding rules and procedures.

Equipment/Tools/Terrain:
Gym
Flat packed out area

Skis and Boots

Get the Jitters Out:
Run two laps of the gym, do 10 jumping jacks, and take a seat

Instructional Input:
Show World Cup footage- explain the difference between skate and classic
Show skis, boots, poles, bindings, tips, tails. Point to one and have kids name the piece.
Establish rules and procedures for equipment. Post rules. How do you want kids to pick up equipment, put it back? Where are kids allowed to ski? How should skis be carried, treated?
What safety is involved with skiing? What are the procedures if there is an issue? What happens if there is an animal? What happens if someone gets hurt? These procedures should also be posted somewhere to remind the kids daily before going outside. Safety involves proper dress as well. Discuss the importance of dressing in layers and staying warm. Muscles work best when they are warm.

Modeling:
Model proper way to pick up equipment, put it on, take it off, and put it back. Ask students to do the same, pick up their equipment and practice clipping the boots in and out of the bindings. Model a situation in which an animal comes into the ski area or someone gets hurt. Model the proper reaction and procedure for dealing with those events. Have kids help you act out a scene as well. If you are volunteering, make sure you are aware of the leaders safety plan before heading out.

Guided Practice: Move outside to snow. Have every one circle up and get into an athletic position. Knees slightly bent, weight over the balls of the feet, shoulders rounded a bit, hands forward. Next, demonstrate falling down and getting back up. Roll onto side or back to untangle skis first. This is often referred to as the dead bug. Next, roll forward onto your hands and knees before lastly, standing up. Remember on a hill, your skis must be perpendicular to the fall line of the hill in order to be able to stand up. First have kids get into a good body position. Next, have all the kids fall down and try to get back up. Make a game out of it. A storm hits and a big gust comes and knocks everyone down, they get up and suddenly a wave crashes over the boat knocking everyone down again. Remind kids to get back into the athletic stance in between to be more stable for when those gusts come. If going well, add in idea of jumping on skis in place or standing on one foot or the other.

Independent/Group Practice and Differentiation: Athletes should then have 10 minutes to explore moving on skis on their own. This might very well be all you get to in a 60-minute time frame with younger or first time skiers. Remind students that it is important to warm up for activities, especially in the winter when you are in the cold. Muscles need to be warm in order to work best. Every session should start with 10-15 minutes of free skiing to not only let kids get comfortable, but to give the muscles time to warm up. Remember this means that you must be moving, muscles don't warm up by gossiping with your friend. Have everyone stand in a circle.

Show an athletic body position on skis.

If skiers are more advanced or time allows, introduce the star turn and side step. The star turn requires a skier to keep the tails of their skis in place while picking up and moving the tip of the ski, essentially moving in a circle and creating a star. This is a way to change directions with skis on. This can also be done with the tips in place and moving the tails, however, this is more for building agility then any practical movement. The side step is what is sounds like. Pick up and move one ski to the side, keeping it parallel to the other ski. Then bring the other ski next to the one that was just moved. This is to move side to side. This skill becomes more important when learning to go up and down hills. Move more advanced skiers to a hill to try side stepping up a hill. Remember athletic body position when descending the hill.

Group Game:
Hokey Pokey- work on balance on one ski and star turn when turning all about.
> "put your left ski in, take your left ski, put left ski in and shake it all about. You do the hokey pokey and you turn yourself around, that's what it's all about."

Relay races- ski a short distance, do a star turn and ski back

Indoor Option:
Introduce skiing, equipment, and safety all the same. The Hokey Pokey and Simon Says are both good games. Additionally, you can have kids work in groups to explain the equipment to one another and quiz each other. Have kids practice getting in and out of the skis in the gym. Have kids act out different situations in which safety is involved, practicing the safety procedures.

Wrap Up
Remind athletes of equipment care and procedures for returning equipment. If time, play Simon says with equipment to view vocabulary.

Standards:

K-2
Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

6. Demonstrate balance on the ground and on objects, using bases of support other than both feet.

Standard C
Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large groups) without interfering or excluding others.

4. Identify reasons for rules and procedures during physical activities (e.g., safety, equipment, directions).
7. Describe appropriate reactions to threatening and/or emergency situations common to physical activity settings (e.g., bear or moose on playground).

8. Understand the importance of dressing appropriately for outdoor physical activity (e.g., layering clothing during winter, sunglasses, sunscreen).

9. Select appropriate safety equipment for specific physical activities (e.g., bike helmet, personal floating device).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:
5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5:

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate awareness and participate safely when involved in activity.
8. Act in a safe and healthy manner when confronted with conflict during physical activity.

Grades 6-8

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate appropriate behavior in physical activity settings.

2. Demonstrate concern for safety of self and others during games and activities.

3. Demonstrate self-control and sportsmanship/etiquette during games and activities (e.g., accepting controversial decisions).

Grades 9-12:

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate leadership by holding self and others responsible for following safe practices, rules, procedures, and etiquette in all physical activity settings.

2. Demonstrate an understanding of responsible personal and social behaviors in physical activity settings.

Lesson Plan 2
Content Area: P.E.- Cross Country Skiing

Expanding basic skills- learning the basics of ascending and descending

Time Estimate: 60- 90 minutes

Summary: Kids will review ski equipment and basic movements while expanding their skills to skills that can be used for ascending and descending. Kids will begin to learn how to record activity and learn the basics of exercise.

Goals/Objectives:
Athletes will be able to:
- Wedge/snow plow to control speed on downhill and stop
- climb uphill with both the side step and herringbone techniques
- change directions using the wedge
- record their activity for the day and their observations on exercise.

+ link turns descending
+ descend in athletic position or tuck in control, being able to stop at bottom

* descending on one ski

Assessment: Watch for kids who are in control and have the ability to stop. Watch for athletic body positions. Pay attention during games to see if kids understand how to stop and go. Look at students' activity logs to see if they recorded it and what their observations were.

Equipment/Tools/Terrain:

Gym
A gradual hill
Cones or slalom gates
Activity log/chart

Get the Jitters Out:

Run two laps of the gym, do 10 frog hops, and take a seat. Have World Cup clips playing as kids settle down.

Instructional Input: Review rules and procedures as well as the skills already learned. Consider a short game of Simon Says or an interactive quiz. Introduce the new skills, the wedge, and the herringbone. Show pictures and/or video. When beginning to learn to move up and down hills is typically when frustrations grow high and fears or lack of confidence becomes more apparent. It is a good idea to start talking about this early. This conversation is going to vary a lot with age, but here are a few keys:

- emphasize the importance of learning, not performing
- talk about educated risk taking or learning by doing
- what makes a good teammate? How do we act around others who are better or worse than us at a skill? How can we help others who are struggling? What makes a good compliment? What makes a compliment turn offensive?
- What helps you when you get frustrated? Does getting angry ever help? What makes frustration worse or better?
- Discuss your goals for the kids: to get outside and live a healthy lifestyle!
- What is a positive statement or way of thinking? Is it ever helpful to be negative?

It is a good idea to brainstorm with the kids and write these things down, post them somewhere visible to the kids or have them write their own thoughts down in a notebook This is a great way to start a goal book and training log.

Lastly ask the students to think about what happens when we exercise. When they are out there going up and down hills, ask the kids to think about what is happening inside their body when they do these different things. You can even have them make some predictions or hypothesize about the different things the body does when exercising. For older kids who will likely have some idea already, ask them to be more specific, what happens to your heart? Your lungs? Your muscles? Your brain? Etc.

Check the training log section to see age appropriate ways to record and challenge kids in

tracking training and activity.

Modeling:
Always model how to be a good teammate, constructive leader, positive influence, and all the other things brainstormed above!

Guided Practice:
Have kids pick up equipment and head outside. Because it takes everyone varying amounts of time to get ready, it is a good idea to have 10 minutes of free ski while everyone is getting ready. Eventually, circle up to introduce the new skills.

It is best that these skills are taught together because one has your skis in an upside down V and is for descending while the other has the skis in a V and is used for ascending. If you are going to practice going down, you might as well practice going up at the same time. This rule should always apply! Along with the wedge or snowplow, it is a good idea to teach athletes how to descend with parallel skis. First, the wedge, or snowplow, is taught as putting your skis in a pizza or piece of pie while parallel skis are referred to French fries. This is a fun way to have kids switch between the two.

To use the wedge effectively, athletes should be in an athletic position with their knees slightly bent, weight on the ball of their feet and arms relaxed with hands slightly forward. Ski tips are brought together while the tails are pushed apart. In order to effectively slow down, the tails are actively pushed apart while rolling onto the inside edge of the skis.

Practice getting in and out of a wedge while on flat ground.

Next, demonstrate the Herring Bone technique. Used for steep climbs, this is also referred to as the duck walk. First, get into the athletic position. This time, the tips are brought out so the skis are in a V. With feet reaming in a V, one foot steps up the hill and the other foot steps above that one. It looks like a waddle, with feet turned out, hence the name duck walk. If using poles, the opposite pole is brought forward with the leg, just as in walking. It is imperative that the weight is forward and rolled onto the inside edge of the ski. Most of the time students will try to herring bone with a flat ski and will end up just sliding backwards. Turning the edge in will give the ski bite into the hill to prevent slipping backwards.

Lastly, to turn while snowplowing, pressure is placed on the downhill or outside ski while essentially pivoting from the tips of skis around a cone, gate, or corner. Bring hands more forward and move hands in the direction of the turn. Hands help keep balance and shift body weight. They can often be used as a steering wheel. Having athletes pretend they are actually holding a steering wheel is a good way to remind them to bring their hands up and use them for control. Skis can remain more flat in this case because the goal is not to stop or even slow down, simply to change directions.

First have kids simply herringbone up a hill and descend it in control, snowplowing as much as needed. Next, set up cones or gates in which kids have to turn around while descending the hill. Make it fun by extending arms out and pretending to be airplanes, leaning into the turns or

putting an arm down on the inside of each turn picking berries. Add pole plants and pretend to stab a snake on the inside of each turn. Challenge kids to use a bigger pizza, a smaller pizza, stand up tall, or get into a low tuck. Challenge skiers on the uphill Herringbone section as well. Try different sized Vs, try not using an edge, try moving faster, taking bigger steps, smaller steps. The more times up and down the hill, the better. Remind kids of your brainstorm, bringing up ideas that help frustration, are good ways to help teammates, how to remain positive, etc.

When kids are at the top of the hill, ask what they feel? How does their body react to going uphill? Do they feel warmer? Colder?

Independent/Group Practice and Differentiation:
There are many more variations and expansions for these skills. For example, challenging kids to come to a complete stop quickly. At this point they can do that using the wedge technique. This requires them to really use the inside edges and push the tails out hard and fast.

As kids get comfortable, show how to go faster downhill: a tuck! Demonstrate a tuck position. In the tuck, knees and ankles are bent while the upper body bends forward as well, hinging at the hips. Stick your behind out and rest your elbows on your knees. The back should be parallel to the ground. Knees will be bent at almost 90 degrees. Why is this so much faster? Discuss air resistance and stability on skis. Have kids try descending with their feet close together and far apart, which is faster? Which is easier?

Jumps and obstacles are always a hit with kids and will always challenge kids with coordination and balance as well as control on skis. Never hesitate to add a small jump. This is also a great thing if you run out of activities on any given day

Obstacle courses can be created for practicing ascending and descending skills. Use cones or gates to create turns on both the up and down. Have kids pick up objects, jump over things, tuck under things, review the star turn, etc. Have sections where kids can't snowplow, where they can and so forth. This is an easy way to differentiate based on ability. Set up three or 4 different courses all with varying levels of skill required. Kids can start at the easiest one and move up as they feel ready.

Group Game:
Red light green light is a great game for working on ski control. Use both the uphill and downhill. Kids start moving when you say green light and have to stop and be still on red light. The leader turns their back to the skiers on green light and spins around towards the skiers on red light. Any skier that is still moving when the leader turns around saying red light is out.

Indoor Option:
Review all the ski equipment. Go through all the instructional pieces the same. Spend more time discussing teamwork and dealing with frustrations. Set up obstacle courses and slalom gates in the gym and get the kids running.

Wrap Up

Review the techniques for the day, challenging skiers to use the right vocabulary. Have students call out the technique as you perform it. Ask skiers things like what was the fastest way to descend? Ascend? How do you stop quickly? What did you do when you got frustrated? Did someone help you? How did they help you? Did you help someone else out? How did you do that?

Lastly, ask kids how they feel after exercising? Have them record their activity in an activity log, training log, or chart and write down any observations about what happened when they were exercising. If time is short or kids are too young, a group discussion will work too.

Standards
Grades K-2

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

1. Perform various forms of loco-motor movement such as walk, run, slide, gallop, jump, hop, leap, and skip.

18. Move with effort, time, force, and flow.

Standard C
Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

3. Explain ways the body responds to physical activity (e.g., sweating, increased heart rate, increased breathing).

4. Demonstrate activities that develop muscular strength and endurance (e.g., climbing, weight bearing).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large

groups) without interfering or excluding others.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

4. Identify feelings resulting from challenges, successes, and failures in physical activity (i.e., happy, scared, angry, sad).

5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5

Standard B
Apply movement concepts to the learning and performance of physical activities

5. Use specific feedback to improve performance.

Standard C
Participate regularly in physical activity:
2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

6. Choose to participate in activities to increase muscular strength and endurance.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

Grades 6-8

Standard C
Participate regularly in physical activity:

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Grades 9-12

Standard B
Apply movement concepts to the learning and performance of physical activities:
2. Use a variety of complex movement patterns, independently and routinely, to improve skills.

3. Acquire new skills while continuing to refine existing ones.

Lesson Plan 3 & 4
Content Area: P.E.- Cross Country Skiing

Classic Basics- No Poles

Time Estimate: 2x 60 -90 minutes sessions

Summary: Kids will learn the basic movements of classic skiing without poles in order to focus on leg movements and limit amount of coordination needed while still working on balance. Poles will be added in, at earliest, in the second of these two lessons.

Goals/Objectives:
Athletes will be able to:

- stride on the flats without poles
- have weight transfer from one ski to another
- swing arms as if they were holding poles

+ stride uphill
+ vary the length of the stride

- stride using poles, planting them with proper timing
- stride up steep terrain

Assessment: Watch for weight transfer as kids ski around. Look for timing with opposite arm

swinging forward with opposite leg.

Equipment/Tools/Terrain:

Gym
Flat packed out area
Gradual hill

Get the Jitters Out:

Session 1: Run two laps of the gym, do 10 single leg hops, and take a seat

Session 2: Bound across gym. One time with as few bounds as possible and one time as fast as possible. Take a seat

Instructional Input: It's not important to read this word by word to students, but to have a few phrases picked out to cue kids on technique. Starting with the modeling section with the students will make more less instruction time. This section is more for coach preparation.

Session 1: Show World Cup footage of classic skiing. Discuss basics. Start in an athletic stance with weight over balls of feet, soft knees and ankles, hands slightly forward. Shift weight to one leg. Then, using a small compression with hips, knees, and ankles, step forward shifting all your weight onto the other leg, releasing the opposite leg behind. Keep upper body forward and joints soft. One way to make sure body position is forward and joints are at correct angles is to make sure your nose, knees, and toes line up when all weight is on front leg. From hips to shoulders, the back should remain in natural position. Arms swing opposite of legs as in walking or running. Arms should be relaxed and the swing should simply help the forward momentum and timing. The phase in which the weight is dropped onto one ski in order to propel the other ski forward is often referred to as the "kick." This is a bit misleading because never is the ski actually being kicked backward. The body weight is simply being dropped onto that ski in order to create traction from the fish scales or wax. Because the term "kick" is embedded in our terminology now, it is best to think about it like the weight is being dropped onto the ski to create power and traction for the opposite leg to "kick" forward. It is always a good idea to think about any movement as a movement that will help to create forward glide and movement down the track as opposed to any sort of movement backwards.

Session 2: Review classic stride basics and show more World Cup video. If kids are ready, add in poles. For younger kids, going without poles is almost always better, but older kids will really want poles so if they have "earned" it by demonstrating good striding, they can add in poles. This is also a good time to review herring bone technique because it is used in classic skiing on hills that are too steep to stride up.

Modeling:

Session 1: Model classic skiing on foot across the gym being sure to emphasize your body weight moving completely from one foot to the other with the body in a forward position. Next model what happens when more power is applied by bounding or creating "air time" between

strides.

Session 2: Get out on skis for more practice time. Demonstrate a pass or two of skiing without poles and with poles so skiers can see the motions are the same.

Guided Practice:

Session 1: First have kids spread out and get into an athletic body position. Transfer weight onto one foot and swing the other leg back and forth from the hip. Add in the arms, swinging freely from the shoulder, opposite arm with opposite leg as in running. Next, add in the impulse. When the opposite arm swing forward and the unweighted leg is in extension, drop your body weight quickly onto your weighted foot. Switch feet. Next, try the whole sequence as described above. It will be hard to keep them from just running. One method to do this is to set up cones and have them see how few strides they can make between cones. Bounds need to be continuous however, so only jump as far as you can land, balance, and quickly move to the next stride. Just like running, we don't want to heel strike, so we want to be sure we are landing with the foot underneath us, and the ankle and knee joints soft. This will require them to put quite a bit of force into the leap or bound. This motion is much like many animals make. Relate it to moose or caribou that are often seen effortlessly bounding, that is what we are looking for. As they catch on, have them add the arm swing in if they aren't naturally doing that already. View the classic drills video to learn the full progression.

Session 2: Have kids take a pass or two without poles, swinging their arms as if they had poles. Those that are ready can then take a pass or two with poles. Next, work through different drills. First, keeping short strides, then move to short strides with a strong impulse creating more "air time", then moving into more of a bound, lengthening the stride length but keeping, the feet underneath the body and the ankles and knees soft.

Independent/Group Practice and Differentiation:

Session 1: Pick up skis, no poles, and head outside. Classic skiing is a fairly natural movement so kids will pick up the basics quickly, if they haven't already. Remind kids the importance of a good warm up. Give them 10 or so minutes of free ski to warm up and get comfortable on the skis, exploring the motion of their own.

For skiers that are struggling to shift weight between skis, have them take a ski off and do what we call the scooter drill, pushing with one leg and balancing on one ski. Then switch feet. You can do relay races or tag-type games using this drill as well.

More advanced skiers can work on going up steeper climbs, which requires more power and coordination to get the timing of the stride right. Skiers should always work on a downhill skill and uphill skill together. On the descent have the try to balance on one ski as long as possible.

Skiers can also work on stride length. Have them see how many strides they can get from one cone to the next and how few. Which is faster? Which is easier? Stand up tall when striding, sink down lower, which is easier? Faster? Have them try to stride with their hands behind their backs.

This requires more balance. Then have them exaggerate the arm swing, which will help momentum and weight transfer.

Session 2: All the above activities can be repeated with poles. If skiers are bored repeating activities, there are a number of games that can be used. Relay races are a good thing to turn to. Remember the goal is to keep skiers skiing so keep team sizes small and distances short. Also be aware of people who are uncomfortable or feel embarrassed. This always provides a good time to talk about teammates, supporting others, being positive, and the goal being to learn not to perform. For younger kids, divide them up into small groups and have them race each other holding hands with everyone in their group. They have to help each other up if someone falls down and they can only move at the speed everyone is comfortable with. Another variation is to have a Le Mons start, where skiers start with their skis off. This allows them to work on getting skis on and off. Berries on a plate is another variation where kids ski into the berry patch, pick a berry (ball) and put it on the plate (Frisbee) and return it to their teammate without dropping the berries. If the berries spill the team must start over.

Group Game:
Red light green light can be used regardless if skiers choose to use poles or not.
Duck, Duck, Goose is a good game as well, but is better is small groups so more people get to ski more frequently. This game can also be played on a hill, requiring skiers to herring bone and practice downhills. The goose chases the head bopper to the top of the hill instead of around the circle.
Tag games are always good options, however, should never to played with poles for safety reasons.
Caribou and Wolves (sharks and minnows) is also a good option

Indoor Option:
Most of this lesson can be done indoors with bounding. Spend more time working on bounding by challenging kids in the same way you would if they had skis on. How few bounds to get from one side to the other? How many? How high can you bound? How far? You can always pretend to have poles as well to work on timing and arm swing. Do relay races with bounding. It will always be tempting for kids just to run so make sure to emphasize the bound, maybe even placing cones far enough apart that kids can't just run to get to the next one. If someone on your team runs, the team must start over. Spend more time on the muscle groups and nutrition if stuck inside.

Wrap Up
What are the keys to striding? What makes you go faster? What did you notice about different muscles? Have you noticed feeling different depending on what or when you eat? Do you feel better when you eat a good breakfast and lunch? Why do you get hungry so quickly when skiing? Why does skiing burn so many calories? Record these thoughts. Have kids record their activity in their logs and write what they did to reach their daily goal or help them reach a weekly or longer term goal.

Standards

Grades K-2

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

1. Perform various forms of loco-motor movement such as walk, run, slide, gallop, jump, hop, leap, and skip.

6. Demonstrate balance on the ground and on objects, using bases of support other than both feet.

Standard C
Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

18. Move with effort, time, force, and flow.

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

6. Discuss the benefits of healthy food and beverage choices.

Standard E

Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large groups) without interfering or excluding others.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

4. Identify feelings resulting from challenges, successes, and failures in physical activity (i.e., happy, scared, angry, sad).

5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5

Standard B

Apply movement concepts to the learning and performance of physical activities

1. Select and practice a skill in which improvement is needed.
5. Use specific feedback to improve performance.

Standard C

Participate regularly in physical activity:

1. Consciously choose to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.

2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D

Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

6. Choose to participate in activities to increase muscular strength and endurance.

Standard F

Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

Grades 6-8

Standard C
Participate regularly in physical activity:

1. Recognize and understand the significance of physical activity in the maintenance of a healthy lifestyle.

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Lesson Plan 5
Content Area: P.E.- Cross Country Skiing

Classic Skiing: Double Pole

Time Estimate: 60 minutes

Summary: Kids will learn the basics of the double pole technique, used for flatter terrain on classic skis.

Goals/Objectives:
Athletes will be able to:

- double pole across a flat

+ double pole on gradual up or down

* transition from striding to double pole and back to striding without stopping

Assessment:
Look for athletes who can continue to double pole over a distance without stopping. Look for athletes who have active feet and joints while double poling. Look for athletes who get forward and have the weight on the ball of the feet when poling.

Equipment/Tools/Terrain:

Gym
Flat area
A very gradual hill

Get the Jitters Out:
Run two laps of the gym, do 10 double leg jumps going for distance, and take a seat

Instructional Input:
Show World Cup footage. What is double pole? When is it used?
Double pole technique is used on flat and gradual terrain.
The following description should be used to have a better understanding of double pole, but does

not need to be read word for word to students. Pick up some phrases or steps that will resonate with your students and use those during modeling or guided practice.

Start in an athletic body position with weight on the balls of the feet, knees and ankles bent, and hands slightly forward. Keeping a bend in the knees and ankles, rock up onto your toes, requiring your ankles to bend at a deeper angle, while bringing your hands up to face level with a slight bend in the elbow. When the hands come up, you should fall forward. Plant your poles in front of your feet then engage your core and load your body weight onto your poles, lowering your upper body and pushing your poles down and back. Your body weight will naturally shift back on your feet as your arms continue to follow through behind your body. Rock your weight back onto the front of your feet, pushing your hips up and forward as you stand up and bring your hands up again to repeat the motion. Your upper body only needs to compress until your stomach and thighs make about a 45-degree angle. The most common thing for beginners to do is to completely hinge at the hips, keeping their knees locked and dropping their upper body until it is parallel to the ground. This doesn't actually create more power and requires a lot more energy to come back up. It is better to focus on the initial engagement of the core and follow through of the arms.

Modeling:
Demonstrate how bringing your arms up causes you to fall forward when the weight is on the ball of your feet. Show what happens if your weight is back.

Guided Practice:
Have kids try this same thing in the gym. Stand in an athletic position and bring your hands up, falling forward. Have them add in a little hop when they bring their hands up keeping their feet together as they would with skis on.

Independent/Group Practice and Differentiation:
Athletes should then have 10 minutes to explore double poling on their own.

There are a number of activities that can be done to practice different double pole techniques. First challenge all skiers to double pole from one cone to another, count their pole plants. Challenge them to see how few pole plants they can get. Remind them to get their weight forward, hands and hips up, in order to glide further and use fewer pole strokes. Have them explore planting their poles in different places, closer to their feet, more toward the tip of the ski, further out or really close to the ski. Which is faster? Try lifting elbows out then elbows in, straight arms, really bent arms. Counting pole plants give the kids and easy way to measure the efficiency of whatever they are trying. Another way to do it is to give each kid ten double poles to see how far they can go, this will also give the kids a way to measure.

For older or stronger kids, use a scarf or something to put around the waist of the front skier, the dog, and the back skier, the musher, holds the two ends. The front skier then double poles, pulling the back skier. Switch positions.

More advanced skiers can try double poling uphill. This requires the skier to shorten the poling

phase as there is less glide.

Sprints are good double activities as well. You can teach the lunge. When your toe crosses the line is when the time stops in a race so in a close race, it is the person that extends their toe the furthest. It requires getting into a lunge position and throwing one foot as forward as possible. Kids love double poling fast and throwing a lunge.

For those that are ready set up a course in which you start striding, switch to double pole at a cone and switch back to striding at another cone.

Group Game:
Caribou and Wolves is a good game. The caribou are required to double pole, but the wolves can stride because they won't have poles. Any sort of tag game can be played, but the taggers need to get rid of their poles and stride for safety.

Indoor Option
The instructional section can remain the same. Extend the activities using different jumping activities. The two-footed jump for distance is a good one to teach kids to get their hips forward using the arm swing. Jumping for height is good for working on specific muscle groups need in double pole and learning to generate power. With older kids, you can use medicine balls and have kids throw the ball at the ground. The motion should be a full double pole, but the ball is used in place of ski poles so when you would plant your poles, you throw the ball at the floor. This teaches power application in the beginning phase of the double pole and works on core strength.

Have relay races or stations set up using these different activities and adding ones in from previous lessons.

Wrap Up
When do you stride? When do you double pole? What makes double pole faster or easier? Have students write any accomplishments, observations, or steps towards their goals in their notebooks and record their activity for the day or write their names on the appropriate charts.

Standards

Grades K-2

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

1. Perform various forms of loco-motor movement such as walk, run, slide, gallop, jump, hop, leap, and skip.

2. Perform a variety of non-loco-motor skills such as balancing, bending, stretching, rocking, curling, twisting, turning, pushing, pulling, swinging, swaying

5. Jump and land in various combinations.

6. Demonstrate balance on the ground and on objects, using bases of support other than both feet.

18. Move with effort, time, force, and flow.

Standard C
Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large groups) without interfering or excluding others.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

4. Identify feelings resulting from challenges, successes, and failures in physical activity (i.e., happy, scared, angry, sad).

5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5

Standard B
Apply movement concepts to the learning and performance of physical activities

5. Use specific feedback to improve performance.

Standard C
Participate regularly in physical activity:

2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D

Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

6. Choose to participate in activities to increase muscular strength and endurance.

Standard F

Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

Grades 6-8

Standard C

Participate regularly in physical activity:

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Grades 9-12

Standard B

Apply movement concepts to the learning and performance of physical activities:

2. Use a variety of complex movement patterns, independently and routinely, to improve skills.

3. Acquire new skills while continuing to refine existing ones.

Lesson Plan 6

Content Area: P.E.- Cross Country Skiing

Kick Double Pole and Pulling it together

Time Estimate: 60 minutes

Summary: Kids will learn the last technique involved with classic skiing, the kick double pole. After kids have mastered the different techniques, they will work on pulling all of them together in order to be able to classic ski over all types of terrain.

Goals/Objectives:
Athletes will be able to:

- kick double pole across flats and gradual uphills

+ Transition from double pole to kick double pole to striding without pausing

* pick the proper technique to use given the conditions and terrain

Assessment:
Check for the timing of the kick double pole, often the trickiest part. Look for weight shift from ski to ski and also from the ball of the foot to the whole foot and back to the ball.

Equipment/Tools/Terrain:
Gym
Hill- gradual

Get the Jitters Out:
Run two laps of the gym, do 10 long jumps and 10 single leg jumps for distance, and take a seat

Instructional Input:
Show World Cup footage- show kick double pole and then a section where striding, double pole, and kick double pole are used. Have kids call out the technique as the skier switches. Ask kids, when does the skier use each technique? When do they use kick double pole?
Kick double pole is a transition gear. Striding is the gear used for climbing, double pole is used for flats and kick double pole is used when double pole is too high of a gear (too hard to get up the hill) and striding is too low of a gear (spending a lot of energy for not a lot of distance), generally on gradual uphills. To kick double pole, the motion begins the same as the double pole. Start in an athletic stance with knees and ankles slightly bent, weight on the balls of the feet, arms relaxed and slightly forward. Bring arms up while your weight rolls forward on your feet. Initiate a double pole. Plant your poles, drop your weight through the poles, engaging your core, and pushing your poles down and back while crunching your core, lowering your upper body. The “kick phase” starts when you reach the end of the double pole phase and your poles are behind you. While your arms are returning and your hips are coming back up bringing your weight onto the balls of your feet, you are going to simultaneously “kick” as done in striding.

Shift your weight onto one ski, dropping your body weight in order to create traction on that ski. Bring your hands up at the same time the unweighted ski swings back. At this point your body should be open with all the weight forward and on just one ski. When you plant your poles as if you are going to double pole, the unweighted leg should "kick" or drive forward, propelling you a little further than you would if you were just double poling. Complete the double pole phase, but next time you will shift your weight onto the opposite leg, alternating legs that "kick."

This is another lesson where review ideas of teamwork and sportsmanship may come in handy. Remind students how to effectively help one another, encourage each other, and to keep their frustrations in check.

Modeling:
Demonstrate this motion in the gym, allowing a hop forward when your weight comes up to emphasize that motion.

Guided Practice:
Have skiers practice in the gym first, mimicking kick double pole just as you did across the floor. Then grab skis and move outside.

Independent/Group Practice and Differentiation:
Athletes should then have 10 minutes to try things out on their own and get warmed up.

Start with straight double pole for a bit, then move to the scooter drill (only one ski on and using the foot to push) to get the "kick" phase and get comfortable with the balance and weight shift. Then while still doing the scooter have them add in the double pole phase, double poling while balancing on their one ski. Switch feet. This will help with the timing before adding both skis.

This technique, in particular, is probably easiest learned just by mimicking and following so demonstrate as much as possible and even have kids follow you around for a bit or follow the kids that are doing it right. Play leap frog where one kid leads for a bit and then the person in the back of the line sprints to the front and leads for a bit, this continues until everyone has led.

Once kids are getting the timing down, have them try it over different grades. Pick a gradual uphill, have kids try to double pole it and then kick double pole to show how switching to a different gear makes it easier to get up the hill. Do the same on the gradual down to show how double pole is more efficient there.

Once kids have the hang of all three techniques, pick a section where all three are needed or set up cones marking where they should switch. Turn this into a relay if kids need more excitement. Add in a steep section to herring bone too and include the downhill, forcing kids to stop before tagging the next person.

Group Game:
Set up a treasure hunt. Each clue dictates that a certain technique must be used until the next clue is found. Teams must stick together and cannot move on until everyone has reached the clue forcing kids to help each other. Kids spotted using the wrong technique must start over. Have

treats as the treasure.

Indoor Option

Keep the instructional section the same. Use single leg jumps and double leg jumps, both for height and distance to create some sort of an obstacle course or relay race. Play some sort of a tag game to continue working on the endurance aspect if you have been indoors for a number of days and have done all the indoor activities from the classic skiing lessons.

Wrap Up

Quiz kids on the different techniques by demonstrating and having them call out or naming a technique and having them show you. Give time to write in their notebooks about any goals they have accomplished as well as recording their activity for the day or writing their names on the appropriate charts.

Standards

Grades K-2

Standard A

Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

1. Perform various forms of loco-motor movement such as walk, run, slide, gallop, jump, hop, leap, and skip.

Standard C

Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

Standard E

Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large groups) without interfering or excluding others.

4. Identify reasons for rules and procedures during physical activities (e.g., safety, equipment, directions).

5. Demonstrate respect for self and others during physical activities (e.g., taking turns,

appropriate etiquette, cooperation).

6. Accommodate individual differences. (e.g., ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

7. Describe appropriate reactions to threatening and/or emergency situations common to physical activity settings (e.g., bear or moose on playground).

8. Understand the importance of dressing appropriately for outdoor physical activity (e.g., layering clothing during winter, sunglasses, sunscreen).

9. Select appropriate safety equipment for specific physical activities (e.g., bike helmet, personal floating device).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Celebrate personal successes and achievements as well as those of others.

2. Exhibit verbal and non-verbal indicators of enjoyment (e.g., cheering, smiling, giving high five)

3. Name physical activities that are enjoyable.

4. Identify feelings resulting from challenges, successes, and failures in physical activity (i.e., happy, scared, angry, sad).

5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5

Standard B
Apply movement concepts to the learning and performance of physical activities

1. Select and practice a skill in which improvement is needed.
5. Use specific feedback to improve performance.

Standard C
Participate regularly in physical activity:

1. Consciously choose to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.

2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

5. Recognize that physiological responses to exercise are associated with their own levels of fitness.

6. Choose to participate in activities to increase muscular strength and endurance.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate awareness and participate safely when involved in activity.

2. Form groups quickly when asked.

3. Recognize importance of individual responsibility in a group effort.

4. Encourage others by using verbal and nonverbal communication.

5. Accommodate individual differences. (e.g. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

6. Work productively with assigned or random groups without adult intervention.

7. Contribute ideas and listen to the ideas of others in cooperative problem-solving physical activities.

8. Act in a safe and healthy manner when confronted with conflict during physical activity.

9. Analyze possible solutions to a movement problem in a cooperative physical activity and come to a consensus on the best solution.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

2. Choose motivators (e.g., music, friends) that will enhance fun and enjoyment in a physical activity setting.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

4. Participate with others in a variety of competitive and non-competitive physical activities.

Grades 6-8

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities

5. Demonstrate competency for participation in adventure/outdoor activities (e.g., orienteering, snowshoeing, skating).

Standard C
Participate regularly in physical activity:

1. Recognize and understand the significance of physical activity in the maintenance of a healthy lifestyle.

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate appropriate behavior in physical activity settings.

2. Demonstrate concern for safety of self and others during games and activities.

3. Demonstrate self-control and sportsmanship/etiquette during games and activities (e.g., accepting controversial decisions).

Grades 9-12

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

5. Demonstrate competent skills while participating in adventure/outdoor activities (e.g., Alaskan cultural physical activities, hunting, fishing, skiing, biking, hiking, wilderness survival, camping).

Standard B
Apply movement concepts to the learning and performance of physical activities:
2. Use a variety of complex movement patterns, independently and routinely, to improve skills.

3. Acquire new skills while continuing to refine existing ones.

4. Identify basic biomechanical principles as they pertain to movements within a physical activity.

5. Recognize various levels of performance (novice, competent and proficient).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate leadership by holding self and others responsible for following safe practices, rules, procedures, and etiquette in all physical activity settings.

2. Demonstrate an understanding of responsible personal and social behaviors in physical activity settings.

3. Accommodate individual differences. (e.g., ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

4. Exhibit sportsmanship/etiquette in all physical activity settings.

Standard F:
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Enjoy the challenge of working hard and the satisfaction of improving skills.

2. Seek personally challenging experiences in physical activity opportunities.

3. Recognize physical activity as a positive opportunity for social and group interaction.

4. Analyze selected physical activity experiences for social, emotional, and health benefits

Lesson Plan 7
Content Area: P.E.- Cross Country Skiing

Skate basics-no poles

Time Estimate: 60 minutes

Summary: Kids will learn the basic motions of skate technique without poles, focusing on weight shift and leg movement.

Goals/Objectives:
Athletes will be able to:

- shift weight from ski to ski to create forward movement
- move with an athletic body position
- skate without poles across the flats

+ skate without poles on undulating terrain

* change directions while skating

Assessment:
Check for weight shift from ski to ski. Look for forward body positions. Look for skiers that can keep their momentum up and continue to skate over a long distance. This shows weight shift and good body position as well as coordination and body awareness.

Equipment/Tools/Terrain:
Gym
Flat packed out area

Get the Jitters Out:
Run two laps of the gym, do 10 hops side to side over a line, and take a seat

Instructional Input:
Show World Cup footage- show a short clip of skating and a clip of skating without poles. What do the kids notice? How does a skier move forward on skate skis? Remind kids that skate skis are completely smooth on the bottom. There is nothing there to keep the ski from moving forward and back.

As with all the techniques, start in an athletic body position with weight on the balls of the feet, knees and ankles slightly bent and arms slightly forward. Toes are turned out at a slight angle. When the hips are pushed forward and all the body weight moves forward, it feels as if you are

going to fall. Instead of falling shift weight over to one foot, drop the weight through that leg, much like striding, and push off that leg, moving forward and laterally onto the other leg. Repeat this motion, moving back and forth between legs, while also moving forward. Arms can do whatever is comfortable. Hold them behind your back, swing them side to side as you bound from one leg to the next or just let them hang. Here is a little jingle to teach kids as well: Weight shift, weight shift, that's the key, weight shift, weight shift, that's for me!

Modeling:
Model this motion in the gym.

Guided Practice:
Place cones or dots on the gym floor, preferably on either side of an existing line and offset. Have kids practice the skating motion, hopping from dot to dot as you demonstrated above. The dots will help the kids remember to not only push laterally but also forward as our ultimate goal is to move down the track.

Independent/Group Practice and Differentiation:
Athletes should then have 10 minutes to explore moving on skate skis on their own. Next, have kids line up side to side. Get into an athletic stance with skis in a V position. Have kids push their hips or belly buttons forward, bending more at the ankles and move their weight more over the balls of the feet. They should start sliding forward, skis moving out. When the skis move too wide, they will have to catch themselves. Repeat this many times. This shows skiers how they can glide forward just by moving their weight forward.

Next, have skiers work on weight shift. This requires good balance! With skis in a V, skiers will shift their weight onto one ski and push off rolling their foot in and moving onto the inside edge of the ski for the final push, lastly rolling off the toes just as if they were jumping to the next dot in the gym. Weight then moves onto the other ski, where glide is taken advantage of. Nose, knee, and toes should be lined up in this position with no weight on the other ski. When the glide starts to decrease, drop weight onto that ski and push off, moving back to the other ski. It is very similar motion to ice skating or roller blading.
Have kids skate from one cone to another working on continuous skate motions. Once they get this, challenge them to see how few of skate pushes they can use to get from one side to the other. Remind them to keep their weight forward and use their balance to glide as far as possible. Does is help to push harder? Try standing up taller, getting lower. Try having skis in a wider V or a narrower V. Try dropping more weight onto each ski before pushing off. Try swinging arms side to side.

Another drill is to have skiers hold a ball out in front of them, move the ball over each ski as you shift weight. This will help keep your weight forward and shift your weight.

More advanced skiers can try skating uphill without poles. This requires more power and quicker weight shift from side to side.

Skiers can also try skating around poles having to switch directions. This requires pushing more off the outside leg and just stepping with the inside leg in order to turn around something. Set up

a slalom course on the flats for this.

Group Game:

Tag games are ideal for no-pole skating. Sometimes skis get in the way so one good tag game is foxtail tag. Have scarves or flags or something tucked into the pants of everyone like a tail. The predators ski around and try to grab the tails of the foxes. Those who lose their tails become predators.

Ski soccer is another good one for older kids. It is the same as regular soccer but with skis. This game can lead to broken equipment…

Speedball is like ultimate Frisbee with a ball. Skiers toss the ball to teammates trying to get the ball across the goal line. If you are holding the ball you cannot ski with it, you must pass it or dribble it, by tossing it up and down in your hand while moving.

Indoor Option

Complete the instructional section and have kids practice different skate motions in the gym. Set up a relay that involves skate jumps, running, and changing directions. Balance drills are also good. Use the lines painted in gyms to establish different balancing challenges like jumping on one foot or standing on one foot and doing squats, but keeping your weight forward. If available, you can use thinks like a balance beam (or just use a piece of wood), balance boards, dyna discs, or bosu balls. If you have access to boxes, jumping on boxes is a good activity to develop power.

Wrap Up

What are the keys to skating? Give time for students to write in their notebooks, record their activity, or put their name on a chart.

Standards

Grades K-2

Standard A

Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

1. Perform various forms of loco-motor movement such as walk, run, slide, gallop, jump, hop, leap, and skip.

2. Perform a variety of non-loco-motor skills such as balancing, bending, stretching, rocking, curling, twisting, turning, pushing, pulling, swinging, swaying

5. Jump and land in various combinations.

6. Demonstrate balance on the ground and on objects, using bases of support other than both feet.

18. Move with effort, time, force, and flow.

19. Move in a variety of pathways (e.g. straight, curve, zig-zag).

Standard C
Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large groups) without interfering or excluding others.

4. Identify reasons for rules and procedures during physical activities (e.g., safety, equipment, directions).

5. Demonstrate respect for self and others during physical activities (e.g., taking turns, appropriate etiquette, cooperation).

6. Accommodate individual differences. (e.g., ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Celebrate personal successes and achievements as well as those of others.

2. Exhibit verbal and non-verbal indicators of enjoyment (e.g., cheering, smiling, giving high five)

3. Name physical activities that are enjoyable.

4. Identify feelings resulting from challenges, successes, and failures in physical activity (i.e., happy, scared, angry, sad).

5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5

Standard B
Apply movement concepts to the learning and performance of physical activities

1. Select and practice a skill in which improvement is needed.
5. Use specific feedback to improve performance.

Standard C
Participate regularly in physical activity:

1. Consciously choose to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.

2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

5. Recognize that physiological responses to exercise are associated with their own levels of fitness.

6. Choose to participate in activities to increase muscular strength and endurance.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate awareness and participate safely when involved in activity.

2. Form groups quickly when asked.

3. Recognize importance of individual responsibility in a group effort.

4. Encourage others by using verbal and nonverbal communication.

5. Accommodate individual differences. (e.g. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

6. Work productively with assigned or random groups without adult intervention.

7. Contribute ideas and listen to the ideas of others in cooperative problem-solving physical activities.

8. Act in a safe and healthy manner when confronted with conflict during physical activity.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

2. Choose motivators (e.g., music, friends) that will enhance fun and enjoyment in a physical activity setting.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

4. Participate with others in a variety of competitive and non-competitive physical activities.

Grades 6-8
Standard C
Participate regularly in physical activity:

1. Recognize and understand the significance of physical activity in the maintenance of a healthy lifestyle.

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate appropriate behavior in physical activity settings.

2. Demonstrate concern for safety of self and others during games and activities.

3. Demonstrate self-control and sportsmanship/etiquette during games and activities (e.g.,

accepting controversial decisions).

Grades 9-12

Standard B
Apply movement concepts to the learning and performance of physical activities:
2. Use a variety of complex movement patterns, independently and routinely, to improve skills.

3. Acquire new skills while continuing to refine existing ones.

4. Identify basic biomechanical principles as they pertain to movements within a physical activity.

5. Recognize various levels of performance (novice, competent and proficient).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate leadership by holding self and others responsible for following safe practices, rules, procedures, and etiquette in all physical activity settings.

2. Demonstrate an understanding of responsible personal and social behaviors in physical activity settings.

Lesson Plan 8
Content Area: P.E.- Cross Country Skiing

Skating: V1
Time Estimate: 60- 90 minutes

Summary: Kids will learn the V1 technique, the lowest gear in skating, used for climbing.

Goals/Objectives:
Athletes will be able to:
- Shift weight from ski to ski
- Develop balance on a ski to increase glide
- Maintain athletic body position with poles
- V1 on gradual terrain

+ V1 on steep terrain

* V1 with various tempos

Assessment:
The different skate techniques all have similar leg patterns, shifting weight from ski to ski. The arms and timing of the arms with the legs are what differentiates skate techniques. Always look for good weight shift. Look for the timing of the arms, two arms with one ski hitting the snow at the same time.

Equipment/Tools/Terrain:

Gym
Flat packed out area
Gradual hill moving into a steep hill

Get the Jitters Out:
Run two laps of the gym, do 10 skate jumps and take a seat

Instructional Input:
Show World Cup footage- Show all three skating techniques, pointing out V1, V2, and V2 alternate. Repeat V1 footage, pointing out the timing, 2 poles and one ski hit the snow at the same time.

With all weight on one leg, push off in a skating motion while also bringing arms up in front of the face. Land on the other leg and pretend to plant your poles with your hands all at the same time. There should be three points of contact, 2 poles and 1 ski. Just as in double pole, plant the poles and drop your body weight through the poles and the leg you are standing on. As the poles move back and your weight should begin to shift towards the other ski, initiating a bound on to that ski while releasing the poles. Remaining in a pretty low position with all your weight on the "off-leg" take advantage of some glide. As you come up bring your poles up and hips forward, shifting weight back onto the other ski with another bound. Repeat.

Modeling:
Model this motion across the gym, focusing on the weight shift and timing of the pole plant.

Guided Practice:
Have kids try this in the gym as well simply pretending to hold poles. You can place dots or cones as well to get them to move in a forward direction at the same time. Either the left or right side can be the side in which the poles plant on. Have kids try both sides.

Independent/Group Practice and Differentiation:
Athletes should then have 10 minutes to warm up and free ski without poles. They can pretend to have poles just like in the gym.

While pretending to hold poles have skiers try the V1 up a very gradual hill. Have kids try V1 to the left and V1 to the right. One will likely feel more comfortable, but it's always good to challenge skiers to do both. Skiers that have the timing of their arm swing right can grab poles.

Move advanced skiers to a steeper hill. The steeper the hill, the more forward the weight needs to come. Think of pushing your belly button into the hill. The weight transfer from ski to ski will be

quicker as the skis glide less moving uphill. The V of the skis will also have to get wider and more time will be spent on the inside edge of the ski in order to no slide backwards. Set up a jump or a slalom course for the way back down.

Have a relay race if things are going really well and kids are getting it. Go up and down a gradual hill using V1 going up and free skate (not using poles, like a hockey player) on the way down.

Skiers will often get frustrated with the poling so never hesitate to have skiers drop poles and move back to no poling, especially with younger skiers. Most games are best without poles so moving to a game for a change of pace or to reduce frustration is always a good idea.

Group Game:
It's a good idea to keep skating fun so any type of tag game is a good one to just go back to the basics and not think too much about the movements. Another good tag game is blob tag. Have two skiers hold hands and try to tag the others. They have to remain holding hands at all times. Anyone who gets tagged joins the blob, holding hands with someone on the end until everyone has been tagged.

Duck, duck, goose, is a more relaxed game to practice skating.

Capture the flag is a good game, but harder game to make sure everyone is moving and skiing, the most important part of any game.

Wrap Up
What is the timing of V1? When do you use V1? Give time to record progress towards goals, activity, or any ideas in notebooks.

Standards

Grades K-2
Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

1. Perform various forms of loco-motor movement such as walk, run, slide, gallop, jump, hop, leap, and skip.

2. Perform a variety of non-loco-motor skills such as balancing, bending, stretching, rocking, curling, twisting, turning, pushing, pulling, swinging, swaying
5. Jump and land in various combinations.

6. Demonstrate balance on the ground and on objects, using bases of support other than both feet.

18. Move with effort, time, force, and flow.

19. Move in a variety of pathways (e.g. straight, curve, zig-zag).

Standard C
Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large groups) without interfering or excluding others.

4. Identify reasons for rules and procedures during physical activities (e.g., safety, equipment, directions).

5. Demonstrate respect for self and others during physical activities (e.g., taking turns, appropriate etiquette, cooperation).

6. Accommodate individual differences. (e.g., ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Celebrate personal successes and achievements as well as those of others.

2. Exhibit verbal and non-verbal indicators of enjoyment (e.g., cheering, smiling, giving high five)

3. Name physical activities that are enjoyable.

4. Identify feelings resulting from challenges, successes, and failures in physical activity (i.e., happy, scared, angry, sad).

5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5

Standard B
Apply movement concepts to the learning and performance of physical activities

1. Select and practice a skill in which improvement is needed.
5. Use specific feedback to improve performance.

Standard C
Participate regularly in physical activity:

1. Consciously choose to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.

2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

5. Recognize that physiological responses to exercise are associated with their own levels of fitness.

6. Choose to participate in activities to increase muscular strength and endurance.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate awareness and participate safely when involved in activity.

2. Form groups quickly when asked.

3. Recognize importance of individual responsibility in a group effort.

4. Encourage others by using verbal and nonverbal communication.

5. Accommodate individual differences. (e.g. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

6. Work productively with assigned or random groups without adult intervention.

7. Contribute ideas and listen to the ideas of others in cooperative problem-solving physical activities.

8. Act in a safe and healthy manner when confronted with conflict during physical activity.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

2. Choose motivators (e.g., music, friends) that will enhance fun and enjoyment in a physical activity setting.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

4. Participate with others in a variety of competitive and non-competitive physical activities.

Grades 6-8
Standard C
Participate regularly in physical activity:

1. Recognize and understand the significance of physical activity in the maintenance of a healthy lifestyle.

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate appropriate behavior in physical activity settings.

2. Demonstrate concern for safety of self and others during games and activities.

3. Demonstrate self-control and sportsmanship/etiquette during games and activities (e.g.,

accepting controversial decisions).

Grades 9-12

Standard B
Apply movement concepts to the learning and performance of physical activities:
2. Use a variety of complex movement patterns, independently and routinely, to improve skills.

3. Acquire new skills while continuing to refine existing ones.

4. Identify basic biomechanical principles as they pertain to movements within a physical activity.

5. Recognize various levels of performance (novice, competent and proficient).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate leadership by holding self and others responsible for following safe practices, rules, procedures, and etiquette in all physical activity settings.

2. Demonstrate an understanding of responsible personal and social behaviors in physical activity settings.

Lesson Plan 9
Content Area: P.E.- Cross Country Skiing

Skating: V2

Time Estimate: 60 -90 minutes

Summary: Kids will learn V2, the skating technique used on flatter terrain, the high gear for skate technique

Goals/Objectives:
Athletes will be able to:
- shift weight from ski to ski
- balance on one ski to allow glide before shifting weight
- V2 for a few pole plants in a row

+ V2 for an extended distance

* V2 on undulating terrain
* switch between V2 and V1

Assessment:
Check for the timing of the pole plants: poles plant with each leg. Check for balance on skis and weight shift from ski to ski

Equipment/Tools/Terrain:

Gym
Flat packed out area
Gradual hill

Get the Jitters Out:
Run two laps of the gym, do 10 skate jumps and 10 more pretending to V1 with arms, and take a seat

Instructional Input:
Show World Cup footage- Show V1, V2 and V2 alt. Review the keys to V1. Planting both poles and one ski at the same time, shifting weight, working uphill. Then observe V2 again. What is the difference? What terrain are they using V2?

V2 requires really good balance. It is essentially a combination of skating with the legs and double pole with the arms. First just start hopping back and forth in the skate motion with weight on the balls of your feet, knees and ankles soft, shifting weight from one leg to other with each hop. Next, add in the arms. With weight all on one leg, bring your arms up in front of your face. Pretend to plant your poles and just as with double pole, engage your core and drop your weight through the poles and your leg. Compress and then release, hopping onto the other leg. Then, start over bringing your hands up.

Modeling:
Model skating in the gym without poles and then add in pretend poles as if you are doing V2.

Guided Practice:
Have kids do the same thing in the gym. Start by having them just skate hop side to side then add in the pretend poles. This will likely take some time to get everything figured out so continue to go from no poling motion to V2 poling motion over and over again. If kids do figure it out quickly, review V1 as well. Have them start with no poling, switch to V1, and then to V2 and back and forth. The next step would be to describe a terrain and have the kids switch to the proper technique. You can do an entire pretend race this way, having kids to continue the skate hop the whole time unless they are tucking downhill.

Independent/Group Practice and Differentiation:
Athletes should then have 10 minutes to ski without poles to warm up. They can pretend they have poles if they want.

Have kids line up do the first skate drill again. With skis in a V, push hips forward until skis start to slide. Do this a few times just to remember how important it is to keep weight forward. Next, have kids ski without poles trying to glide as long as possible on each ski because balance is key

in the V2 technique. Then, have them swing their arms as if they had poles still trying to balance and glide on each ski. Using gradual terrain can be helpful. Gradual downs let kids focus on the balance without worrying about pushing hard to get over their skis and gradual ups make balancing a little less scary because less time is being spent completely on one ski. Different kids will respond to the terrains differently so keep trying different ways.

If kids grasp this, have them grab their poles and explore V2. Try standing up really tall between poles, try getting really low. Try poling with your arms almost straight and your arms really bent, close to your face. Try with your arms out wide and in narrow. Try with your skis wider and narrower. Try with really bent ankles and knees and really straight legs. Have them try to see how few of poles they can do between cones.

One drill for more advanced skiers is the V4 drill. With this drill each time the skier shifts their weight onto one ski, they should try to get in two poles (basically 2 double poles on one leg) before shifting their weight onto the other ski. This will help them work on their balance.

If skiers become competent in the V2, have them work on switching from V1 to V2 and back. Use the appropriate terrain, using V1 on uphills and V2 on flats or graduals. Start with cones to indicate when to switch, then challenge skiers in another area to use their own judgment to decide which technique is best.

Working on changing directions can also challenge skiers. Set up two poles and have them ski in figure eights, forcing them to V2 in between and switching directions frequently. You can also make it a tag game with two people going through the figure 8 at the same time with one trying to catch the other.

Group Game:
Relay races are great for V2 because it is a higher speed gear. Set up single poles. Have kids sprint to the pole, turn around it twice and then sprint back to tag the next person.

Tag games are always good. Try one where there is a rabbit (an advanced skier) with a tail tucked into his pants. Give him a head start and then let the foxes chase the rabbit down trying to pull the tail out of the rabbit.

A scavenger hunt is another good activity to get kids to use different skate techniques as they cruise around.

Wrap Up
When do you use V2? What are the keys to V2? Give time for students to record progress and activity.

Standards

Grades K-2
Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical

activities:

1. Perform various forms of loco-motor movement such as walk, run, slide, gallop, jump, hop, leap, and skip.

2. Perform a variety of non-loco-motor skills such as balancing, bending, stretching, rocking, curling, twisting, turning, pushing, pulling, swinging, swaying
5. Jump and land in various combinations.

6. Demonstrate balance on the ground and on objects, using bases of support other than both feet.

18. Move with effort, time, force, and flow.

19. Move in a variety of pathways (e.g. straight, curve, zig-zag).

Standard C
Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large groups) without interfering or excluding others.

4. Identify reasons for rules and procedures during physical activities (e.g., safety, equipment, directions).

5. Demonstrate respect for self and others during physical activities (e.g., taking turns, appropriate etiquette, cooperation).

6. Accommodate individual differences. (e.g,. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Celebrate personal successes and achievements as well as those of others.

2. Exhibit verbal and non-verbal indicators of enjoyment (e.g., cheering, smiling, giving high five)

3. Name physical activities that are enjoyable.

4. Identify feelings resulting from challenges, successes, and failures in physical activity (i.e., happy, scared, angry, sad).

5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5

Standard B
Apply movement concepts to the learning and performance of physical activities

1. Select and practice a skill in which improvement is needed.
5. Use specific feedback to improve performance.

Standard C
Participate regularly in physical activity:

1. Consciously choose to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.

2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

5. Recognize that physiological responses to exercise are associated with their own levels of fitness.

6. Choose to participate in activities to increase muscular strength and endurance.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate awareness and participate safely when involved in activity.

2. Form groups quickly when asked.

3. Recognize importance of individual responsibility in a group effort.

4. Encourage others by using verbal and nonverbal communication.

5. Accommodate individual differences. (e.g. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

6. Work productively with assigned or random groups without adult intervention.

7. Contribute ideas and listen to the ideas of others in cooperative problem-solving physical activities.

8. Act in a safe and healthy manner when confronted with conflict during physical activity.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

2. Choose motivators (e.g., music, friends) that will enhance fun and enjoyment in a physical activity setting.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

4. Participate with others in a variety of competitive and non-competitive physical activities.

Grades 6-8
Standard C
Participate regularly in physical activity:

1. Recognize and understand the significance of physical activity in the maintenance of a

healthy lifestyle.

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate appropriate behavior in physical activity settings.

2. Demonstrate concern for safety of self and others during games and activities.

3. Demonstrate self-control and sportsmanship/etiquette during games and activities (e.g., accepting controversial decisions).

Grades 9-12

Standard B
Apply movement concepts to the learning and performance of physical activities:
2. Use a variety of complex movement patterns, independently and routinely, to improve skills.

3. Acquire new skills while continuing to refine existing ones.

4. Identify basic biomechanical principles as they pertain to movements within a physical activity.

5. Recognize various levels of performance (novice, competent and proficient).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate leadership by holding self and others responsible for following safe practices, rules, procedures, and etiquette in all physical activity settings.

2. Demonstrate an understanding of responsible personal and social behaviors in physical activity settings.

Lesson Plan 10
Content Area: P.E.- Cross Country Skiing

Skate- V2 Alternate

Time Estimate: 60-90 minutes

Summary: Kids will learn the last major technique used in skating: V2 alternate, used most effectively on gradual downhill terrain.

Goals/Objectives:
Athletes will be able to:

- further develop equal leg pushes and weight transfer from ski to ski
- use V2 alternate on a gradual downhill for a few consecutive strides

+ use V2 alternate over an extended period of time

* use V2 alternate at high speeds
* transition from V2 to V2 alternate and vice versa
* transition between all 3 skate styles: V1, V2, and V2 alternate

Assessment:
Most important is that the athletes are using their legs equally, developing a good push off each leg to propel themselves forward. This means weight forward and weight shifting from ski to ski. Next check for timing of the poles: skate push, pole, skate push.

Equipment/Tools/Terrain:
Gym
Flat packed out area
Gradual terrain
cones

Get the Jitters Out:
Run two laps of the gym, do 10 skate hops with V1 arms and 10 with V2 arms, and take a seat

Instructional Input
Show World Cup footage- Show skating, all three styles. Review V1 and V2 quickly, emphasizing the elements that are the same. Leg work should be essentially the same in all skating techniques. Show V2 alternate footage again. What's different? What terrain is this used on?

Start with the basic skate motion. Weight is on the balls of the feet, ankles and knees slightly bent, arms slightly forward and relaxed. Transfer weight from leg to leg using a small compression to develop power. Start with weight on one leg. Now, as you begin shifting your weight to the other leg, swing your arms up in front of your face at the same time. Use the momentum of the arm swing to help bring the hips forward and get off that leg with a little more "pop." With weight far forward and the body in a fairly upright position on one ski, plant your poles, engage your core, and drop your weight into your poles and leg. With that compression, push off your leg, transfer your weight back to the other ski and let your arms follow through. Take advantage of any glide you can before bringing your hands, hips, and upper body back up while pushing off that leg.

Modeling:
Model the above in the gym pretending to have poles.

Guided Practice:
Have students do the same motions in the gym, starting with a basic skate motion and adding the arms. Keep V2 alternate video footage going to help those that are visual learners.

Independent/Group Practice and Differentiation:
Athletes should then have 10 minutes to warm up without poles, practicing good skate motions. Next, set up sections in which skiers can ski back and forth without poles, practicing things like seeing how few of skate pushes they can take to get from side to side. Next have them pretend to have poles, swinging their arms in the V2 alternate motion. Much like the name sounds, V2 alternate is very similar to V2, except you only pole every other push instead of every push. Just as in V2, the poling motion is essentially a double pole on one ski. As with all the skating techniques, developing balance, getting comfortable with weight transfer, and learning the body position that lets your skis glide the most is key so skating without poles is always a good route, especially with the younger kids.

If kids do pick up on the poling motion have them grab poles. Remember, swinging your arms up provides momentum to get more power out of the push. Bring your hips up with your arms. Just as with other skate techniques, have kids try to see how few of skate pushes or poles they can take from one cone to the next. Try swinging your arms faster, slower, bringing them higher, straight out, or close to your body. Try compressing a lot during the poling phase or compressing a little. Work on pushing equally with both legs. Try poling on both the right and the left sides.

More advanced skiers can work on moving at higher speed since that is ultimately what V2 alternate is for. Have them do relay races, circling around a pole once or twice before returning to tag the next person.

Group Game:
Again, all versions of tag are great. Another version is freeze tag, where the person who is tagged has to stand with their legs apart and someone has to ski under their legs to free them. Caribou and Wolves, Chase the rabbit, fox tails, are all great choices.

If everyone can use poles successfully, add in some form of a relay or scavenger hunt. One version is to tie balloons along a course and have the kids work in teams to get all the balloons of a certain color, popping them with their poles as if they are hunting an animal and bring back the hide (popped balloon).

Wrap Up
What is the difference between V1, V2, and V2 alternate? When do you use V2 alternate? Which technique do you use climbing steep hills? Across flats? Give time to record progress, goals, and activity.

Standards

Grades K-2

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

1. Perform various forms of loco-motor movement such as walk, run, slide, gallop, jump, hop, leap, and skip.

2. Perform a variety of non-loco-motor skills such as balancing, bending, stretching, rocking, curling, twisting, turning, pushing, pulling, swinging, swaying
5. Jump and land in various combinations.

6. Demonstrate balance on the ground and on objects, using bases of support other than both feet.

18. Move with effort, time, force, and flow.

19. Move in a variety of pathways (e.g. straight, curve, zig-zag).

Standard C
Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large groups) without interfering or excluding others.

4. Identify reasons for rules and procedures during physical activities (e.g., safety, equipment, directions).

5. Demonstrate respect for self and others during physical activities (e.g., taking turns, appropriate etiquette, cooperation).

6. Accommodate individual differences. (e.g,. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social

interaction:

1. Celebrate personal successes and achievements as well as those of others.

2. Exhibit verbal and non-verbal indicators of enjoyment (e.g., cheering, smiling, giving high five)

3. Name physical activities that are enjoyable.

4. Identify feelings resulting from challenges, successes, and failures in physical activity (i.e., happy, scared, angry, sad).

5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5

Standard B
Apply movement concepts to the learning and performance of physical activities

1. Select and practice a skill in which improvement is needed.
5. Use specific feedback to improve performance.

Standard C
Participate regularly in physical activity:

1. Consciously choose to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.

2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

5. Recognize that physiological responses to exercise are associated with their own levels of fitness.

6. Choose to participate in activities to increase muscular strength and endurance.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate awareness and participate safely when involved in activity.

2. Form groups quickly when asked.

3. Recognize importance of individual responsibility in a group effort.

4. Encourage others by using verbal and nonverbal communication.

5. Accommodate individual differences. (e.g. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

6. Work productively with assigned or random groups without adult intervention.

7. Contribute ideas and listen to the ideas of others in cooperative problem-solving physical activities.

8. Act in a safe and healthy manner when confronted with conflict during physical activity.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

2. Choose motivators (e.g., music, friends) that will enhance fun and enjoyment in a physical activity setting.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

4. Participate with others in a variety of competitive and non-competitive physical activities.

Grades 6-8
Standard C
Participate regularly in physical activity:

1. Recognize and understand the significance of physical activity in the maintenance of a healthy lifestyle.

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate appropriate behavior in physical activity settings.

2. Demonstrate concern for safety of self and others during games and activities.

3. Demonstrate self-control and sportsmanship/etiquette during games and activities (e.g., accepting controversial decisions).

Grades 9-12

Standard B
Apply movement concepts to the learning and performance of physical activities:
2. Use a variety of complex movement patterns, independently and routinely, to improve skills.

3. Acquire new skills while continuing to refine existing ones.

4. Identify basic biomechanical principles as they pertain to movements within a physical activity.

5. Recognize various levels of performance (novice, competent and proficient).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate leadership by holding self and others responsible for following safe practices, rules, procedures, and etiquette in all physical activity settings.

2. Demonstrate an understanding of responsible personal and social behaviors in physical activity settings.

Lesson Plan 11
Content Area: P.E.- Cross Country Skiing

Downhill Skills

Time Estimate: 60 -90 minutes

Summary: Kids will expand their skills for skiing downhill by learning stem Christie turns, step turns, hockey stops, and linking turns.

Goals/Objectives:
Athletes will be able to:

- Turn using the stem Christie or skidding around a corner
- change directions on a downhill by step turning
- ski uphill using V1 or striding

+ link stem Christie turns, working their way down a steep slope
+ step turn around consecutive corners or cones

- turn using a telemark turn
- link telemark turns

Assessment:
Look for total control while descending. Check for weight transfer between skis to change directions in control with both step turns and stem Christie.

Equipment/Tools/Terrain:
Gym
hill
slalom gates or cones

Get the Jitters Out:
Run two laps of the gym, do 10 bounds and 10 skate jumps, and take a seat

Instructional Input:
Show World Cup footage- uphill and downhill, show a technical downhill or two where step turning is used and where skidding is used. Use slow motion to show the transfer of weight in order to get around the corner in both cases.

Demonstrate both a stem Christie and step turn in the gym. A stem Christie is a little difficult to show without skis, but you can demonstrate the key weight transfer from a wedge to weighting the downhill ski. Start in an athletic position, knees and ankles slightly bent, weight on the balls of the feet and arms slightly forward. Then move into the wedge position simply by turning your toes in and heels out and moving your hands more forward as if guiding you. Next pick up the foot that is on the inside of the turn and will be the uphill ski, weighting the outside or downhill leg. Place that foot parallel to the weighted one and lean into the turn. This is the key motion of a stem Christie. The step turn is similar, but used to travel at higher speeds, without the snowplow, and carrying speed around a corner. As you come into a corner, you quickly move your weight to the outside downhill ski in order to step your inside ski around the turn. Transfer your weight onto the inside, uphill ski in order to step the outside, downhill ski parallel to the other ski.

Continue this motion, quickly transferring your weight and stepping each ski around the turn, guiding with the inside, uphill ski and following with the outside, downhill ski. Lean into the turn and push off the outside edge of the uphill ski and the inside edge of the downhill ski.

Modeling:
Model both these motions as best you can inside the gym while also having the video footage play in slow motion.

Guided Practice:
Have the kids try this first standing in place just getting the idea of the quick weight transfer. Then set up cones and have them pretend to be on skis running through the cones. This will give them the idea of leaning into turns and moving the body weight from foot to foot at high speed.

Independent/Group Practice and Differentiation:
Athletes should then have 10 minutes to warm up skiing without poles. Have athletes then gather in a larger circle or in smaller groups with a pole or cone for each group. Have the athletes practice stepping around the cone on flat ground first, which is also an important skill to work on.

Next move to the hill. Remember it is important to work on uphills and downhills together so make sure the kids have something to work on while they are climbing the hill. Maybe making bigger or smaller steps, moving their weight more forward, getting lower, or timing of their arms and legs. On the first downhill just make one corner with cones. First, work on the stem Christie turn, moving from a wedge to a skid around the corner. Skiers can also move straight into a skid if they have enough control to do that.

The next step is to link the stem Christie turns. This can be done freely down a hill by setting up cones they must go around.

After skiers get that, they can move to the step turn. Set up another downhill corner and have them work on stepping around that corner without snowplowing or skidding. If skiers are mastering this, make additional corners for them to move around (some form of S-turns)

If skiers become very advanced in their downhills, they can move to the telemark turn. This is not used in races, but is a lot of fun and certainly teaches comfort on skis, body awareness, and control. Have skiers get into the telemark position (a lunge), pushing one leg forward and dropping your weight low, flexing in the rear toe, ankle, and knee. The rear thigh should never extend past vertical and weight should be evenly distributed. Move from one telemark stance to another while standing still to get the motion. Then move to a hill to try.

Another way to challenge any of these skills is to add in poles. Pole plants can be used while linking stem Christies, planting on the inside of the corner. A double pole motion or quick V2-like push, can be used to help gain speed around a corner while step turning.

Additional challenges and activities can be added as well. Follow the leader like a snake through gates, try going downhill on one ski, switch feet, try turning on one ski, use small bumps to

accelerate or carry speed, hit jumps, hit a jump and land in a telemark position. The possibilities for fun on downhills are endless. Downhill days are great because uphills must be worked on to get to go downhill.

Group Game:
Dual slalom, where partners race each other down is a fun game.
Relay races work well because skiers need to ski down and back up.
The human slalom is a good one as well. Skiers line up like gates down the hill. The top skier then descends around the other skiers and when they reach the last skier they make a gate and the next skier goes, much like leap frog on a downhill.

Wrap Up
What is important for staying in control on downhills? What skills do you need to turn while descending? Give time for athletes to record progress, goals, and activity.

Standards

Grades K-2
Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

1. Perform various forms of loco-motor movement such as walk, run, slide, gallop, jump, hop, leap, and skip.

2. Perform a variety of non-loco-motor skills such as balancing, bending, stretching, rocking, curling, twisting, turning, pushing, pulling, swinging, swaying
5. Jump and land in various combinations.

6. Demonstrate balance on the ground and on objects, using bases of support other than both feet.

18. Move with effort, time, force, and flow.

19. Move in a variety of pathways (e.g. straight, curve, zig-zag).

Standard C
Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large groups) without interfering or excluding others.

4. Identify reasons for rules and procedures during physical activities (e.g., safety, equipment, directions).

5. Demonstrate respect for self and others during physical activities (e.g., taking turns, appropriate etiquette, cooperation).

6. Accommodate individual differences. (e.g,. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Celebrate personal successes and achievements as well as those of others.

2. Exhibit verbal and non-verbal indicators of enjoyment (e.g., cheering, smiling, giving high five)

3. Name physical activities that are enjoyable.

4. Identify feelings resulting from challenges, successes, and failures in physical activity (i.e., happy, scared, angry, sad).

5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5

Standard B
Apply movement concepts to the learning and performance of physical activities

1. Select and practice a skill in which improvement is needed.
5. Use specific feedback to improve performance.

Standard C

Participate regularly in physical activity:

1. Consciously choose to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.

2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

5. Recognize that physiological responses to exercise are associated with their own levels of fitness.

6. Choose to participate in activities to increase muscular strength and endurance.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate awareness and participate safely when involved in activity.

2. Form groups quickly when asked.

3. Recognize importance of individual responsibility in a group effort.

4. Encourage others by using verbal and nonverbal communication.

5. Accommodate individual differences. (e.g. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

6. Work productively with assigned or random groups without adult intervention.

7. Contribute ideas and listen to the ideas of others in cooperative problem-solving physical activities.

8. Act in a safe and healthy manner when confronted with conflict during physical activity.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

2. Choose motivators (e.g., music, friends) that will enhance fun and enjoyment in a physical activity setting.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

4. Participate with others in a variety of competitive and non-competitive physical activities.

Grades 6-8
Standard C
Participate regularly in physical activity:

1. Recognize and understand the significance of physical activity in the maintenance of a healthy lifestyle.

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate appropriate behavior in physical activity settings.

2. Demonstrate concern for safety of self and others during games and activities.

3. Demonstrate self-control and sportsmanship/etiquette during games and activities (e.g., accepting controversial decisions).

Grades 9-12

Standard B
Apply movement concepts to the learning and performance of physical activities:
2. Use a variety of complex movement patterns, independently and routinely, to improve skills.

3. Acquire new skills while continuing to refine existing ones.

4. Identify basic biomechanical principles as they pertain to movements within a physical activity.

5. Recognize various levels of performance (novice, competent and proficient).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate leadership by holding self and others responsible for following safe practices, rules, procedures, and etiquette in all physical activity settings.

2. Demonstrate an understanding of responsible personal and social behaviors in physical activity settings.

Lesson Plan 12a
Content Area: P.E.- Cross Country Skiing

Putting it all together

Time Estimate: 2 hours

Summary: Kids will go for a long adventure ski using all the techniques they have learned.

Goals/Objectives:
Athletes will be able to:
- complete a long ski using a variety of techniques

Assessment:
Everyone makes it from point A to point B using skis!

Equipment/Tools/Terrain:
A variety of terrain

Get the Jitters Out:
10 jumping jacks and take a seat

Instructional Input:
Show video footage from Norwegian Birkibeiner ski race. Tell the story of the Prince Haakon:

Following the death of the Norwegian king Haakon Sverresson, the two rivaling factions, the Baglers and the Birkebeiners, fought to gain control of the country.

To keep Haakon Sverressons son - Haakon Haakonsson, from being killed by the Baglers, and by that securing the throne, a small group of Birkebeiners brought prince Haakon and his mother, Inga, north. Just after New Year's Eve 1206 the two best skiers - Torstein Skevla and Skjervald Skrukka, carrying the child, chose the route across the mountains separating Gudbrandsdalen and Østerdalen. It was a strenuous journey, but the young prince was brought to safety in Trondheim.

The prince grew to become the king who united Norway, after 1000 years of civil war, and led the country into its golden age during the Middle Ages.

The name Birkebeinere was given by the Baglers, and originally intended to be offensive - referring to their leggings of birch bark, indicating that they were poor and incapable. They proved the Baglers wrong, and today the name carries a sense of pride, strength and endurance - something thousands of people, participating in the historical race every year, keep striving for.

- See more at: http://www.birkebeiner.no/en/MainMenu/About-Birken/About-Birken/The-Birkebeiner-History/#sthash.lvxCkbqu.dpuf
- From: http://www.birkebeiner.no/en/MainMenu/About-Birken/About-Birken/The-Birkebeiner-History/

Ask things like what helped them make it this far over the mountains? What kinds of hardships do you think they faced? How might they have overcome them?

This is a great time to talk about teamwork and leadership.

There are a few options from here depending on your group. If they are close in age or ability, having everyone do the ski together is a really nice way for everyone to enjoy skiing. However, if abilities are too varying within the group than this might make for a stressful ski in which case it is best to split up into groups.

The race is 54km so the goal is for the class to ski a combined 54km. It is great if it can be made into a point to point using snow machines to drop students off at various places. If you divide into groups, you can add the distance each group travels together to make 54km. In this case you might make 3 groups and each one travels between 10-20 km with older or higher level skiers skiing more. Skating is generally faster so if you have a few kids who need a little more speed to stay with the group, they can skate while others classic. Most importantly, the groups need to carry their own Prince Haakon who weighs approximately 3.5kg.

It is great to make this a team effort so groups need to stay together helping each other, taking turns carrying the prince. The more adventurous, the better. Pick fun terrain or have problems the students must work through to make it back. You can hide clues or situation cards in which different events happen that the students must react to. Maybe the weather gets bad and they make a wrong turn or Prince Haakon gets too cold and they need to figure out a way to keep him warmer.

When the students return have them share their adventures with the other groups or record what happened in a journal.

Remember that kids will need snacks and water during this adventure. This is a great time to discuss nutrition ideas. A body needs to be well fueled in order to perform. What makes good fuel? Carbs burn quickly and provide energy faster. The more complex a carb, the longer it will take to digest. A good breakfast with more complex carbs is then important to keep you fueled for a long time. While you are exercising a simpler carb is ideal to get the energy faster. Proteins and fats are slow burning, but still important. They will make you feel more full for longer so

some protein and fats with breakfast of lunch, depending on when you are working out is a good idea. Eggs and yogurt are great sources of both protein and good fats. Oatmeal or whole grain cereals are excellent carb choices. Protein helps to rebuild muscle so it is important to have some protein following exercise.

Independent/Group Practice and Differentiation:
Athletes embark on their adventure.

Wrap Up
Was there a leader in your group? How did you help each other? What was the hardest part? How did you work through it? Days like this, when athletes are asked to put everything together are the days when goals are likely to be accomplished so be sure to give students time to look at their goals and record any progress as well as their activity for the day.

Standards

Grades K-2

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

1. Perform various forms of loco-motor movement such as walk, run, slide, gallop, jump, hop, leap, and skip.

6. Demonstrate balance on the ground and on objects, using bases of support other than both feet.

18. Move with effort, time, force, and flow.

19. Move in a variety of pathways (e.g. straight, curve, zig-zag).

Standard C
Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

4. Demonstrate activities that develop muscular strength and endurance (e.g., climbing, weight bearing).

5. Discuss the benefits of fitness (e.g., being fit allows me to ride my bike, why it is fun to move).

6. Discuss the benefits of healthy food and beverage choices.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large groups) without interfering or excluding others.

4. Identify reasons for rules and procedures during physical activities (e.g., safety, equipment, directions).

5. Demonstrate respect for self and others during physical activities (e.g., taking turns, appropriate etiquette, cooperation).

6. Accommodate individual differences. (e.g,. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

7. Describe appropriate reactions to threatening and/or emergency situations common to physical activity settings (e.g., bear or moose on playground).

8. Understand the importance of dressing appropriately for outdoor physical activity (e.g., layering clothing during winter, sunglasses, sunscreen).

9. Select appropriate safety equipment for specific physical activities (e.g., bike helmet, personal floating device).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Celebrate personal successes and achievements as well as those of others.

2. Exhibit verbal and non-verbal indicators of enjoyment (e.g., cheering, smiling, giving high five)

3. Name physical activities that are enjoyable.

4. Identify feelings resulting from challenges, successes, and failures in physical activity (i.e., happy, scared, angry, sad).

5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5

Standard C
Participate regularly in physical activity:

1. Consciously choose to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.

2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

6. Choose to participate in activities to increase muscular strength and endurance.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate awareness and participate safely when involved in activity.

2. Form groups quickly when asked.

3. Recognize importance of individual responsibility in a group effort.

4. Encourage others by using verbal and nonverbal communication.

5. Accommodate individual differences. (e.g. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

6. Work productively with assigned or random groups without adult intervention.

7. Contribute ideas and listen to the ideas of others in cooperative problem-solving physical activities.

8. Act in a safe and healthy manner when confronted with conflict during physical activity.

9. Analyze possible solutions to a movement problem in a cooperative physical activity and come to a consensus on the best solution.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

2. Choose motivators (e.g., music, friends) that will enhance fun and enjoyment in a physical activity setting.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

4. Participate with others in a variety of competitive and non-competitive physical activities.

Grades 6-8

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities

5. Demonstrate competency for participation in adventure/outdoor activities (e.g., orienteering, snowshoeing, skating).

Standard C
Participate regularly in physical activity:

1. Recognize and understand the significance of physical activity in the maintenance of a healthy lifestyle.

2. Set SMART goals, (specific, measurable, attainable, realistic, time sensitive) for participation in activities of own choosing.

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate appropriate behavior in physical activity settings.

2. Demonstrate concern for safety of self and others during games and activities.

3. Demonstrate self-control and sportsmanship/etiquette during games and activities (e.g., accepting controversial decisions).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Identify several reasons why participation in physical activities is enjoyable and desirable.

2. Reflect on reasons for choosing to participate in selected physical activities (e.g., health, challenge, self-expression, social interaction, personal goal).

3. Enjoy working alone or with others in a sport or physical activity to achieve a goal.

Grades 9-12

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

5. Demonstrate competent skills while participating in adventure/outdoor activities (e.g., Alaskan cultural physical activities, hunting, fishing, skiing, biking, hiking, wilderness survival, camping).

Standard B
Apply movement concepts to the learning and performance of physical activities:
2. Use a variety of complex movement patterns, independently and routinely, to improve skills.

3. Acquire new skills while continuing to refine existing ones.

4. Identify basic biomechanical principles as they pertain to movements within a physical activity.

5. Recognize various levels of performance (novice, competent and proficient).

6. Apply knowledge of major muscle groups to improve performance and/or create training

plans.

7. Explain to others the importance of strategies and safety procedures for success while participating in physical activity (e.g., weightlifting, wearing a helmet while snowboarding).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate leadership by holding self and others responsible for following safe practices, rules, procedures, and etiquette in all physical activity settings.

2. Demonstrate an understanding of responsible personal and social behaviors in physical activity settings.

3. Accommodate individual differences. (e.g., ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

4. Exhibit sportsmanship/etiquette in all physical activity settings.

Standard F:
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Enjoy the challenge of working hard and the satisfaction of improving skills.

2. Seek personally challenging experiences in physical activity opportunities.

3. Recognize physical activity as a positive opportunity for social and group interaction.

4. Analyze selected physical activity experiences for social, emotional, and health benefits

Lesson Plan 12b
Content Area: P.E.- Cross Country Skiing

Putting it all together

Time Estimate: 1-2 hours

Summary: Kids will use all the various ski techniques they have learned to travel a longer distance.

Goals/Objectives:
Athletes will be able to:
- ski for a long distance using a variety of techniques

Assessment:
Watch for kids using different techniques and working together
Look for: Weight transfer, forward body positions, soft knees and ankles

Equipment/Tools/Terrain:
Varying terrain

Get the Jitters Out:
do 10 jumping jacks and take a seat

Instructional Input
Develop a scavenger hunt that uses the surroundings and emphasizes the local environment. Each clue should have a task that involves a ski technique as well as a science task. Things like finding animal tracks, collecting leaves or moss, investigating H2O as water, ice, and snow, looking closer as snowflakes, collecting things of different textures or colors, etc. This is very dependent on location so clues will have to be made up by each leader.

Clues can tie together a bunch of things. They can be written in a tricky way, such as an analogy or riddle that kids have to figure out or they might have to solve a problem like the directions are written using meters, but all you have is a yard stick so you must convert.

Students should be divided up into groups and groups have to remain together, helping each other. Everyone in the group has to do the technique task as well, such as only using double pole to get to the river.

Modeling:
Model how you might help someone who is struggling to keep up using a certain technique by offering encouragement and giving some helpful, not condescending, advice for how they might move better.

Independent/Group Practice and Differentiation:
Different clues can be used for kids of different ages or abilities so the hunt takes about the same amount of time for each group. Groups should work at their own pace, using teamwork and leadership to discover all the clues. This can be set up so each group comes back to a home base after accomplishing a task or by having one clue lead to another clue. If students come back to a base, it is easier to scale the difficulty of the task based on how well the group is doing or how fast they are moving, but it is also more fun and adventurous for kids to just keep going through the journey, working from one clue to the next.

Wrap Up
What did you learn? What was the hardest task? How did you accomplish it? How did you help each other? Take time to record progress towards goals and record the activity.

Standards

Grades K-2

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

1. Perform various forms of loco-motor movement such as walk, run, slide, gallop, jump, hop, leap, and skip.

6. Demonstrate balance on the ground and on objects, using bases of support other than both feet.

18. Move with effort, time, force, and flow.

19. Move in a variety of pathways (e.g. straight, curve, zig-zag).

Standard C
Participate regularly in physical activity:

1. Participate in physical activity outside of physical education class.

2. Identify appropriate physical activities for recess and outside of school.

3. Attempt to perform new movement skills and activities.

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

4. Demonstrate activities that develop muscular strength and endurance (e.g., climbing, weight bearing).

5. Discuss the benefits of fitness (e.g., being fit allows me to ride my bike, why it is fun to move).

6. Discuss the benefits of healthy food and beverage choices.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

2. Apply established class rules, procedures, and safe practices.

3. Participate cooperatively in a variety of group settings (e.g., partners, small groups, large groups) without interfering or excluding others.

4. Identify reasons for rules and procedures during physical activities (e.g., safety, equipment,

directions).

5. Demonstrate respect for self and others during physical activities (e.g., taking turns, appropriate etiquette, cooperation).

6. Accommodate individual differences. (e.g,. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

7. Describe appropriate reactions to threatening and/or emergency situations common to physical activity settings (e.g., bear or moose on playground).

8. Understand the importance of dressing appropriately for outdoor physical activity (e.g., layering clothing during winter, sunglasses, sunscreen).

9. Select appropriate safety equipment for specific physical activities (e.g., bike helmet, personal floating device).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Celebrate personal successes and achievements as well as those of others.

2. Exhibit verbal and non-verbal indicators of enjoyment (e.g., cheering, smiling, giving high five)

3. Name physical activities that are enjoyable.

4. Identify feelings resulting from challenges, successes, and failures in physical activity (i.e., happy, scared, angry, sad).

5. Attempt new activities.

6. Continue to participate when not successful on first try.

7. Try new movements and skills willingly.

Grades 3-5

Standard C
Participate regularly in physical activity:

1. Consciously choose to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.

2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

6. Choose to participate in activities to increase muscular strength and endurance.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate awareness and participate safely when involved in activity.

2. Form groups quickly when asked.

3. Recognize importance of individual responsibility in a group effort.

4. Encourage others by using verbal and nonverbal communication.

5. Accommodate individual differences. (e.g. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

6. Work productively with assigned or random groups without adult intervention.

7. Contribute ideas and listen to the ideas of others in cooperative problem-solving physical activities.

8. Act in a safe and healthy manner when confronted with conflict during physical activity.

9. Analyze possible solutions to a movement problem in a cooperative physical activity and come to a consensus on the best solution.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

2. Choose motivators (e.g., music, friends) that will enhance fun and enjoyment in a physical activity setting.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

4. Participate with others in a variety of competitive and non-competitive physical activities.

Grades 6-8

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities

5. Demonstrate competency for participation in adventure/outdoor activities (e.g., orienteering, snowshoeing, skating).

Standard C
Participate regularly in physical activity:

1. Recognize and understand the significance of physical activity in the maintenance of a healthy lifestyle.

2. Set SMART goals, (specific, measurable, attainable, realistic, time sensitive) for participation in activities of own choosing.

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate appropriate behavior in physical activity settings.

2. Demonstrate concern for safety of self and others during games and activities.

3. Demonstrate self-control and sportsmanship/etiquette during games and activities (e.g., accepting controversial decisions).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Identify several reasons why participation in physical activities is enjoyable and desirable.

2. Reflect on reasons for choosing to participate in selected physical activities (e.g., health, challenge, self-expression, social interaction, personal goal).

3. Enjoy working alone or with others in a sport or physical activity to achieve a goal.

Grades 9-12

Standard A
Demonstrate competency in motor and movement skills needed to perform a variety of physical activities:

5. Demonstrate competent skills while participating in adventure/outdoor activities (e.g., Alaskan cultural physical activities, hunting, fishing, skiing, biking, hiking, wilderness survival, camping).

Standard B
Apply movement concepts to the learning and performance of physical activities:
2. Use a variety of complex movement patterns, independently and routinely, to improve skills.

3. Acquire new skills while continuing to refine existing ones.

4. Identify basic biomechanical principles as they pertain to movements within a physical activity.

5. Recognize various levels of performance (novice, competent and proficient).

6. Apply knowledge of major muscle groups to improve performance and/or create training plans.

7. Explain to others the importance of strategies and safety procedures for success while participating in physical activity (e.g., weightlifting, wearing a helmet while snowboarding).

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate leadership by holding self and others responsible for following safe practices, rules, procedures, and etiquette in all physical activity settings.

2. Demonstrate an understanding of responsible personal and social behaviors in physical activity settings.

3. Accommodate individual differences. (e.g., ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

4. Exhibit sportsmanship/etiquette in all physical activity settings.

Standard F:
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Enjoy the challenge of working hard and the satisfaction of improving skills.
2. Seek personally challenging experiences in physical activity opportunities.
3. Recognize physical activity as a positive opportunity for social and group interaction.
4. Analyze selected physical activity experiences for social, emotional, and health benefits

Lesson Plan 13
Content Area: P.E.- Cross Country Skiing

Setting Goals!

Time Estimate: 60 minutes

Summary: Kids will learn the basics of setting goals and create a goal journal and training log

Goals/Objectives:
Athletes will be able to:
- write appropriate goals
- record their activity for the day
- reflect on their goals

Assessment:
Meet with students individually to go over goals and see if they have written appropriate ones.

Equipment/Tools/Terrain:
Notebook with various graphic organizers depending on age group

Get the Jitters Out:
Run two laps of the gym, do 10 jumping jacks, and take a seat

Instructional Input:
Start by sharing a story of an athlete who set a goal and accomplished it by setting many smaller goals day to day. Why did they set the smaller goals? What makes a good goal? Discuss things like measurable, outcome vs. process oriented, realistic, resources needed, and recording goals as good aspects to consider when creating goals. Share a goal writing graphic organizer that is age appropriate. Under the “Coaching” tab there is a “goal setting” tab that has much more

information that should be used.

Modeling:
Share one of your own goals and fill out the goal sheet accordingly. It is important to demonstrate confidence in sharing your goals.

Guided Practice:
Have the class brainstorm a goal for the whole class, maybe it is an AK State standard or a goal written in one of these lesson plans. Put it on the top of the goal sheet. Then go through the sheet creating all the smaller goals needed to get there. If there is a large group, break up into smaller groups and have the kids brainstorm together to create the rest of the goals needed. Then have them share the goals with the rest of the class. With all the smaller goals written up, go through as a class and decide which ones are best and why. Then finish the class's goal sheet and post it on the wall.

Independent/Group Practice and Differentiation:
Each student should have a notebook to be used for reflection, goal writing, and an activity log. Give students a graphic organizer to work with. Have each student spend time creating their own goals. This should be independent and thoughtful, taking an adequate amount of time for students to do this. Students should meet independently with you to go over their goals, both to see if they grasp the goal setting concept and to make sure you know what they hope to get out of cross country skiing.

Play a game of tag at the end since this is cross country ski practice after all! Get those hearts pumping!

Wrap Up
What makes a good goal? How big should goals be? How many goals should you have? What helps you accomplish your goals?

Grades K-2

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Celebrate personal successes and achievements as well as those of others.

Grades 3-5

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

2. Choose motivators (e.g., music, friends) that will enhance fun and enjoyment in a physical activity setting.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

Grades 6-8

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Identify several reasons why participation in physical activities is enjoyable and desirable.

2. Reflect on reasons for choosing to participate in selected physical activities (e.g., health, challenge, self-expression, social interaction, personal goal).

3. Enjoy working alone or with others in a sport or physical activity to achieve a goal.

Grades 9-12

Standard F:
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Enjoy the challenge of working hard and the satisfaction of improving skills.

2. Seek personally challenging experiences in physical activity opportunities.

Lesson Plan 14
Content Area: P.E.- Cross Country Skiing

Training to get faster- different levels of intensity

Time Estimate: 60-90 minutes

Summary: This lesson plan serves as an overview of different workouts that can be done to further athlete development by training at different intensities.

Goals/Objectives:
Athletes will be able to:
- use perceived effort to gauge the intensity level they are training at
- understand the different levels of intensity used in training

- define their own training zones

Assessment:

Use your own knowledge of intensity levels to gauge if students are using the proper intensity for the given workout. Kids will be kids and it is important to let them surge and naturally drift between intensity levels. It is not until they are older and really desire to increase their abilities that intensity levels should be followed more strictly. Take time then to look for skiers skiing with good technique and look to see that they acknowledge and recognize that there are different intensities in which to move that all serve a different purpose.

Equipment/Tools/Terrain:

Gym
Heart rate monitor
Varying terrain

Get the Jitters Out:

Run two laps of the gym, do 10 jumping jacks, and take a seat

Instructional Input:

In order to become more fit and faster in cross country skiing, skiers have to work moving at varying intensities to target different parts of their bodies. Cross country skiing is a challenging sport because it requires skiers to have strong muscles and strong hearts. Skiers need to work well aerobically as well as anaerobically. Just like you would lift weights in the gym to get stronger muscles, you need to move at different intensities to get stronger inside your body, the heart and lungs. Moving at different intensities also makes your muscles stronger and trains all the parts of your body to work together as a unit. Different speeds and durations of work target different parts of the body. It is important to work in all intensities and to balance this type of intense training with rest and also lots of distance skiing. Copy the below chart for students to put in their notebooks.

Training Intensities for Cross Country Skiers (adapted from Alaska Pacific University Nordic Ski Center)

L1	Easy training used for recovery, warm up and warm down. Very important for recovery between hard sessions. 60-70% of max heart rate or effort
L2	Everyday distance training pace. "Bread and Butter" of the endurance athlete. Moderate activity, typically between 30 minutes and 3 hours. 70-80% of max heart rate or effort
L3 Low	Fast Aerobic work or Marathon Pace. Typically used in pace work ranging from 20-90 minutes. Fatigue builds from the duration. Often good to work on technique while moving at this type of pace even if for a short duration. This pace helps to build muscle endurance. Can still talk while moving. 80-85% of max heart rate or effort
L3 High	Anaerobic threshold pace. "Comfortable Fast" typically used in pace from 20-60 minutes or intervals from 5-20 minutes with short recovery. 30-50 km race pace. This is also used to build muscle endurance while also working to strengthen the heart. Talking become increasingly harder and focus needs to increase to keep

	moving. 85-90% of max heart rate or effort
L4	VO2 Max or interval pace. Fast sub-maximal effort with heavy breathing, but a lightness in the muscles. 5-10km race pace with intervals typically between 2 and 5 minutes with equal to slightly less recovery. 3-5 repetitions. Used to strengthen the heart and lungs. Talking is not possible, muscles will feel fatigue and some burn, focus to keep going is required. 90-95% of max heart rate or effort
L5	Anaerobic training or sprint pace. 95% effort with work times between 30-120 seconds with long recovery. 5-10 repetitions. Used to develop the anaerobic system, training the body to work for longer periods without enough oxygen. Muscles will have the "flood" feeling or burn immediately after finishing. That feeling is the anaerobic system working. 95-100% of max Heart rate or effort
L6	Speed. Typically between 5-30 seconds short bursts with long recoveries. 10-15 repetitions Used to increase speed by developing fast twitch muscle strength.

The majority of training is done in L1 and L2. However, working in some faster paced workouts, not only makes you faster and stronger, but is also fun and a good way to spice things up. All of these intensities can be developed into fun workouts such as the L4 workout described next. Have kids race head to head, make relays, put a jump in the middle or an obstacle, or develop challenges for the kids to work through.

To have kids find their max heart rates, you will need a real heart rate monitor. Have kids bound with poles uphill for 3-4 minutes as hard as they can and record their heart rate at the top. 220-age is a good approximation if you do not want to do a max test.

Modeling:

Show what the pace might look like for different intensities or the type of breathing that might occur. Demonstrate how to measure heart rate using your fingers on your throat if heart rate monitors aren't available.

Guided Practice:

Have students run through a few technique drills for whichever technique they will be using during the intensity in order to warm up and develop something to think about while moving quickly.

Independent/Group Practice and Differentiation:

Warm up is important when doing intensity. Just like a car can shift from first to fifth, our bodies don't like to either. It is a good idea to always start with at least 15 minutes of easy skiing. If you are doing L4 or higher it is a good idea to spend a few minutes moving at a L3 pace to further warm up or shift through those gears before embarking on the task at hand. Run through the main part of the workout, using a specific intensity and a specific recovery time period in which skiers should move around slowly before starting the next piece of intensity. Having a technique goal for the intensity session is a good idea to give athletes something to think about while they are moving and to continue to improve all aspects of their skiing. After they have finished all the repetitions, have athletes cool down or ski easy for another 15 of so minutes to clear the waste products out of the muscles.

Wrap Up

Have athletes reflect on their training, things that went well and things that didn't. Give time to record any progress on goals and the daily activity.

Standards

Grades 3-5

Standard B

Apply movement concepts to the learning and performance of physical activities

1. Select and practice a skill in which improvement is needed.
5. Use specific feedback to improve performance.

Standard C

Participate regularly in physical activity:

1. Consciously choose to participate in moderate to vigorous physical activity outside of physical education class on a regular basis.

2. Participate in local physical activity opportunities.

3. Choose to participate in structured and purposeful activity.

4. Monitor his or her physical activity using a variety of tracking tools (e.g. fitness logs, pedometers).

Standard D

Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

2. Compare target heart rate and perceived exertion during physical activity.

3. Measure, record, and compare the heart rate before, during, and after participation in physical activity of various levels of intensity.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

5. Recognize that physiological responses to exercise are associated with their own levels of fitness.

6. Choose to participate in activities to increase muscular strength and endurance.

7. Explain how improved flexibility increases the ability to perform skills.

8. Maintain heart rate within the target heart rate zone for a specified length of time during an aerobic activity.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate awareness and participate safely when involved in activity.

2. Form groups quickly when asked.

3. Recognize importance of individual responsibility in a group effort.

4. Encourage others by using verbal and nonverbal communication.

5. Accommodate individual differences. (e.g. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

6. Work productively with assigned or random groups without adult intervention.

7. Contribute ideas and listen to the ideas of others in cooperative problem-solving physical activities.

8. Act in a safe and healthy manner when confronted with conflict during physical activity.

9. Analyze possible solutions to a movement problem in a cooperative physical activity and come to a consensus on the best solution.

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Develop self-confidence and a positive self-image in physical activity settings.

2. Choose motivators (e.g., music, friends) that will enhance fun and enjoyment in a physical activity setting.

3. Participate in physical activities which will allow students to set and achieve individual and team goals.

4. Participate with others in a variety of competitive and non-competitive physical activities.

Grades 6-8

Standard C
Participate regularly in physical activity:

1. Recognize and understand the significance of physical activity in the maintenance of a healthy lifestyle.

2. Set SMART goals, (specific, measurable, attainable, realistic, time sensitive) for participation in activities of own choosing.

3. Maintain a physical activity log for a designated period of time (e.g., weight training charts, steps during the day, time engaged in physical activity).

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Monitor heart rate before, during, and after various intensity levels of physical activity.

2. Compare the fitness benefits of a variety of activities.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate appropriate behavior in physical activity settings.

2. Demonstrate concern for safety of self and others during games and activities.

3. Demonstrate self-control and sportsmanship/etiquette during games and activities (e.g., accepting controversial decisions).

Standard F
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Identify several reasons why participation in physical activities is enjoyable and desirable.

2. Reflect on reasons for choosing to participate in selected physical activities (e.g., health, challenge, self-expression, social interaction, personal goal).

3. Enjoy working alone or with others in a sport or physical activity to achieve a goal.

Grades 9-12

Standard B
Apply movement concepts to the learning and performance of physical activities:
2. Use a variety of complex movement patterns, independently and routinely, to improve skills.

3. Acquire new skills while continuing to refine existing ones.

4. Identify basic biomechanical principles as they pertain to movements within a physical activity.

5. Recognize various levels of performance (novice, competent and proficient).

6. Apply knowledge of major muscle groups to improve performance and/or create training plans.

7. Explain to others the importance of strategies and safety procedures for success while participating in physical activity (e.g., weightlifting, wearing a helmet while snowboarding).

Standard C
Participate regularly in physical activity:

4. Develop evidence-based personal activity plans that include self-selected physical activities and sports.

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

4. Design, implement, monitor, and adjust a personal fitness program to meet personal needs and goals for a lifetime.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate leadership by holding self and others responsible for following safe practices, rules, procedures, and etiquette in all physical activity settings.

2. Demonstrate an understanding of responsible personal and social behaviors in physical activity settings.

3. Accommodate individual differences. (e.g., ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

4. Exhibit sportsmanship/etiquette in all physical activity settings.

Standard F:
Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction:

1. Enjoy the challenge of working hard and the satisfaction of improving skills.

2. Seek personally challenging experiences in physical activity opportunities.

3. Recognize physical activity as a positive opportunity for social and group interaction.

4. Analyze selected physical activity experiences for social, emotional, and health benefits

Lesson Plan 15
Content Area: P.E.- Cross Country Skiing

Interval Basics- Level 4 VO2 Max intervals for skiers who have the basics of technique

Time Estimate: 60-90 minutes

Summary: Kids will understand the purpose of an interval workout and will have basic knowledge of how heart rate can be used to monitor training.

Goals/Objectives:
Athletes will be able to:
- Maintain a pace for a set amount of time
- Use appropriate technique for the terrain
- Record time and heart rate for each interval
- Explain why their heart rate works to monitor their effort

Assessment:
Check students' activity logs to see if they recorded the proper information of time, heart rate, perceived effort

Equipment/Tools/Terrain:
Heart rate monitor
Undulating terrain- a loop of approximately 3-4 minutes

Get the Jitters Out:
Run two laps of the gym, do 10 jumping jacks, and take a seat

Instructional Input:
We know skiing is hard, we sweat, breathe hard, our muscles burn. How do we get better? More efficient? Brainstorm ideas with kids. What happens when we workout? Our heart is made of muscle so, just as we might lift weights to get stronger biceps, we need to stress our heart to make it a stronger. The heart pumps blood that gets oxygen to the rest of the body to make the other muscles contract and release, propelling us forward. The stronger our hearts are, the more oxygen we can get through our body and the faster we can move! How do we get a stronger heart? The same way you might get stronger biceps. How would you get stronger biceps? Go to the gym, do some exercises that isolate your bicep, pick a weight that is challenging and do

multiple repetitions of that exercise. Repeat this over time and your bicep will get stronger. For the heart, we pick a medium length of time 3-5 minutes in which we will work almost as hard as we can. Then, we take a rest to let the body recover for bit and repeat it. If we do 3-5 repetitions and continue to do this a few days a week, our heart will get much stronger.
Show the chart from the training basics page with the different levels of training. Explain how each level works a different aspect of the body's efficiency. We can use heart rate as well as perceived effort to know we are working in different levels.
We can measure how hard our heart is working through a heart rate monitor. It counts the number of beats per minute that our heart is beating. The higher the heart rate, the harder our heart is working. For the purpose of understanding that heart rate increases with more intense activity, students can simply use their fingers to find their pulse on their neck and count beats for 6 seconds, then multiply by 10 for beats per minute.

To keep the fun level high, it is a good idea to set this up as a sprint relay. Athletes will be partnered, mixed gender and mixed ability is fine. The first leg will sprint the course then tag off to their partner. The partner will ski the course and tag back. This will continue until each person has done it 3-5 times. This is a good time to remind students about teamwork. Cheering on and encourage their partner is always helpful.

Remind athletes the importance of warming up and give them proper time to warm up. Warming up allows all the energy systems to start working and feeding the muscles before they are under too much stress.

Modeling:
Put on a heart rate monitor and measure your heart rate standing still. Then start to do jumping jacks and show how your heart rate increases as you continue to jump.

Guided Practice:
After the kids have had 20+ minutes to ski around and warm up. Have everyone ski a lap of the course at a good clip, not as fast as the intervals will be, but faster than the warm up pace in order to prepare the body one more step. Just as with a car, a body needs to shift through all the gears before getting to the top gear, you can't shift from 1st to 5th.

Independent/Group Practice and Differentiation:
Run through the sprint relay, giving athletes some technical ideas to work on as they go. Record each athletes' heart rate, time, and perceived effort.

Give kids time to cool down, ski around easy, after the workout. This is important because it allows the muscles to clear the waste that is created by moving at a rate that your heart and lungs can't keep up with, meaning not enough oxygen is being brought into the body so energy is created from other sources which produce waste as well.

Wrap Up
Did your heart rate increase with perceived effort? Were you able to maintain your pace all of the laps? Did the heart rate increase each lap? What happened to your heart rate between laps?

Remind athletes that this is supposed to be hard, but the more we do it, the stronger our heart becomes and the easier all endurance activities will become. Lastly, have athletes record this in their activity log. Write the number of minutes spent at the elevated heart rate. If you did 3 laps that were 4 minutes long, your notation would look something like 3x4min or 12 minutes at level 4. Refer to training basics to reference the different levels used in training. Older kids can even use some math skills to calculate the percentage of their max heart rate they were working at and what level that means.

Standards

Grades 3-5

Standard D
Apply fitness concepts to achieve and maintain a health-enhancing level of personal fitness:

1. Participate in selected activities that develop and maintain the health-related components of fitness: muscular strength, muscular endurance, flexibility, body composition and cardiovascular endurance.

2. Compare target heart rate and perceived exertion during physical activity.

3. Measure, record, and compare the heart rate before, during, and after participation in physical activity of various levels of intensity.

4. Engage in appropriate physical activity that results in the development of cardiovascular endurance.

5. Recognize that physiological responses to exercise are associated with their own levels of fitness.

6. Choose to participate in activities to increase muscular strength and endurance.

8. Maintain heart rate within the target heart rate zone for a specified length of time during an aerobic activity.

Standard E
Exhibit personal and social behavior that respects self and others in physical activity settings:

1. Demonstrate awareness and participate safely when involved in activity.

2. Form groups quickly when asked.

3. Recognize importance of individual responsibility in a group effort.

4. Encourage others by using verbal and nonverbal communication.

5. Accommodate individual differences. (e.g. ability levels, gender, ethnicity, disability among people, and physical activities of a variety of actions, culture, and ethnic origins).

6. Work productively with assigned or random groups without adult intervention.

Appendix B

Website Content

Home: Skiing Across Alaska

The goal of this website is to provide the resources needed to successfully teach cross country skiing in schools throughout rural Alaska

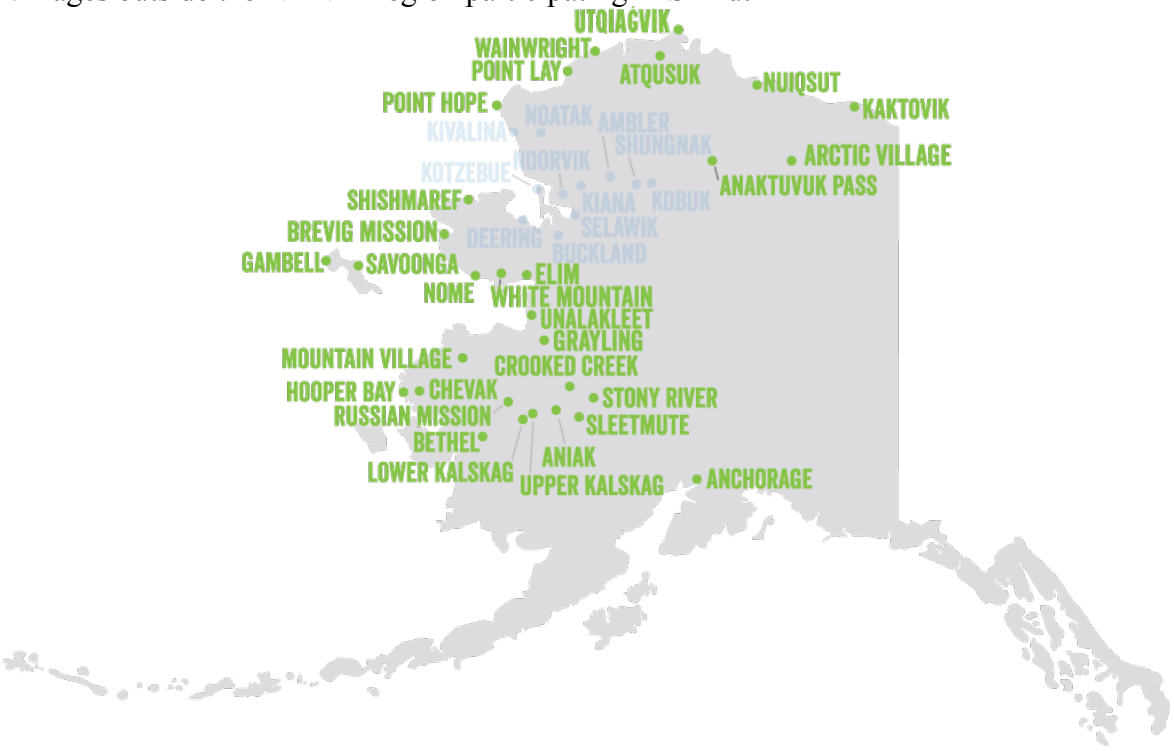
About Nordic Journeys

Our goal is to get Alaska skiing. We call our statewide program Skiku, a name that combines the Iñupaiq word for ice--*siku*—with ski. NANANordic focuses specifically on communities in Northwest Alaska.

The two programs serve 40 communities across Alaska from Anchorage to villages around Bethel, Aniak, Unalakleet, Nome, Kotzebue and Utqiaġvik. We work in statewide partnerships with school districts, corporate and community organizations, and volunteer coaches from the broader ski community to foster the health, recreation, and competitive sports benefits of cross-country skiing and biathlon.

Click here to go to the Nordic Journeys homepage

Villages outside the NANA Region participating in Skiku:



Villages in the NANA Region participating in NANANordic:

About

Purpose: Cross country skiing is a valuable sport for rural Alaskans to learn. It provides means to a healthy lifestyle; a way to enjoy the vast surroundings of Alaska; a method to learn goal setting, confidence, teamwork, and determination; and allows for outdoor recreation during the long winter season. This curriculum will equip teachers to become cross country ski coaches and enable students to learn basic cross country ski skills as well as the vocabulary, equipment, and safety associated with skiing.
Best Ways to Start Ski Club

1. Get the kids out the door. Provide a time and place to check out equipment and spread the word. Allow for weekend checkout. Develop a ski check out system that is easy and reliable.

2. Provide a good balance of structured learning and free time to explore and play on skis. Anytime a kid is moving on skis, they are learning.

3. Ski with kids. Kids learn by following. Show kids what you are working on. Show kids how to fall, how to not give up, how to help others.

4. Find good terrain. Beginners don't need much, but make sure you have different size hills to ski up and down. Provide terrain features. Skiing over different things allows kids to build skills without much direct instruction. Destinations are always good motivators to get kids skiing too. Pick a place around town and ski there.

5. After some time of skiing in P.E. or afterschool, it will be more apparent to instructors and to kids what their interest level in skiing is. At that point, push harder for a handful of kids to have more structured learning and dedicate more time to skiing.

6. Skiing is a lifelong sport. Think about cumulative time spent skiing over the course of a public-school education. All skiing done will add up over time.

Quick Start

This page is designed for volunteers of Skiku or visitors that want to take kids skiing and have a limited amount of time to read through all the provided information.

+ Develop and teach the students a process for picking up and putting back equipment. While this might take some time the first day, it will save lots of time over the course of the week.

+Have a handful of activities for each session. Kids have short attention spans and different groups respond differently to activities. Be ready to switch activities quickly and have a plan in place to do so.

+ Start each day with a warm up ski. This helps kids get used to the equipment and work out the initial excitement before having to focus for more structured instruction.

+Kids are automatically drawn to the closest hill. Just embrace it and teach ascending/descending skills right away to those that just can't stay away from the hill

+In the lesson plans section, use the Guided Instruction part of each plan to **get the heart of the plan**

Day 1 Lesson
Learn how to put on skis- no poles
Introduction to skating/games
Explore small downhill
Introduce sidestep and/or herringbone to get up hill

Day 2 Lesson

Introduce small uphills/downhills to all
Introduction to skating
One ski drills
Ski without poles
Easy games: What time is it Mr. Fox, Red light/green light, Run caribou run
Follow the leader

Day 3 Lesson

Larger uphills/downhills
Slalom
Ski ball
Destination Ski

Day 4 Lesson

Ski loop through village
Slalom/hockey stop
Herringbone or skating uphill
Relay races

Day 5 Lesson

Destination Ski
Relay races
Town races

Essential Questions and Understandings

This curriculum follows the framework of Understanding by Design (Wiggins & McTigue, 2005)
While Understanding by Design was developed for use in the classroom, it also provides a good framework for teaching anything effectively. Understanding by Design was used for a number of reasons. First, UbD requires one to work backward by considering what the desired results are before developing the path to get there. This is an important aspect of learning goal setting, something integral to becoming proficient in any sport. Second, UbD asks planners to consider how they will know their students or in this case, athletes, will have met the goals, objectives, or standards before planning the everyday activities. This forces practices to be more productive because it outlines what an athlete must do in order to show they have met the goal or objective for that day. Standards can often use difficult vocabulary and be very specific so UbD asks the instructor to simplify or broaden the standards into "understandings" or big picture things that the athletes should know. Then, these understandings are put into question form, essential questions, that ask something that might not have an answer, provokes critical thinking, recurs throughout life, or draws connections between curriculums. Essential questions and understandings should be shared with the athletes and posted somewhere visible to serve as a reminder of what the goals are.

Understandings:

Students will understand that…

· Outdoor recreation is a way to develop personal character

· Setting goals is a process that needs daily attention

· Exercise makes you feel good and leads to a healthier life

· Outdoor recreation is a way to connect to the surrounding environment

· Learning a new set of skills takes teamwork, determination, goal setting, patience, practice, and focus

Essential Questions:

· What can we learn about ourselves through learning to cross country ski?

· How can setting goals help us to reach our dreams?

· How can learning cross country skiing enhance our daily life?

· How can we develop a connection to our environment through cross country skiing?

· How can cross country skiing lead to character development? And what characteristics do we need to develop?

Students will know…

· How to transfer energy from body to skis

· The difference between V1, V2, Double pole, Striding

· Ski safety

· Proper equipment and care for that equipment

· The value of goal setting

·

Students will be able to…

· Ski on their own over undulating terrain

· Ski using the appropriate technique for the terrain

· Decide when it is safe to ski

· Pick up, put on, and store ski equipment

· Set appropriate ski goals for the season

Basic Guidelines:

To make the most of the allotted time for skiing, it is imperative to plan ahead and know what the ski session will look like. Leaders need to consider the time frame, weather, energy of kids, age and ability of skiers, and attention span in order to run an effective practice. Just like it is important for young skiers to have goals to work towards, the leader also needs a goal for each ski session. The following pages give some basic guidelines for structuring a ski program.

Building a Practice Session

Equipment

Safety

Building a Practice

How Often Should Kids Practice? (adapted from USSA Level 100 Coaching Manual)

This depends on how long of a season the program plans. Parts of Alaska will have snow from October-May, but it is important to consider other sports the kids might be involved in or other extracurricular activities. It is most important for kids to be involved in a number of different sports in their younger years in order to build a strong athletic background.

Until the age of about 14, kids should ski 2-4 times per week for about a 3-month season. For some of the more advanced kids or kids that really enjoy skiing, it is a good idea to extend the season in which ski practice is available. Remember, dryland or indoor training is also a good way to extend the season if there is a lack of snow or frigid temperatures.

Kids above the age of 14 can practice more frequently, 5-7 times per week and the season can run 3-4 months. In the off-season, when snow is not available, it is a good idea to offer practice 3-5 times a week if kids are interested in improving at a higher rate.

Cross country running is a great way to train for skiing so kids should be encouraged to join the running team when they are old enough. This will provide them the training needed to improve their fitness with the fun of a team.

How long should a ski practice be? (adapted from USSA Level 100 Coaching Manual)

Under the age of 14, kids should practice for 60-90 minutes. Kids over the age of 14 should practice 90-120 minutes. This includes time for gearing up and returning all equipment. Remember there is a lot of equipment involved so time can get eaten up quickly if things are not organized or kids are not taught the process for picking up and putting back the equipment. If practice is being run through P.E. classes, try to arrange for at least a 60-minute window or there will not be enough time to actually make progress in skiing. Offering after school sessions or

longer weekend sessions is a great way to extend practice time. Be practical and flexible. If it is really cold outside, skiing for 90 minutes will not help accomplish the goal of spreading the joy of skiing.

What should happen at practice?

Younger kids (under 12) are great at learning on their own. Providing a structure in which the kids can learn on their own is most effective. Having short activities that allow kids to experiencing skiing on their own works better than providing directed instruction. One goal of practice should be that all kids are moving at all times, limiting standing around time. Plan activities accordingly. For example, searching for animal tracks, skiing a slalom course, and playing games are all activities that keep kids moving and allows them to explore movements on skis.

As kids get older, the amount of time spent on direct instruction can increase, but should never be the majority of time.
Ski Check-out

Having a method for storing skis in a way that is good for the equipment, (see Equipment) but also provides an easy way for kids to come in grab equipment and head out skiing is imperative to having a successful ski practice and developing a love for skiing. Building a ski rack that either provides a slot to stick the tails in or pegs to hang the skis from the tips is the easiest method to keep skis out of the way and easily accessible. Having ski bags organized by size of skis would also work. The same applies for boots. Hanging them by nails in the wall works well to get them off the floor. Develop a method for checking out equipment so that kids can ski on days when there isn't organized ski practice and also bring skis home over the weekend. A simple checkout form hanging with the skis works well. The more time a kid voluntarily spends on skis, the more skills they will develop.

Ski Equipment

Skis

There are two styles of skiing, classic and skate, each one requires a different set of equipment.

Classic

Classic skiing is typically done in prepared parallel tracks and the skier moves their legs forward and back propelling themselves forward, much like running. There are two types of classic skis. Waxless or fishscales are skis that have a rough or textured part, called fishscales, under the foot that catches the snow allowing the ski to glide forward but not backward. This is the most common type for beginners and recreational skiers. As a skier becomes more advanced they move to a classic ski that requires the application of kick wax under the foot that acts in the same way as the fishscales, allowing the ski to glide forward, but not backward.

Skate

Skate skiing requires side to side motion with the skis forming a V, pushing each leg alternately at an angle in order to propel forward, much like ice skating or roller blading.

Poles

Poles provide added propulsion allowing a skier to move at a much faster rate.

Classic poles should come up to about the skier's armpits. Skate poles should come up to the skier's chin. Younger skiers can get away with shorter poles because they don't have the upper body strength to control a longer pole. All younger skiers under age 8 and some first-time skiers should first learn to ski without poles. Even after poles have been introduced, it is a good idea to return to skiing without poles periodically to develop leg strength and to learn how to transfer weight from ski to ski with good balance.

Boots

Classic boots have a softer sole and only come up to about ankle height while skate boots have a stiffer sole and provide some sort of ankle support. Most kids and beginner skiers can use combi boots, or a boot that is designed to work for both. Boots have a metal bar under the toe that the binding clamps over to secure the boot to the ski.

Bindings

Classic bindings are softer allowing the foot to fully flex while skate bindings are stiffer. More importantly, it is good to note that there are two types of binding systems. NNN and SNS. They are NOT interchangeable. Boots that fit into a NNN binding will NOT fit into a SNS binding. All the skis provided to Skiku are mounted with NNN and all the boots fit into NNN bindings so this should not be a problem unless the kids, parents, or school is trying to buy more equipment. The bar under the toe of the boots will attach behind the bumper or the squishy rubber piece often marked by an arrow. (see photo) Some bindings allow the skier to just step in, as this photo shows, pushing down on their toes while the bar is over the slot. Other bindings require a lever to be lifted up in order to push the toe down and then close the binding securing the boot to the ski.

Ski Equipment Care

Skiers should learn basics about how to care for the equipment. Equipment that is well taken care of will last much longer and be easier to learn on. Skiers should be taught to avoid rocks, dirt, or anything that might scratch the bases. It is best if skis are bound together in pairs, base to base and stored upright with tails down or in a ski bag. Organizing by size allows the kids to be able to find the right skis for themselves and requires less supervision. Develop a process for kids to learn.

Skis should be waxed periodically. Wax is chosen by the temperature of the air and snow and the structure of the snow. Glide wax helps skis to glide better and can help to protect the bases. Glide wax can come in the form of paste, liquid, rub-on, or hot. Most common is to use hot wax, which

requires an iron to melt the wax into the ski and a scrapper to scrape the wax off. This is equipment intensive for beginners so using a paste, rub-on, or liquid is more economical for the more recreational skier.

Kick wax is what is applied to the base of classic skis that do not have fishscales. Like glide wax, kick wax is chosen by the temperature of the air and snow. It comes in small tins and is rubbed on the base under the foot in a thin layer and then rubbed in using a cork. This should be repeated 3-4 times to create 3-4 layers of wax. Kick wax needs to be cleaned off after use. Using a scrapper or a putty knife, gently scrape the kick wax off. To remove all the residue, use a paper towel with a bit of wax remover on it.

Equipment Storage
Providing a method of storage that allows for easy access and the ability to check skis in and out easily is imperative to developing skiers. Building ski racks is the easiest method, however using skis bags labeled by size may also work. Skis are best stored tips up, tails down or in skis bags. Checkout of equipment should be available both after school and over the weekend. \

Clothes
It is very important that kids are properly dressed for skiing. It will make the experience more enjoyable, will be easier for them to learn, and will keep the kids safe from the cold. Dressing in layers is best because skiers will often become hot when they start working hard. Cotton and jeans are not good items for skiing. If it is cold wearing full snowsuits is fine, but often a full snowsuit will be too hot for a kid to ski in. Long-underwear is ideal for keeping warm while skiing. Wearing some sort of over-pant that allows for movement and protects from some elements and a light jacket on top works best. Mittens and hats are a must, especially for kids.

Appropriate Clothing

Long-underwear-not cotton

Sweater or fleece

Light jacket

Vest

Socks-not cotton

Mittens or gloves

Hat

Neck gaiter

sunglasses

Safety

Group Size

It is ideal for both safety reasons and the quality of the session to keep the group to 6-10 kids for every leader. Leaders can keep track of their kids in addition to giving them better ski instruction. It can be hard to find enough leaders with ski experience, but there are other tasks a leader without ski experience can aid with such as getting equipment on and off, taking kids to use the bathroom or to warm up, and supervising for dangers

Weather: (courtesy of NENSA)

These are guidelines. In making your decision, be sure to take the following into account:

Factors that make things worse:

- wind chill factors
- long distance from heated space
- lack of shelter from wind
- poorly dressed skiers
- younger and less experienced skiers
- longer race course - remember that skating will be very slow in extremely cold temperatures

Factors that make things better:

- plentiful sunshine
- nearby heated space
- shelter from wind
- warmly dressed skiers
- older or more experienced skiers
- shorter race course - classic may be more satisfying for very cold conditions

Possible dangers of extreme cold:

- frostbite
- lung damage
- eye damage

Remember, skiing is supposed to be fun, not frigid!

Temperature Guideline from NENSA

TEMPERATURE	RACING	TRAINING	EASY SKIING
Below 0 F or -18 C	NO	NO	Several (1-3) short easy periods of skiing (10-15 minutes each) with proper clothing such as neck gaiter over mouth, eye protection; watch for frostbite, don't go too far from shelter
0-5 F or -18 to -15 C	Not recommended	Steady work; no intervals	OK, but keep moving
6-10 F or -14 to -12 C	Usually OK; Consider factors below*	Interval with caution, a good warm-up	OK, keep moving
11 F or -11 C and warmer	OK	OK	OK

Other Safety Considerations

Alaska is a unique place and the dangers present can be quite significant. Each village undoubtedly has its own dangers, most of which are probably well known amongst the locals. If you are not a local, it is a good idea to consult with someone about the specific dangers or safety issues that might be special to that area.

Some things to consider:

Animals- things like bears, moose, rabid foxes, and rabid dogs should all be avoided

Water/Ice- many villages are near rivers or other bodies of water. Check the ice before

skiing across it

Visibility- fog or storms can be intense in certain areas leaving low visibility.

It is important to establish a safety plan before you begin. Be sure kids know what to do if they find themselves in certain situations, such as an animal encounter, getting lost, or getting injured. Be sure all adults know your plan as well. Leaders should carry extra water, food, hat and gloves with them at all times.

Coaching Basics

There are many different roles a coach can take and likely many roles a coach should take. It is therefore important for a coach to take time to figure out their own goals as a coach, their goals for the program, and how they want to get there. Skiku has its own goals that will be shared throughout as they can be used as a good backbone for a new program. However, much like a beginning teacher, it is important for each individual to take time to develop their own philosophy.

Coaching Philosophy (Adapted from NENSA Level 1 Manual)

This curriculum is designed to largely outline the goals of a ski program that continues on after Skiku volunteers have left. Using the Alaska State Standards and the outlined understandings a number of goals can be reached by following the lessons provided. However, as with teaching, we know that every teacher or in this case, coach, goes about their role in a different way, has different things to bring to the program, and has different background knowledge. In addition, each village has its unique values and way of life that must be considered. Therefore, it is important that at the very least, every coach takes time to define his or her own philosophy. The goals outlined in this curriculum can then be adapted to that philosophy or expanded on overtime as the program develops.

Consider the following roles a coach might fulfill at any given time: teacher, advisor, role model, motivator, manager, organizer, care taker, and moderator. It is probable that a coach will take on all these roles at some point. This is why it is important to think about your own priorities as a coach. Establishing a philosophy gives you guidelines for making decisions and putting together meaningful practices.

Why do you want to coach?

What characteristics do you have that make you a good coach?

What skills do you have to bring to the program?

What value do you find in sports?

Who are some teachers or coaches that you admire? Or don't admire? And Why?

Why should kids participate in sports?

What value do you find in outdoor recreation?

What have you learned from participating in sports or in outdoor recreation?

After you have defined your philosophy, it is important to consider the goals of the program as a whole. What objectives or goals are you trying to meet through this program?

The Alaska State Physical Education Standards provide a number of objectives that students are expected to meet. The ones highlighted in this guide are ones that pertain directly to this program. In addition, Skiku has established its own goal to "foster the health, recreation, and competitive sports benefits of cross-country skiing and biathlon" (Skiku, 2014). Look under essential questions and understandings for the goals Skiku has established for this curriculum. Are those of value to you? Consider which of these objectives relate to you or fit in with your philosophy. Why are these objectives important? Refine the program objectives accordingly.

Now, just as you would with any curriculum, write the objectives down and share them with your athletes. Consider posting the essential questions as well. Objectives that are visible to coaches and athletes are more likely to be reached. It continually reminds every one of the goals and gives direction to the athletes. This also provides framework for teaching goal setting.

Communication

Communicating with athletes might be one of the hardest tasks a coach faces. Developing a method to criticize an athlete's skill in order to improve while keeping them motivated is a daunting task.

The first step to effective communication is understanding what the athlete wants to get out of skiing. This is why goal setting is so important. It is imperative to have each athlete establish goals, not only to learn the process, but so you, as a coach, understand what they are striving for.

When complimenting an athlete, it should be very specific such as, "Good work fixing the timing of your pole plant in the V1." Compliments should also focus on effort. It is important for kids to believe they can learn anything if they work hard enough rather than thinking they either have the talent to become a skier or they don't. Statements such as "All that practice you did on the downhill is paying off, I can see that your balance has improved" or "I am really impressed by the focus you had at practice today, I can see you are moving faster on the uphill" or "The conditions were really tough today, I liked how you kept trying different ways to make skating through the soft snow easier and faster."

When criticizing an athlete, be sure to suggest a way in which they can improve as well. For example, “it looks like you are struggling to keep up on the flats, you should try bringing your hands up higher.” Young kids often learn best visually. Show an athlete what you are trying to get them to do and have them mimic you. Videos, pictures, and dry erase boards can help show what you are talking about as well.

Remember who you are communicating to. Use age appropriate and village appropriate language and give time for athletes to think before they answer a question. Remember that different ages, abilities, cultures, etc. are all present. Things like sarcasm or different body language might be misunderstood. Keep your boundaries. Not all students want to be hugged and vice versa. Before helping an athlete into a particular ski position, make sure to explain what you are going to do and be sure it is alright with the athlete if you are going to touch them to help move a body part into proper position. It is a good idea to establish guidelines or rules for what is appropriate in order to make sure everyone feels safe, comfortable, and can focus on the task at hand.

Most importantly, try to use language that is culturally relevant. For example, in Barrow, where Inupiaq is the native language, many students said "alappaa" the Inupiaq word for cold when they were cold and wanted to go inside. Incorporating culturally relevant language helps make students feel comfortable as well as increases local ownership for a program.

Coaching Multi-age, Multi-ability Groups

In a small community, it is inevitable that you will coach groups that span a wide range in ages as well as abilities. In order to make practice valuable for everyone, it is important to understand the ability of every athlete. This is again why establishing a goal setting process is so important. Find time to help each athlete set a goal or go over the goals they have established in order to be sure they are appropriate. Another method to use is having a pre-test. On the first day, ask the kids some questions about skiing, why they enjoy it and so forth. Then have 15 minutes or so of free time on the snow to observe and evaluate their skill levels. Lastly, you can have them run through a series of stations for various ski skills to determine more specifically which skills they know and which ones they need more work on as well as evaluating their coordination, balance, athleticism, and motivation. This will help you pick what types of activities to have at practice.

So you know where each athlete is at skill wise and what they want out of skiing, but you still have the problem of having 10 athletes with 10 different skills levels and 10 different goals. Group work and athlete control are two good methods to deal with this. Divide athletes into ability groups so each athlete is being challenged a proper amount. Rather than naming groups based on skill level, come up with animal names or something of that sort. Each group can have a slightly different activity for the day, some a little more advanced than others. To give athletes more freedom, you can allow athletes to move between groups at their own will as well. Another method is to give the athletes control. Offer three different activities for the day and let the athletes choose which one they want to do. Of course, if there is an athlete that is always picking the easiest task because they are afraid of challenge or an athlete always growing defeated by picking the harder activity, it is time to talk to that athlete and suggest a more appropriate activity.

Assessment

Assessment is always a major topic in schools. Physical education is no exception. It is important to know that the time we spend teaching skills is productive and worth every minute by seeing students learn and improve. However, it can be counterproductive to spend too much time assessing what students know through various testing regimes. To apply effective assessment to skiing, I believe it is important to first let the students know what they are expected to be able to do. As discussed in the Understandings sections, the Understanding by Design model suggests just this. All students learn at their own rate so there doesn't need to be a hard deadline for a student to show they have mastered the objective. Students should be able to check off the objectives and their own goals at their own rate. Self-assessment models can be used by having students keep a goals journal in which they write their goals down and write when they accomplish them. Teachers can use observation effectively in physical education because it is so clear to see if a student has mastered a skill or not.

Goal Setting

Goal setting is a very important life skill to develop at a young age. Athletics are a great way to teach and demonstrate the power of goals because kids are often more engaged and interested in sport than they are in learning to multiply. Kids need to be helped through the goal setting process in order to learn how it works. It will likely take many repetitions and tries before a kid will start setting goals on their own. It is a good idea for each athlete to have a goal notebook in which they can write their goals down and write their progress towards their goals. This can also transform into a training log down the road for those athletes that become more involved.

Goals need to be broken down. It is a good idea to start with a long-term goal or dream goal. Then ask, what do I need to accomplish each year to reach this goal? Each month? Each week? Each day? By having something to focus on and accomplish each day, week, month and so on, it is much easier to remain focused, motivated, and get the most out of each day's practice session. Goals should be written with both outcomes and process in mind. It is important to have goals about how to approach practice or specific skills as much as it is to have goals on the outcome of a particular event. A process goal is something that focuses on skill building, attitude, or approach. It allows for athletes to grow as individuals, gain confidence, increase motivation, and have greater focus during practice time. The process goals are the small steps that when accomplished will lead to the outcome goals, the long-term goals, and ultimately the dream goal.

Some keys to remember when making goals:

-Goals should always be written in the positive. For example, I won't be late for practice should be written as I will be on time to practice every day.

-Goals should be measurable. There should be a way to tell if you have accomplished your goal

- Goals should be challenging, but realistic

- Do you have the resources you need to accomplish your goals?

- Are the goals you have written YOUR goals? not your teacher, coach, or parent's goals for you

- Is your goal and what you need to accomplish it within your control, if not, can you make it within your control?

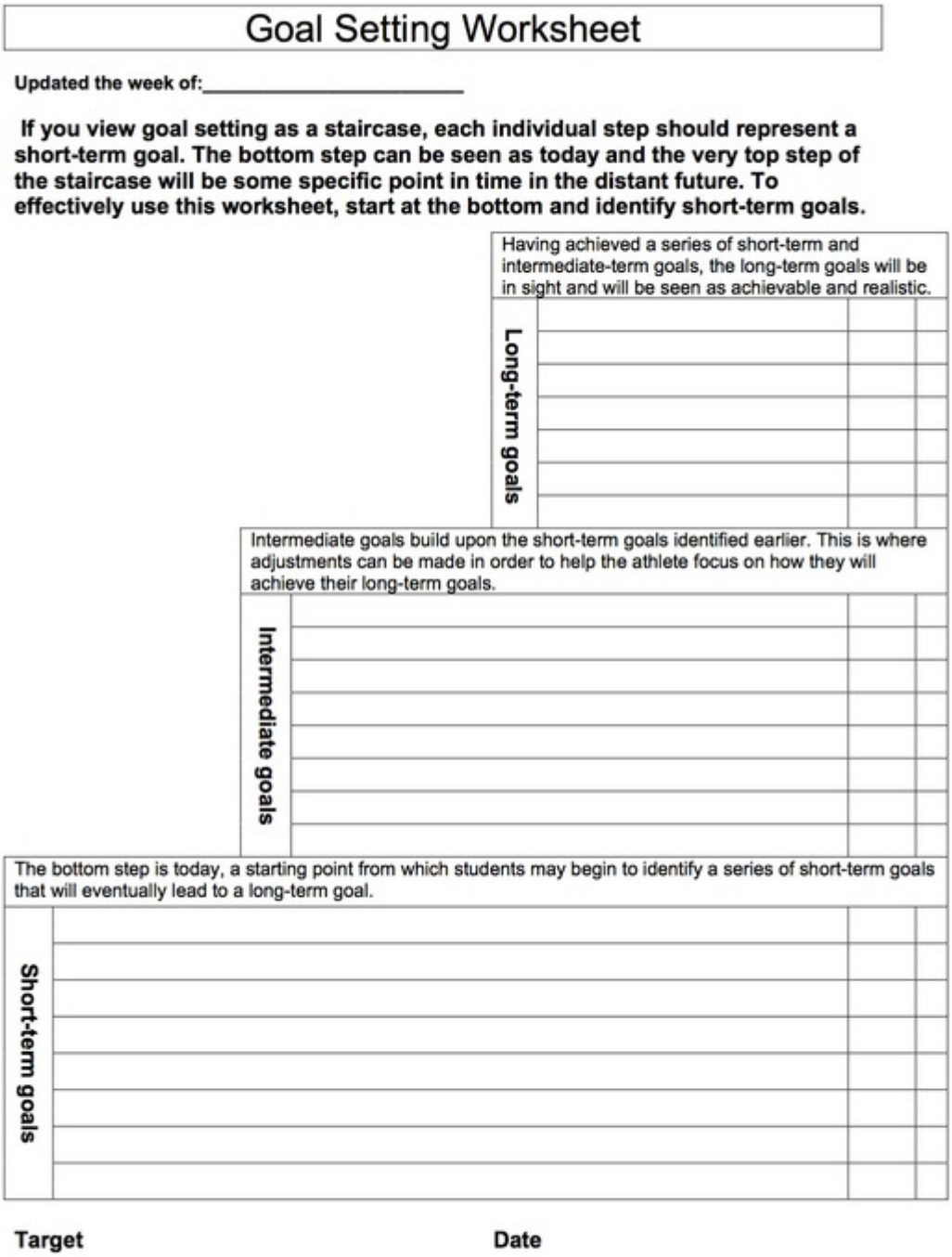
- Sharing your goals can often help you become accountable and can build a sense of teamwork. Be sure to share goals with somebody.

- Setting a goal only works if that goal is revisited. Be sure to build time in to review and reflect in your journal about your progress

- Accomplishing goals often takes help from others. What resources are available to you that you could be using to help?

For younger kids who can't write on their own, it is a good idea to make a chart. NENSA has developed what they call a success chart for working with younger skiers. Please see their webpage for more info and ideas: https://www.nensa.net/page.php?id=3447
Write a different goal in each column across the top. Some goals should be ones you come up with and others should be ones you brainstorm as a group. They should include things in all aspects of skiing: equipment, time spent skiing, teamwork, healthy lifestyle, technique skills, etc. The name of each athlete should be in the rows coming down the chart. After each day or during the practice session, athletes can show you how they have accomplished one of the goals, then write the date in box under the specific goal in the row with their name. One good way to do this that mimics proper goal setting is to establish a few broader and more long term goals such as skiing using appropriate technique for the terrain. This obviously requires many smaller steps, including, but not limited to, taking care of equipment, eating enough before practice, learning each skill individually and so on. Then for each day or week, create a chart that reflects the small goals for that day or week that will help eventually get to the big goal.

This goal setting worksheet is from the USSA Level 100 Coaches Manual.



Goal Setting Worksheet

Updated the week of:_____

If you view goal setting as a staircase, each individual step should represent a short-term goal. The bottom step can be seen as today and the very top step of the staircase will be some specific point in time in the distant future. To effectively use this worksheet, start at the bottom and identify short-term goals.

Having achieved a series of short-term and intermediate-term goals, the long-term goals will be in sight and will be seen as achievable and realistic.

Long-term goals

Intermediate goals build upon the short-term goals identified earlier. This is where adjustments can be made in order to help the athlete focus on how they will achieve their long-term goals.

Intermediate goals

The bottom step is today, a starting point from which students may begin to identify a series of short-term goals that will eventually lead to a long-term goal.

Short-term goals

Target Date

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Biathlon

Safety
Firearms Safety is our Top Priority!

The infrared laser rifles use light instead of bullets and are very accurate. There are a few fundamental rules that all participants must observe. Students should be corrected as part of a normal learning environment. However, repeated safety concerns and/or blatantly disrespecting the process or equipment is unacceptable.

1. NEVER point a firearm or the laser rifles at people. Laser rifles should only be pointed at targets when they are properly set up on a designated 'range' area and nobody is downrange. When the guns are not being fired, they must be held with the barrel pointed straight up or laid on the firing line with the barrel pointed downrange.
Although the guns are bright colors and don't shoot projectiles, they should always be treated just like you would handle any other firearm.

2. Only put your finger on the trigger when the gun is pointed downrange and you are ready to fire.

3. The bolt remains open until the laser rifle is pointed downrange and you are ready to fire. It's a good habit to leave the bolt back so that you practice the loading sequence

4. Once the laser rifle range is set up, only coaches should go downrange and only when no one is shooting.

Set up and Storage

Setting up the Infrared Laser Rifle Range
To set up the laser rifles, you'll need a section of the gym about 40 feet long and 20 feet wide. The best location is a corner area because it naturally restricts the foot traffic around the shooting area. Place the rifles on the 'firing line' so that they face a wall and won't have anyone trying to run through the line of fire.

Proper setup is VERY IMPORTANT because this helps reinforce safe behavior and protects the laser rifles.
1. AN ADULT MUST BE PRESENT TO OVERSEE ALL LASER RIFLE SESSIONS, from set-up to take-down. DO NOT leave students unsupervised with the laser rifles because this leads to unnecessary horseplay.

2. Clearly define the shooting area and firing line with cones or other markers. To keep basketballs and other items away from the shooters, guns, and targets. It's ideal to use half the gym for shooting and shooting-related activities.

3.Make sure that everyone in the gym understands where the shooting area is and what is expected of them so that nobody chases balls or other wayward items into the firing area.

4. The rifles should be placed 20-30 feet from the targets to ensure optimal operation. Too close and the site picture will be off. Too far away and the system won't operate properly.

5. Always place the target boxes near a wall so that there is a natural 'backdrop' for shooting and to reduce the chance of someone running 'around' the shooting area. It is best if the target backdrop is white or another light color. This makes it easier for shooters to see the targets while aiming.

6. Place target boxes securely on the ground for or another stable surface (when shooting standing) so they don't fall and get broken.

7. Place the gun cases on the firing line so they can be used by shooters as a rifle rest.

8. Remember, a safe environment that encourages respect for the shooters and equipment is our primary goal!

Storage, Charging, Turning Devices On, and Adjustments

Each infrared laser system comes complete with a heavy duty case to protect the electronics and all the necessary equipment to charge the computer, target boxes, and rifle.

1. Storage: There is a designated space for each component. Return all items to their proper locations after each use and place the case in a locked storage area!

2. Charging & Powering On: The target box, handheld computer, and rifle must be charged in order to function properly. Consult the photos below to see how to connect the various components.

a. Target Box- charged via a black power box. It also connects via long, white cord to handheld computer. Turn on via switch on the side.

b. Handheld Computer- can charged via black power box or by being plugged into target box. You can also charge the rifle using a cord that connects from the handheld computer to the rifle. Turn on via power button, top and center.

c. Rifle- powered via cord from handheld computer or plugged into USB wall socket (not included). Turn on via button on the left side of the rifle.

3. Rifle Adjustment – The rifle cheek piece and butt plate on the stock can be easily adjusted by loosening the associated screws with the included allen key.

Rifle Basics

Shooting Basics
This section highlights the main components of rifle biathlon shooting. That includes the following items:

1. Safety
2. Eye/Hand dominance
3. Positioning
4. Sight picture
5. Breath control
6. Trigger squeeze
7. Follow through
8. Zeroing a Rifle

1. Review the safety protocol on page 1. This is always the first thing that new students should learn and it's important to go over these rules with shooters before every shooting session and reinforce them as needed.

2. Right hand vs Left hand – most students will express a strong preference for shooting right or left handed. A few won't be sure. In that case, you can help them choose which side to shoot on by checking their EYE DOMINANCE. Every athlete has one eye that is dominant and that will dictate which side they should shoot on. Eye dominance is almost always more important than handedness. To check for eye dominance, use WikiHow's quick 5-step guide:

· Hold your hands at arm's length out in front of you. Your palms should be pointing forward - in other words, you should be looking at the backs of your hands.

· Make a "triangle." Extend both of your thumbs so that they're roughly perpendicular to the rest of the hand. Overlap your hands so that the space between makes a triangle. Your two thumbs should be at the bottom of the triangle, while the edge and index finger of each hand form the two remaining sides.
The space between your hands acts as a viewing window - you should be able to clearly see objects through it.

Look at an object through the triangle hole made by your hands with both eyes open. Find a nearby object that's small enough (or far enough away) that you can see the whole object through the viewing window between your hands. This can be anything - a door knob, a basketball hoop or another object that's a way away.

Focus on the object. Try to focus your eyes on the object between your hands - not your hands themselves. Your hands should become somewhat blurry, while the object remains clear and in-focus. It's important to line this object up directly in front of you and to stare straight at it - turning your head to either side can distort your results.
For best results, at this point, make minor adjustments to your hands so that the object you're looking at fits almost exactly within the edges your viewing window. In other words, if your triangle is bigger than the object you're looking at, move your hands together to make it smaller, and vice versa.

Alternate closing each eye to see which gives better vision. Close one eye, then open it and close the other. Each time you switch eyes, the object you're looking at should do one of two things. It should either become obscured behind one of your hands or remain visible. Next, try your other eye. Your dominant eye is the one that allows you to see the
object while it remains open.

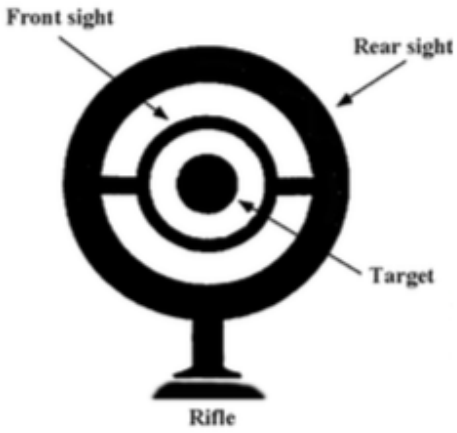
In other words, if you close your left eye and the object jumps out of your vision, but you close your right eye and the object stays stationary, your left eye is your dominant eye.

3. Basic Body Positioning

-When you get into prone (lying down) shooting position, you will be on your stomach, with your body angled a little to the left of the line to the target, as shown in the picture below. (This assumes you are right-handed.) Your spine should be straight and shoulders square with your spine. Your legs should be comfortably spread in a "V."

4. Sight Picture - Biathlon rifles use a "peep" sight. For right handed shooters, place your right cheek firmly on the cheek piece with your ‘dominant’ eye positioned directly behind the rear sight and roughly an inch or two back from the eyecup as shown.

- Line up the sights and target so that they form concentric circles with the front and rear sights, as shown in this stylized peep sight.



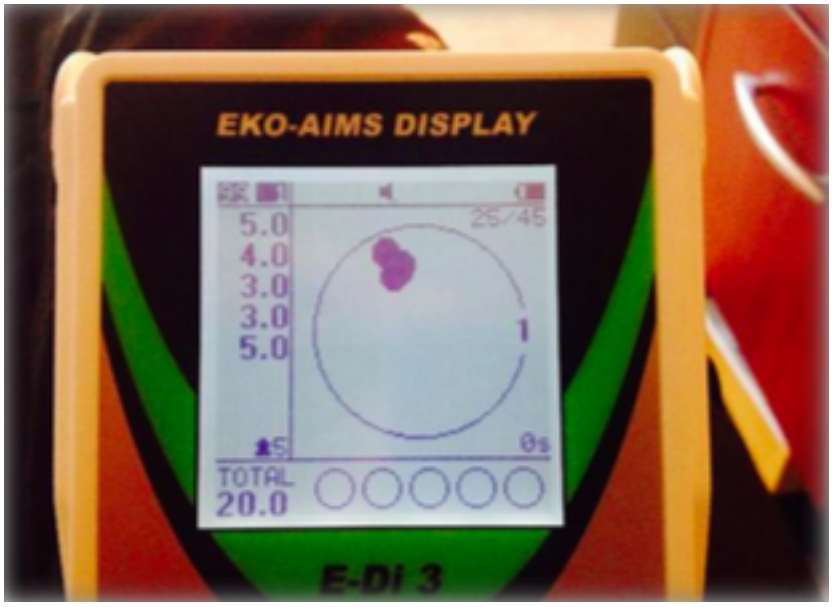
5. Breath Control
   · Take deep relaxed breaths while you're getting set up; don't hold your breath or hyperventilate. When you are ready to shoot, exhale to the natural 'bottom' of your breath, pause on the target, and squeeze the trigger.
6. Trigger Squeeze
   · When you fire, gently squeeze the trigger. Do not jerk.
7. Follow Through
   · Once you squeeze the trigger, keep the barrel pointed at the target for a short interval. This helps you hit the target consistently.

Zeroing an Infrared Laser Rifle

It's important that rifles are zeroed before each session and/or when the distance between target and rifle are changed. The zeroing process confirms that the gun sights are properly aligned with the barrel so that shots hit where the shooter intends them to. Follow the steps below to quickly zero the rifles.

1. Have an experienced shooter take 5 consistent shots off a prone rest.
2. Look at the location of the 'group' on the computer monitor. If it is in the center of the target, take 5 more shots to confirm.
3. If the first group is not centered, you will adjust the target using the windage (Left/Right) and elevation (Up/Down) dials located on the rear sight.

4. First decide which direction your group needs to move in order to be centered. In the group below, you need to move DOWN and RIGHT.



5. Make an adjustment. In this case the rough adjustment would be 10 clicks DOWN and 5 RIGHT. Shoot again.

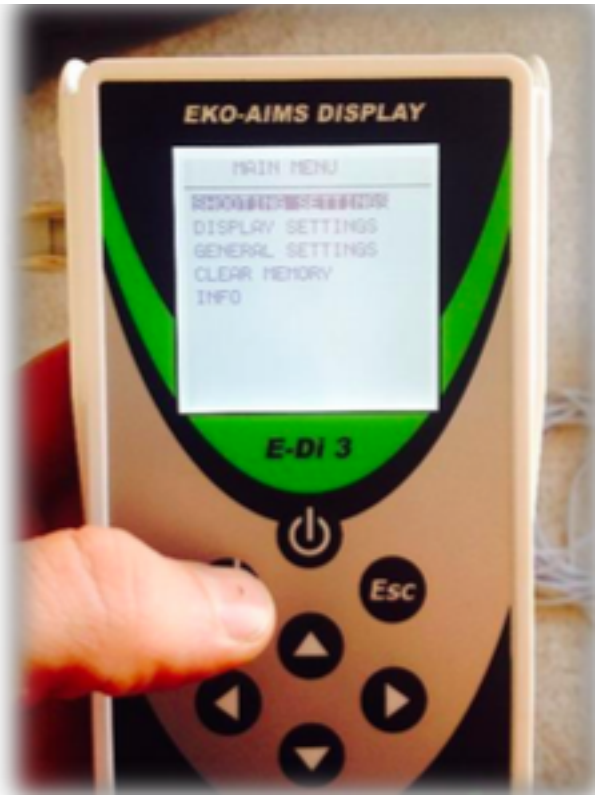
6. Repeat this process until the group is relatively centered and then you can begin games or competitions.

Adjusting Target Size

The computer automatically detects and adjusts for how far away the target is from the rifle, keeping the relative size of the target constant. However, it is possible to adjust the target size larger or smaller to force shooters to be more accurate or to set an easier mark for newer shooters. Target size is in a range between 1(largest) and 10 (smallest). In the image below

the target is set to 5. To adjust target size:

1. Push the ‘back’ arrow to expose the menu and then hit the ‘back’ arrow again to expose the ‘Shooting Settings.’



2. Scroll down to ‘Hit Limit’ and then use the left and right arrows to adjust target size. When you have scrolled to the correct size, hit the ‘ESC’ button twice to return to the main shooting menu.

Training Activities

Once the shooting area is set up and the gun(s) have been zeroed, you are ready to shoot. Choose from the drills, games, and competitions below.

1. Repetitive shooting exercises – have students get in a line and rotate through the gun(s) shooting 5 shots each. They can work on smooth trigger squeeze, consistent breathing, and follow through. After each set of shots, they can take a quick look at the screen to see where their shots hit the target.
2. Wind sprints & shooting – Students take turns running the length of the gym or sprinting around the baselines if space allows and then they shoot five shots. This gets the heart rate up and makes shooting more challenging.
3. Alternating free throws & shooting – Combine two shooting exercises. Variations are listed below.
    - Alternate one shot of each
    - Alternate five shots of each
    - Add ‘penalties’ for missed shots, like 5 push-ups, burpees, or sit-ups per miss.
4. Obstacle course with core – Setup an obstacle course around the gym using foot drills, core exercises, agility drills, tumbling (if you have mats), etc. Students race to complete the course and then have to make 5 shots at the end. Add penalties for misses
5. Relay competitions- Pick teams and have them decide order and a team names. Set a course (either running or obstacle). Define a tag zone – usually team members just tag hands after each shooting. Say go!
6. Races – standardized race that can be done for time and compared between different groups,

classes, and even schools. The standard course loop is around the baselines of the basketball court. A couple variations are listed below.

+ Sprint Format – 2 shooting stages and 3 running stages
  Run three laps around baselines
  Shoot 5 shots- 5 push-ups, burpees, or sit-ups per miss
  Run three laps around baselines
  Shoot 5 shots- 5 push-ups, burpees, or sit-ups per miss
  Run three laps around baselines to finish
+ Pursuit Format – 4 shooting stages and 5 running stages
  Run three laps around baselines
  Shoot 5 shots -5 push-ups, burpees, or sit-ups per miss
  Run three laps around baselines
  Shoot 5 shots- 5 push-ups, burpees, or sit-ups per miss
  Run three laps around baselines
  Shoot 5 shots -5 push-ups, burpees, or sit-ups per miss
  Run three laps around baselines
  Shoot 5 shots -5 push-ups, burpees, or sit-ups per miss
  Run three laps around baselines

Lesson Plans

The following lesson plans were developed to progress new skiers through both classic and skate techniques. They are roughly designed for all age groups and varying abilities meaning each one should be adapted and individualized for each unique group. Additionally, each lesson plan has a number of options of activities for each day. It will take more than one day to learn any given technique so it is a good idea to use the same basic lesson plan for a number of days (not necessarily consecutive days), switching up the activities for each day, but keeping the technical focus. The "Games" tab has many more options that can be used as well to keep things fun and exciting.

The basic layout of each plan is the same. Of course this is adaptable, but it is a good idea to keep some sort of routine to ski practice. This ensures that kids will learn what to do when and will have more focus on the skiing part instead of the directions part. Within the structure, it is a good idea to adapt lessons to be culturally relevant to each village, keeping in mind village values, local traditions and knowledge, and Native languages.
All the lessons follow this pattern:

Goals: There are three levels of goals listed for most lessons. (-) first set of goals for all students (+) second level of goals to reach for once first level is accomplished (*) third level of goals. This allows many different abilities to train at the same time and to use the same basic lesson plan as kids improve.

Get the Jitters out: something to let kids burn some energy so they can focus on the instructional section
Instructional Piece: Use video of elite skiers to demonstrate what skiing looks like. Point out the motions of a specific technique that will be used that day.

Modeling: Run through the motions of that technique on feet in the gym. As kids become more advanced, ski practice can begin outside on skis and this can be done on skis.

Guided Practice: Let kids try the motions on feet, working through various drills. Again, this can be done on snow once kids get a grasp of skiing.
Once on skis, kids should be given 10 or so minutes to warm up and explore moving on skis. This also allows for everyone to get their skis on and be ready for instruction.
Run through different drills with the group on snow

Independent Practice: Next, set up different stations for different abilities. Keep the different goals in mind that the skiers in your group are working on to set up appropriate stations. You can assign kids to groups or you can let them decide themselves. Let them run through different skills at the stations.

Group Game: Kids have short attention spans so 10-15 minutes is all the time they can spend on an activity before they need to move on. A game that all kids can participate in and use the skills they were working on is a good way to finish up ski practice.

Wrap Up: It is good to ask kids some questions about technique they were working on or different things they learned. Also give time for kids to record progress towards goals and their daily activity.

Standards: Possible standards that can be worked on for each lesson are listed.

Given bad weather, there is always an indoor option as well. The instructional sections should remain the same. All the techniques can be practiced on feet in the gym. After some time is spent practicing body positions and timing for a specific technique, develop stations, a game, or a relay that incorporates that technique as well as any other that have already been taught. In the end, cross country skiing requires a lot of fitness so reverting to some sort of game of tag is always a good choice to get kids moving! Adding in strength exercises, balance drills, power activities, and stretching are all good indoor activities as well.

Ideas:
Body weight strength circuits: core exercises like sit ups, push-ups, one legged squats, lunges
Balance: any type of balance board, dyna disc, bosu balls, one legged hops, balance beam work
Power: jumps (two legged/one legged for height/distance), jumping onto boxes

Lesson Plans:

<u>Equipment Basics</u>

<u>Basic Ascending and Descending</u>

Classic
- <u>striding</u>

- double pole
- kick double pole

Skate
- no pole
- V1
- V2
- V2 Alternate

Downhill Skills

Adventure Skis:
- Birkebeiner Ski
- Scavenger Hunt

Setting Goals

Intensity Basics

L4 Intensity

Training Basics

The goal of Skiku is of course that kids really enjoy skiing, want to do more of it, and want to get better at it, maybe even begin racing! As this progression happens, it is important to start developing more thorough plans for helping kids to achieve this. There is endless information about training and physiology and this is truly only a very rough overview of what types of things need to be considered as a program develops. Use this simply as a basis for understanding how a program can expand and develop as kids become more involved in skiing. Then, turn to the resources page to find more about training and racing.

Training Levels and Design

Recording Training

Dryland Training

Racing

Basic Training Design

Training Levels
In order to become more fit and faster in cross country skiing, skiers have to work moving at varying intensities to target different systems within the body, cardiovascular, pulmonary, and

musculoskeletal. Cross country skiing is a challenging sport because it requires skiers to have strong muscles and strong hearts. Skiers need to work well aerobically as well as anaerobically. Just like you lift weights in the gym to get stronger muscles, you need to move at different intensities to get stronger systems within the body. Moving at different intensities also makes your muscles stronger and trains all the parts of your body to work together as a unit. Different speeds and durations of work target different systems. It is important to work in all intensities and to balance this type of intense training with rest and also lots of distance skiing. Copy the below chart for students to put in their notebooks.

Training Intensities for Cross Country Skiers (adapted from Alaska Pacific University Nordic Ski Center)

Level 1

Easy training used for recovery, warm up and warm down. Very important for recovery between hard sessions. 60-70% of max heart rate or effort

Level 2

Everyday distance training pace. "Bread and Butter" of the endurance athlete. Moderate activity, typically between 30 minutes and 3 hours. 70-80% of max heart rate or effort

Level 3 Low

Fast Aerobic work or Marathon Pace. Typically used in pace work ranging from 20-90 minutes. Fatigue builds from the duration. Often good to work on technique while moving at this type of pace even if for a short duration. This pace helps to build muscle endurance. Can still talk while moving. 80-85% of max heart rate or effort

Level 3 High

Anaerobic threshold pace. "Comfortable Fast" typically used in pace from 20-60 minutes or intervals from 5-20 minutes with short recovery. 30-50 km race pace. This is also used to build muscle endurance while also working to strengthen the heart. Talking become increasingly harder and focus needs to increase to keep moving. 85-90% of max heart rate or effort

Level 4

VO2 Max or interval pace. Fast sub-maximal effort with heavy breathing, but a lightness in the muscles. 5-10km race pace with intervals typically between 2 and 5 minutes with equal to slightly less recovery. 3-5 repetitions. Used to strengthen the heart and lungs. Talking is not possible, muscles will feel fatigue and some burn, focus to keep going is required. 90-95% of max heart rate or effort

Level 5

Anaerobic training or sprint pace. 95% effort with work times between 30-120 seconds with long recovery. 5-10 repetitions. Used to develop the anaerobic system, training the body to work for longer periods without enough oxygen. Muscles will have the “flood” feeling or burn immediately after finishing. That feeling is the anaerobic system working. 95-100% of max Heart rate or effort

Level 6

Speed. Typically between 5-30 seconds short bursts with long recoveries. 10-15 repetitions Used to increase speed by developing fast twitch muscle strength.

The majority of training (70-80%) is done in L1 and L2. However, working in some faster paced workouts, not only makes you faster and stronger, but is also fun and a good way to spice things up. All of these intensities can be developed into fun workouts such as the L4 workout described next. Have kids race head to head, make relays, put a jump in the middle or an obstacle, or develop challenges for the kids to work through.

To have kids find their max heart rates, you will need a real heart rate monitor. Have kids ski or bound with poles uphill for 3-4 minutes as hard as they can and record their heart rate at the top. 220 minus skier age is a good approximation if you do not want to do a max test.

Training Design
To design a training plan, start big and then work small. Start with the year or the season if you will only have your athletes for a period of time. Think about what goals you want to accomplish during that time. Big work periods must be followed by rest periods in order to absorb the work and see the benefits.

Next, break things down into months. Think about when there are holidays, school events, other community activities. Plan big work periods when less of these things are going on. Think about what your goals are during that month.

Then, break things down into weeks. If you want everybody to be proficient in all three skate techniques by the end of the month, then you might plan to focus on each one for 1 week and the last week is used to pull it all together or to let kids work on their weaknesses. Within a week, you want variety in training so while the focus of the week might be working on V2, you will want to have a day to focus on speed and another day to focus on using V2 over long distances.

As kids get older, it is important to let them know why you are doing what. This will help them to learn basics of training (an AK state standard) and to have more of a vested interest in the workout. Remember to always be flexible and have a backup plan or two. Something to do inside if the weather is too bad or if there is a safety hazard. Lastly, there is no set formula for the best way to train or the best way to teach kids how to ski so always remember to adapt what you learn and know to the local community. Kids that are excited, having fun, and engaged in skiing is ultimately the most important!

Example Week:

Focus: Skating V2

Monday: Instruction, skill work, drills, and stations
Tuesday: No pole skiing, games, downhill practice
Wednesday: Speed Relays
Thursday: Distance skiing with skill work stations
Friday: Relay races, team sprint, or race
Saturday: a long distance or adventure ski
Sunday: off

Recording Training

Recording training is important for a number of reasons. First, it holds people accountable to goals they set for themselves and allows them to see daily progress towards their goal. Second, it allows people to see how their commitment to activity is improving their fitness, making activity easier as fitness increases. Lastly, as an athlete becomes more serious in their training, a training log allows them to look for patterns and learn how their body responds to different workouts and different activities, allowing them to eventually be able to design a training plan for themselves.

For younger kids, recording training is more about the first two reasons: seeing goals be accomplished and learning the basics of fitness. This can be done a few different ways. A kilometer or time chart is one way. Create a chart with each skier's name in rows and the day of the week in columns. Each day skiers should write the number of kilometers (or miles) that they ski or the amount of time they spent skiing (or being active). Create a class goal of a number of kilometers or minutes spent in activity in order to make everyone feel a part of a team. Periodically have kids reflect on the chart. Are they able to ski more now than they were when they first started? Is skiing easier? Does skiing more make other activities easier?

As kids get older or more involved in ski training, they can begin to record the time spent in different activities, intensity levels, and keep notes on how they felt. Keeping notes is important in learning patterns and being able to create a personal training plan in the future. A spreadsheet is the easiest way to have kids do this. You can print it out to create a notebook in which kids write their goals as well.

This is an example of a training log that includes everything. Intensity refers to how hard the training is. The method is the goal of the training and the activity is what exactly the athlete is doing. The number of minutes is recorded in each corresponding box, with the total minutes of the pink, yellow, and purple sections all equaling each other. This log is very adaptable to meet the age, knowledge, and goals of your program. Subtract columns and add columns accordingly. Most important is that all athletes have a place to record their goals and the work they do towards reaching those goals. The notes section is probably the most important for this as it gives athletes a moment to reflect on what went well, what didn't, how they felt, and how they are progressing towards their goals.

	Intensity					Method					
Week 1	1	2	3	4	5	Distance	Race	Interval	Strength	Speed	Coordin
Monday											
4/4/11											
Tuesday											
4/5/11											
Wednesday											
4/6/11											
Thursday											
4/7/11											
Friday											
4/8/11											
Saturday											
4/9/11											
Sunday											
4/10/11											
SubTotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Dryland Training

As kids get older, providing a year-round ski program is ideal. How do you practice skiing without snow?

Training without snow should be very similar as training with snow, only your mode of activity will change. It is still good to design training with the majority of training being distance training while mixing in activities with higher intensities. As with on-snow training, keeping things fun and exciting is also key. Most of the instructional sections of the lesson plans in this curriculum can be done on foot. It is a good idea to do a little bit of skill work on foot throughout the summer and fall. Get creative! Anyway of getting outside and playing is going to help develop coordination and fitness.

Bounding: bounding is the best way to practice skiing without snow. Bounding is classic skiing without the glide. Go back to the beginning classic lesson plan. When you are teaching classic skiing and you have kids move in the gym, transferring weight from one foot to the next in an athletic stance, you are essentially bounding. It is best to bound up a hill. The "air time" between strides will vary based on the intensity of the workout and slope of the hill. If you are simply out for distance training and practicing skills, there will be essentially no air-time as the weight is transferred from one foot to the next. This is very much like hiking with poles, but with a little more pop in your step. As the intensity increases and you move into a true bound, the air time will increase. This time off the ground is mimicking what would be glide if you had skis on your feet. You can use many of the same drills as on snow, trying to the least number of bounds for point A to B and the most, etc.

Adventures: The summer is a great time to go exploring. Any hikes in the surrounding areas are great ways to enjoy the surroundings while staying healthy and getting fit.

Games: Many of the games can be played on feet as well. Tag-type games are great. Soccer, speedball, ultimate Frisbee are all great games that keeps kids active and develop coordination.

Running: running is the easiest way to stay healthy and fit throughout the year. Getting kids to join the cross country running team is the best way to do this. Going on more adventurous runs is a great way to make running more exciting and fun as well.

Racing

As kids learn how to ski, they will likely enjoy the challenge of racing to test their skills, learn healthy ways of competing, and see how their fitness is increasing. Racing shouldn't be a scary thing. It is a good thing for kids to begin racing as it provides many opportunities to learn how to be a good sportsman, develop teamwork, find perseverance, and how to participate in healthy competition. Racing can be anything from a relay race at practice to an official race against a neighboring town. Here are some guidelines:

How often should kids race? (adapted from USSA Level 100 Manual)

Age 6-10: fun races such as obstacle courses, relay races
Girls Age 10-13/ Boys Age 11-14 (pre-puberty or less experienced skiers): 5-15 race starts 1km-5km in distance
Girls Age 11-14/ Boys Age 12-15 (puberty or more experienced skiers): 10-20 race starts 1km-10km in distance
Girls Age 12-16/ Boys Age 14-17 (post-puberty or experienced skiers): 20-30 race starts 1km-15km in distance
Girls Age 16+/ Boys Age 17 + (mature athletes): 20-40 race starts 1km-50km in distance

The more variety of races, the more diverse of an athlete will be developed. Racing can be done in the summer and fall through running as well. The more practice, the easier racing gets.

What are the different types of races cross country skiers do?
Races can be in skate or classic techniques and varying in length from 1km- 50km.
Refer to USSA guidebook for more specifics on running a race.

Sprint Racing: Sprints are done over 1-1.5km. There is a preliminary round in which each skier skis the course in 15 second intervals. The top 30 racers from the individual round move on to the elimination heats. There are 5 heats of 6 racers. The top 2 from each heat, plus the next two fastest individuals move onto the semifinal heats. The top 3 racers from each semifinal then make up the 6-person final. So the winner of a sprint race, races the sprint course 4 times throughout the day. This can also be run with 4 heats of 4 racers.

Interval Start: In an interval start race, racers start in 30 second intervals. Each racer is then racing the clock. Their race time is the time they finished minus the time they started, accounting for the fact that racers left the gate at different times. This is also known as a time trial format.

Mass Start: Just as it sounds, this is when all the racers head out together and the first one across the line is the winner.

Other Races: Relay races and sprint relays are fun formats in which a team works together to

win a race. In a regular relay, teams are usually made of 3-4 skiers who each ski a race course of 1-10km in distance. In a sprint relay, 2 people make up a team. Each person skis 3 times around a sprint course (1-1.5km) alternating with their partner.

Racing Progression:

Start by just having small races during ski practices or P.E. class. Hand bibs out to skiers. As soon as a kid has a bid pined to them, racing will become more exciting to them and their competitive side will emerge. Grow to having school wide or community wide races. Try a variety of formats and see what resonates best with the kids.

As the ski club develops, consider other racing options. Can you organize a race with a neighboring town or village? Consider the racing options within all of Alaska.

Besh Cups: Regional Alaska Races for racers of all ages. The Besh Cup consists of 3 weekends of racings in different parts of Alaska throughout the winter. These races also serve as qualifying races for Junior National Championships http://www.crosscountryalaska.org/category/races/besh-cup/

Arctic Winter Games: (U14 Athletes): "The Arctic Winter Games is a high profile circumpolar sport competition for northern and arctic athletes. The Games provide an opportunity to strengthen sport development in the participants' jurisdictions, to promote the benefits of sport, to build partnerships, and to promote culture and values. The Games celebrate sport, social exchange and cultures. The Games provide an opportunity for the developing athlete to compete in friendly competition while sharing cultural values from northern regions around the world" (Arctic Winter Games, 2004). http://www.arcticwintergames.org/

Junior National Championships: USSA holds a championship every year for U20, U18, and U16 athletes. Athletes are to qualify within their region, Alaska being its own region, for the event. It is a great goal for many athletes to qualify for the event and it provides a unique experience to travel, race, and meet kids with similar interests. Besh Cups serve as the qualifying races in Alaska.

Other Regional Races: Different areas in Alaska have their own regional races established. Check the calendar on the Cross Country Alaska website for current calendars and more resources.

Games

Games are a great way to work on skills in a fun and entertaining way. Games should be part of every practice for young skiers and should also be used as kids gets older as well. There are a few things to keep in mind when playing games.

-Games should be tied to a specific skill that skiers are working on. Pick games to play in advance to be sure they incorporate the skill work for that day.

-Games are adaptable! This is a great list of games, but tweaks need to be made to make the game most effective for your group. Maybe the names can be changed so they fit your environment better and the kids relate to them better by using the local language, maybe the terrain you have causes you to change the distance or time spent, etc.

-Even when playing games the attention span of young kids is short so have a few games picked out. Play a game for 10-15 minutes before moving on to another activity for 10 minutes and then maybe come back to another game at the end of practice.

-Pay attention to kids who love games and kids who are intimidated or less interested. Sometimes it might be best to divide into different groups to play games so those that are shy or intimidated are playing with each other and can feel more comfortable getting into the game without the more aggressive skiers.

Here is a list of games from Maine Winter Sports Center On-Snow Curriculum Guide to give your ideas. However, there are hundreds more that can be created to work on specific skills and many of these games are adaptable as well.

Short Games

Group Games

Relay Games

Skill Practice

Tag Games

Resources

Nordic Journeys Homepage

Club Development and General Resources

U.S. Ski and Snowboard is the governing body for cross country skiing in the U.S. They have developed a system to educate coaches and to provide resources for clubs around the country. If you are interested in accessing the resources they provide, I highly suggest becoming a USSA member. This gives you access to their educational videos that cover everything from technique to coaching strategies to nutrition. They also offer coaching certification. There are different levels of coaching certification that can be done. All levels have a manual with many resources as well as a clinic component. Some of their resources are accessible to the public, check out their website to see what is available:
http://nordic.usskiteam.com/cross-country-programs

The New England Nordic Ski Association (NENSA) has also developed a number of resources to help develop programs for youth. NENSA refers to their youth league as the Bill Koch League or BKL. Their website has resources for all ages and abilities and covers everything from goal setting to waxing to games. You can also purchase the Bill Koch League Leader/Parent Manual that is a great resource for starting a program. https://www.nensa.net/

Technique Videos: The following links are for videos that show examples of cross country skiing at the highest level. They provide more examples than the short videos in the lesson plans both for instructors and students to study.

World Cup Video: www.crosscountryski.us
This site has access to many World Cup races. The World Cup is the premier circuit for cross country skiing.

Norwegian Technique Videos: Cross country skiing is a very popular sport in Norway and therefore has lots of resources available. The following videos are in Norwegian, however, provide great visual examples of excellent skiing.
Classic Striding: https://vimeo.com/105122498
Double Pole: https://vimeo.com/105105070
Kick Double Pole: https://vimeo.com/105105071
V1: https://vimeo.com/105120308
V2: https://vimeo.com/105121734
V2 Alternate: https://vimeo.com/105121212
Free Skate:https://vimeo.com/105121216

Racing and Skiing in Alaska:

Cross Country Alaska
Nordic Ski Association of Anchorage
Arctic Winter Games
Nordic Ski Club of Fairbanks

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