

NORDIC ROCKS

Quick Start Guide 2022-23



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Introduction

What is Nordic Rocks?

The Nordic Rocks schools program is funded by the [Share Winter Foundation](#) and the [Killington World Cup Foundation](#), and was developed to introduce children in grades K-6 to the joy of cross-country skiing.

The program provides elementary school students with an opportunity to experience cross-country skiing during the school day and to learn the health and lifestyle benefits associated with exercise and outdoor fun.

The Nordic Rocks program is a three-way partnership between selected schools, their communities, and the [New England Nordic Ski Association \(NENSA\)](#) that creates opportunities for students to ski during the school day (usually in physical education class). Students can ski with their teachers and friends on any outdoor surface covered with snow. [NENSA](#) will assist each Nordic Rocks school with a curriculum, resources, teaching support, and equipment acquisition.

What is nordic/cross-country skiing?

Nordic/cross-country skiing (the terms are synonymous) is an on-snow sport where participants use skis to move along flat, uphill, and downhill terrain. It is different from alpine/downhill skiing in that skiers move uphill with their own power, much like running, instead of sitting on a chair lift. Another factor that separates cross-country skiing from alpine/downhill skiing is that the heel is not connected to the ski and the binding has a hinge point at the toe. This makes it so people can cross-country ski almost anywhere there is snow!

There are two separate techniques. Skate skiing looks similar to ice skating while classic skiing, also called the diagonal stride, looks similar to running. This Guide serves as an introduction to classic skiing. It is important to note that more advanced skiers use poles while skiing, but this Guide is designed for the development of basic ski skills without poles.

Important Points to Communicate with Parents:

Cross-country skiing takes place outside in a variety of weather conditions which means students must be properly outfitted with warm clothing. At the very least, each student must bring five essential pieces of clothing.

Essential Clothing every Student Must Have to Cross-country Ski (The Big 5)

- 1) Winter Hat
- 2) Gloves / Mittens
- 3) Winter Jacket
- 4) Snow Pants
- 5) Snow Boots

Please Note: If your school has standard winter recess clothing requirements, these should suffice for essential clothing when cross-country skiing.

If students do not have any of these items, they can often be found affordably at thrift stores. Alternatively, if any of these items cannot be obtained, a combination of warm clothes will work to substitute. For example, leggings under sweatpants and a long sleeve shirt under a sweatshirt can replace snow pants and a heavy jacket.

Further considerations to communicate when going outside in the winter:

- Temperatures vary throughout the day.
- Dress appropriately for the conditions at class time.
- When in doubt, wear warmer clothes.
- Windbreaker layers are suggested on windy days as windchill values often drop significantly below the temperature on the thermometer.
- Encourage students to bring snacks and water for after they ski. Skiing can be tiring and they will be hungry and thirsty after class.

This Guide outlines a basic curriculum for elementary school students who have never cross-country skied before. The curriculum below outlines five example lessons that teach the basics of how to move around on skis, develop basic skills and techniques, and practice those skills through a series of games. It is very important to note that everything in this Guide is a suggestion. The main goal of Nordic Rocks is to get students outside and moving on skis so feel free to use your imagination when it comes to games and activities. Any game played on foot can easily be adapted to skis.

Class 1: Teaching the Basics

A General Note for Teaching Cross-country Skiing: The more help you have available, the better. Having an interested parent/caregiver volunteer or assistant teacher will help you greatly. These volunteers don't have to know how to ski as there will be plenty of tasks that can be done without skis including helping students with equipment, taking photos, and ensuring all students have the proper winter clothes. Potential sources of volunteers include the PTA, parents/caregivers, coaches from your local ski club, aids/teachers, and older students who have been through the program and can act as mentors.

Find your local ski club [HERE](#).

This class can take place inside or outside, but we do recommend that **Equipment Basics** be covered inside as snow isn't necessary and it is a largely stationary portion of class so students may get cold outdoors.

Equipment Basics

- Begin by teaching the class the anatomy of the ski.
 - Identify the binding and the components of the ski including the kick and glide zones--this will allow for easier communication between teachers and students when teaching skills.
 - The kick zone of the ski is the abraded zone in the middle of the ski base (underside) and the glide zones are the smooth sections in the front and back thirds of the ski base.
- Teach the class how to put on and take off the skis. This can be done with volunteers in small groups. If your school has Madshus skis, check out [THIS VIDEO](#) for how to use the bindings.

Standing up on Skis

- Have everyone sit down with the skis on and stand up (to prepare for falling).
- Whenever possible, fall back and to the side.
- When getting up, first have students untangle their legs/skis while lying on their backs. Have them put their feet/skis in the air like dead bugs.
- Then have them set their skis back down parallel to each other on the ground before climbing onto their hands and knees and then standing up.

Moving on Skis

- Begin moving by taking small steps to the front, side, and backwards. This can be done effectively with a large group of "Simon Says."
- You can also have students do stepping 360s but shuffle-turning to the right and

- then to the left. Encourage small steps so they don't cross their ski tips or tails.
- You can also have students try jump turning in place by hop-turning (with their feet together and skis parallel) to the right in a full circle and then to the left in a full circle. See if they can turn a full circle with as few hops as possible. This drill is fun and helps them gain comfort on their skis.
 - Have students take off a ski and practice standing on one foot/ski. Balance is a critical part of skiing and can always be practiced more (even Olympic skiers work on their balance).
 - As the class becomes more comfortable on skis, incorporate games that will encourage more dynamic movement.
 - Dance the “*Hokey Pokey*”, do the “*Limbo*”, etc. More game suggestions can be found at the end of this guide (page 15) and they can be modified for the gym.
 - Any exercise can be done on one or two skis depending on the amount of extra time available for the class. When in doubt, stay on two skis.

Visual Resources:

- [NENSA: Building Comfort on Skis for New Skiers](#)
- [Skiku: XC Skiing Basics](#)
- [Nordic Ski Lab Beginner Cross-country Ski](#) Lesson (including climbing and descending)

Class 2: Developing Basic Ski Skills Outside

For the first few outdoor ski classes, use flat/gentle terrain. Good ski locations are usually determined by snow conditions. If the amount of snow is a limiting factor, places with grass or turf are generally skiable with only a few inches of snow on the ground. Soccer fields and playgrounds are great places to ski. And it's even possible to ski on wet grass!

If there is a cross-country ski club in your town, you can contact them and ask about trail systems that are groomed for cross-country skiing. Find your local ski club [HERE](#). [NENSA](#) can also connect you with local ski centers and programs. A local ski club can serve as a great contact and will often provide opportunities for afterschool programs for interested students. It is important to note that while groomed trails are preferable, they are by no means required for cross-country skiing.

Start class in a flat field and repeat the basic skills if Class 1 took place indoors. The big change from indoors to outdoors is that the skis now glide! This presents the greatest challenge but is also the most fun part of learning to ski.

Stopping on Skis

- Before learning to glide, it is important to know how to stop (these skills should be taught together).
- To stop, the primary technique used is the snowplow/wedge/pizza.
- To snowplow, point your toes towards each other to form an upside-down V with your skis. Make sure the tips DO NOT cross. This will cause students to fall.
- Pressure should be applied from the inside of the leg, knee, and ankle by turning the ski on its inside edge.
- The more pressure that is applied to the inside edge of the ski, and the wider the upside-down V, and the sooner the skis will stop.

Striding and Gliding

- As with all aspects of cross-country skiing, it is important to start striding in the general athletic/ready position (knees and ankles bent). Have students gently bounce up-and-down in place and ask them to cover and uncover their toes with their knees.
- Start by having students shuffle/walk on their skis before they work on gliding.
- Gliding on a ski is like coasting on a scooter. You exert an effort by pushing off one leg and coasting on the other. You can have students do a scooter drill where they take off one ski and scoot themselves along by pushing off the foot without a ski (have them try this on both sides).

- While on two skis, have students start out shuffling again but then encourage them to take longer steps by pushing down and back (to engage the kick zone and create more forward momentum) so they start gliding with each push.
- The more comfortable the students are on the skis, the more receptive they will become to more specific exercises.
- **Exercises:**
 - Set up two cones 100-300 feet apart and have the students take as few pushes off their feet as possible between the two cones.
 - Once the students get the hang of this, have them go as fast as they can between the two cones (they will most likely just run).

Visual Resource: [Skiku: Stride, Glide, and Climbs](#)

Class 3: Hill Climbing and Descending On Snow

Skiing uphill is a very important part of cross-country skiing. The kick zone (abraded section) on the bottom of cross-country skis allows the students to climb gradual hills while keeping their skis parallel. As terrain becomes steeper, the skis won't grab the snow as well and will eventually start slipping. When this happens, there are two main techniques students can use: the sidestep and the herringbone/duck walk.

Sidestep

- On a slight uphill, have the students place their skis perpendicular to the slope so they don't slide back down the hill.
- Have the students step up the hill sideways, first with their uphill ski digging into the uphill (outside) edge of the ski to keep from sliding down, and then follow with their downhill ski digging into the uphill (inside) edge of the ski. You can have the students lean their knees and ankles towards the uphill to help them find the appropriate edges to use when sidestepping.
- The students should transfer their full weight from ski to ski in this technique.
- Continue this sidestepping motion until students reach the top of the hill where the terrain flattens out.
- From there they can go back to the original striding position.

Herringbone/duck walk

- Have students start at the bottom of a hill facing the hill with their skis oriented in an open V-shape (opposite of the snowplow).
- Turning the skis to their inside edges for traction, have them move up the hill with their skis in the outturned V. They can think about bringing their knees together to help get their skis on inside edges.
- Steps can start small but once the students become more comfortable with the mechanics of the technique, steps can become larger.
- The students should transfer their full weight from ski to ski in this technique.
- To practice this, have students waddle up the hill like a duck.
- The width of the V is dependent on the steepness of the slope.
- Students can also think about their skis having a snowball fight. If they use enough force with each step onto the inside edge of their stepping ski, it should blast some snow over towards their non stepping ski.

Upon completing these basic exercises, the students should have the necessary fundamental motor skills to ski over most terrain. Moving forward, the most productive and fun way to improve these skills is through playing games.

Visual Resources:

- [NENSA: Climbing Hills on Skis](#)
- [NENSA: Things to Try on Downhills](#)
- [Skiku: Skills for the Hills](#)

Class 4: Teaching Ski Skills Through Games

While the above skills are very important for moving around on skis, the majority of students' time on snow should be spent playing games. Games teach balance, coordination, agility, general on-ski comfort, and, most importantly, are fun! That being said, games should be played with the purpose of reinforcing skills. Doing a short session of skill-specific drills before and after the game often results in significant skill improvements and helps give students a sense of progress and success.

Short Games to Start Class

The point of these games is to warm up and keep students active while the class gets all of their skis on. There is often considerable time between when the first and last student gets their skis on. These games can fill that time and can be led by either a teacher or student.

The Hokey Pokey: This mirrors the classic song and dance but with an on-ski twist. Stand the group in a circle and sing/say: *“Put your left ski in, put your left ski out, put your left ski in and shake it all about. Then do the hokey pokey and turn yourself around. That’s what it’s all about!”* Do whatever the lyrics tell you to do. Repeat with various body parts and pieces of equipment.

Red Light/Green Light: Have the students line up and start skiing towards you. Then say, *“Red Light!”* Give students 5 seconds to stop and try to hold the position they were caught in. When you say *“Green Light!”* they can begin moving again. The first student to tag you gets to be the next caller.

Simon Says: A quick game to play inside or outside that is great for when students are just starting out. Example: *“Simon Says step to the left, lift your right leg, hop on one foot, spin all the way around, etc...”*

Follow the Leader: Especially good in a space with fun features such as a playground. Have students follow one another mirroring what the leader does. Have them switch leaders every minute or so. Encourage creativity in movement and paths skied.

Group Games

After warming up and practicing one of the skills outlined above, students can play a series of games based on the skill you are trying to hone that day. Time spent playing different games can vary from game to game, but students' general enjoyment level should also be taken into account. All of these games develop the skills listed under each description. Despite this being an individual sport, teamwork is an essential part of the group dynamic and peer learning inherent in cross-country skiing.

Blob Tag: Play in an area with defined boundaries. Start with two students holding hands to become the Blob. They then chase other students until they tag someone who then becomes part of the blob and holds hands with the other blob members. When the blob grows to four people, have students split off into two groups of two-person blobs. Continue this until all students are in a blob. The last two students to be caught start are the first blob in the next round. *Skills: Balance, agility, coordination, on ski comfort, communication, teamwork.*

Duck Duck Goose: Have students sit in a circle facing the center. Choose one student to be "it" and have them tap the heads of the students in the circle. Have them say "duck" or "goose" when tapping the other students' heads. "duck" means stay sitting. "goose" means chase me. The "goosed" student chases the "it" student around the circle trying to catch them. If they catch them, the "it" skier stays it. If the "goosed" student doesn't catch the "it" student, they become it. *Skills: Balance, agility, coordination, on ski comfort, turning.*

Snow Soccer (Snocker): This game has the major elements of soccer but is played on skis. Students can use their hands or feet to move the ball towards the opposing team's goal. If the student holding the ball is tagged by a member of the opposing team, they must drop the ball where they are tagged and the other team gains position of the ball. The player that picks up the ball initially after a turnover is immune to being tagged for 10 seconds or until when they move (whichever comes first). Goals can be scored by hand or foot. Can also play this game with only one ski instead of two. *Skills: Balance, agility, coordination, on ski comfort, communication, teamwork.*

Sharks and Minnows: In a field with defined boundaries, mark off two ends that represent the edges of a safe zone. Select 1-3 students to be sharks depending on the group size. These students are responsible for tagging the other students as they cross from one safe zone to another. The game begins when sharks yell, “Minnows, minnows, cross my ocean.” When a minnow is tagged, they become a shark for the rest of the game. The game continues until only one minnow remains. This student then can become then next shark if multiple rounds are played. *Skills: Balance, agility, coordination, on ski comfort.*

How Slow Can You Go: Students line up at one end of the game area (field, room, stadium, etc.) When the leader says go, everyone must move towards the opposite end of the game area as slow as they possibly can. Stopping is not allowed and everyone must remain in forward motion. The last one to cross to the other side wins. *Skills: balance, agility, coordination, and on-ski comfort.*

Obstacle Course: Ski over bumps, climb over a bench, ski under a rope, ski around poles and bushes, or sidestep up a ramp or hill. Turn the course into a relay. *Skills: balance, agility, coordination, turning, and on-ski comfort.*

Relay Games

These types of games are generally an introduction to a fun variation of racing. While cross-country skiing is a lifelong recreational sport, some teams have a focus on the racing aspect of the sport. These relays can introduce the first aspect of competition in a fun way that will further develop the skills outlined above. In light of the ongoing pandemic, instead of physically touching the next teammate, a “tag” is when the teammate passes a line drawn in the snow (or other marker).

Diminishing Equipment Relay: Split the group into teams of 4-6 individuals and have them line up with all lines starting at once. Each member of the team will race to a cone about 25 feet away, turn around, and come back before “tagging” the next member of the team. Each time a student comes back they drop one piece of equipment. The progression goes as follows: two skis, one ski, no skis (running). The first team to have all members complete all three legs of the relay wins. Only play this game if students are fairly proficient at taking off their equipment on their own. *Skills: balance, agility, coordination, and on-ski comfort.*

Replenishing Equipment Relay: The same concept as the diminishing equipment

relay, but in reverse. This is good to pair with the diminishing equipment relay if you have plans to continue skiing after the game is over. Only play this game if students are fairly proficient at putting on their equipment on their own. *Skills: balance, agility, coordination, and on-ski comfort.*

Slalom Relay: Set up 5-10 cones, or another type of marker, evenly spaced about 2-3 feet apart in two or more rows. Split the students evenly into teams and have them race slalom around the cones in one direction and just straight in the other. This can be done on a flat or low angle hill. If it is on a hill, have the student's race straight up the hill and slalom down. Have students go head-to-head and see who can get through the course the fastest. *Skills: balance, agility, coordination, on-ski comfort, and turning.*

Loop Relay: Create a roughly 30 foot loop, much like the shape of a small track, with cones. Break students get into groups of three or four and have one member of the team line up on the start. Start all students at once and have them race around the loop. Upon completing the loop, have them "tag" off to the next member of their team. Continue this for all team members until everyone races once. *Skills: balance, agility, coordination, on-ski comfort, and timing.*

Three Legged Relay/Race: Have skiers get into two or more teams and then create pairs of two within those teams. With the help of other instructors, have the pairs stand side by side and tie their inside legs together with straps of fabric. Set up a cone at an equal distance, about 10 to 20 feet, for each team and have the three legged pairs race to the cone and back. Upon returning, have them tag off to the next pair. *Skills: Balance, agility, coordination, on ski comfort, communication, teamwork.*

Downhill Games

When available, downhills provide a great opportunity to add a little more speed to the sport of cross-country skiing. Not only will many students find great joy in this, but it teaches ski control and generally helps students become more confident on skis.

Fly Like a Plane/Race Cars/Follow the Leader: Have students get into small groups and have them designate a leader. Have them hold their arms out like airplane wings and make banked turns. From here, encourage the students to get creative in how they move down the hill. Another example is race cars where students put their knees on their skis and slide down the hill using their hands to steer. As with all of these non-racing games, encourage creativity and fun. This may come in the form of students

eventually going off small jumps (if the school deems this to be safe). *Skills: balance, agility, coordination, on-ski comfort, comfort with speed, and ski control.*

The Squeeze: Have a pair of cones placed about 5 feet apart at the bottom of a gradual downhill. Have students start further up the hill at an indicated location and have them ski between the two cones. After all the students have skied between the two cones, move them closer together and repeat. Continue this until the cones are about 1-2 feet apart. This will be a tight squeeze for the students but will force them to have great control of where they are going. *Skills: balance, agility, coordination, on-ski comfort, comfort with speed, and ski control.*

Dual Slalom: The same concept as the slalom relay except everyone starts at the top of the hill and simply races down. Have students pair up to race against one another. This will be the most fun for students if they are paired against other students near their ability. Start both students at once and see who can weave through the cones most quickly. Have a finish line at the bottom of the hill that is past the last cone on both sides. *Skills: balance, agility, coordination, on-ski comfort, turning, and comfort with speed.*

Additional Resources:

- A full list of [NENSA's Suggested Games](#).
- [NENSA's XC Ski Bingo](#): a fun, free game for all children under 14 with prizes.

Class 5: Final Celebration

We strongly encourage celebration day as the final part of this Nordic Rocks curriculum. The nature of the event itself can be modified based on the interests of the school or group of students. Below is an outline for a race that mirrors what might be available for students if they choose to become involved in a local club program. While this is a race, it is important to keep it fun and lighthearted. The goal is to make everyone excited to go out and ski again.

Obstacle Race: The length of the course can vary, but it is suggested to be a loop of at least 100-300 feet (the race should last around 5 minutes). If terrain allows, try to include a hill or two. Using cones, or painting the snow, construct a series of stations around the loop including, but not limited to, slalom sections, figure eights, obstacles such as limbo bars and squeeze points, zig zags, etc. We suggest that the first obstacle is placed at least a quarter of the way through the loop so students can string out and not all hit the obstacle at once.

Have all students begin from the starting line one at a time. It is best to place volunteers throughout the course to ensure everyone is doing the obstacles and not getting hurt. We don't suggest timing the race or tracking finish order. Upon completion of the race, have warm beverages and treats for all participants, if funds allow. Ensure all students congratulate one another and practice good sportsmanship. This will be essential for ensuring everyone has as much fun as possible.

Game Day: Your final celebration can also be a day dedicated purely to games and fun relays for your group if they find that more fun than a race. Ending on a high note and playing games that the majority of the class enjoys will leave students remembering the fun they had skiing this winter!

Adventure Ski: If your school surroundings allow, your final celebration could be an adventure ski to a special destination through the woods.

Visual Resources: [Skiku Adventure Time](#)

Additional Resources

This Guide should be seen as a jumping off point for learning more about cross-country skiing. [NENSA](#) has put together these additional resources below for anyone who would like to learn more about teaching cross-country skiing.

[NENSA Bill Koch League Leader Manual](#)

[Additional Youth Resources from NENSA](#)

[Sign up for NENSA's Youth Skiing Newsletter: *Trail Tales*](#)

Further resources for teaching cross-country skiing include:

Teaching Cross-Country Skiing by Anne Rykken. The book is available from the publisher ([Human Kinetic](#)) or from [Amazon](#).

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This Guide has been compiled by the [Share Winter Foundation](#) and adapted by [NENSA](#) in November 2022. The majority of information was either taken directly or modified from the New England Nordic Ski Association (NENSA) [Bill Koch League Parent/Leader Manual](#) and the [Outdoor Sport Institute \(OSI\) XC Ski Curriculum Guide](#) with expressed consent from NENSA and OSI.