



Cross Country Skiing Skills Book

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*Special
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Introduction

Cross Country skiing can be a great sport for all abilities. As a coach, you will find that many new skiers will express nervousness or resistance because cross country skiing is a great deal of work; it requires a lot of balance and the feeling of sliding on snow may be intimidating. However, by using a patient approach to the progressions and setting attainable goals, athletes will gain strength and ability and begin to love the sport.

As with any sport, there are many factors in addition to the skills development which can make training more enjoyable. Having athletes embrace the wilderness experience and changing weather conditions can also enhance the experience of skiing. So take time to point out the beauty of the trees, shapes of snowdrifts, pattern of the snowflakes, or simply to fall in the soft snow.

STEPS IN TEACHING A DRILL

1. Introduce
2. Demonstrate
3. Explain
4. Organize
5. Execute
6. Encourage and Correct
7. Practice



GENERAL PRINCIPLES

- Drills should relate specifically to what you are teaching.
- Athletes should be made aware of how drills relate to the sport.
- Drills should only be a part of your practice.
- Drills should be introduced at a slow pace and then gradually increased □ Drills should be accommodated for fitness, age and abilities.
- Drills should move from simple to complex. First perform drills that will help keep the interest of athletes.
- Drills should relate to the system of play that the athletes will use.
- Perform a variety of drills to prevent monotony.
- As fatigue sets in, technique deteriorates so provide frequent rest periods.



EXECUTION PRINCIPLES

- Review the drill procedure before practice
- Find an area or trail that is appropriate for the drill and that is not too busy
- When introducing a new drill, walk a group of athletes through it so others can see how it is performed
- Avoid talking too much, get the athletes performing, they will learn by doing.
- When errors occur, the drill should be stopped momentarily to correct errors.
- Praise athletes doing the drill well and encourage those having difficulty.
- If equipment is necessary, ensure it is set up before so that progression from one drill to the next can progress smoothly

Cross Country Skiing Warm Up

A proper warm up for cross-country skiing is about becoming comfortable on skis and reduces strain on your body. Proper stretching of the lower body is also very important. As a group, work through a series of exercises on the skis and then follow them with 5 minutes of stretching. Avoid stretching beyond the range of motion used in skiing before the activity to reduce strains. Additional warm up exercises are at the end of this manual.

Before putting skis on:

- Big steps in the snow, quick walk up on toes.
- Side jumps
- Knee bends, knee lifts
- Lunges
- Ankle rotations

Jackrabbits: Each letter in the acronym stands for something

- J- Jumping jacks
- A- Arch the back, all direction 3 times
- C- Crouch and stand 5 times
- K- Kick to each side with each leg 5 times
- R- Reach as far upwards with each hand, and then both.
- A- Achilles tendon stretch



- B- Bounce on your toes, 15 times
- B- Bend like a tree, left side, front, right, try to touch toes
- I- Intertwine fingers and stretch out hands.
- T- Touch the tips of your skis.

Warm Up Games:

Thousand Steps

Skiers try to take little steps rather than big ones. Ask them to use a certain number of steps to get from one point to another.

Red Light, Green Light, Orange Light:

Line skiers up side by side. When green light is called, skiers move forward as fast as possible. When red light is called, skiers stop dead in their tracks. When yellow light is called, skiers move forward slowly. Switch back and forth between all three, mix it up!

Basic Motor Skills

Remember that skiers at the developmental stage will take more time getting used to skis on their feet. There may be some fear you will have to work through with athletes, even on flat ground. Do not go on the hills until your skier is confident on flat ground.

Stance:

- Sliding feet forward and back on skis while staying in one place.
- Bouncing on skis bending knees.
- Hop in the air, spread skis out to the sides, hop and bring the skis back in.

Balance:

Understanding basic planes of balance: forward/backwards, lateral, vertical.

- Skiing with one pole.
- Skiing without poles.
- Lift the tip of the right ski off the snow, move ski out to the right, move it back parallel and place it on the snow.
- Skiing with poles stretched out horizontally in front.
- Skiing slowly over small bumps to practice balance.



Walking:

- Walking up the hill with straight skis.
- Walking up the hill with skis in a "V".
- Walking with poles, without poles.
- Walking backwards.



Side stepping:

- Side stepping with straight skis.
- Side stepping with skis in a "V" or "herringbone"
- Side step up a gentle slope, medium slope.

Weight Shift:

- Shift weight back and forth between right and left leg.
- Take small jump with the right foot, bring in left leg to join.
- Take small jump with the left foot, bring in right foot to join.
- On a level track run slowly along the track, lifting the skis as you go.

Recovery skills:

Getting up from a sitting position facing downhill or facing uphill and sideways

Sport Specific Skills

Falling and Rising:

- From the ground, position the skis so that they are parallel to each other and close to the body. Work body forward by walking the hands to the front of the skis, sliding one ski slightly in front of the other
- It helps to place one knee on the back ski and then pushing up with the hands to a standing position.

If on a hill, place skis perpendicular to the hill in order to prevent skis from sliding during the rise. Skis must be downhill from the body.



Star Turns: (because of the pattern they leave in the snow)

- Stand in a relaxed, balanced position, use poles as guides.
- Slightly bend left leg and place the full weight onto the leading leg.
- Lift the tip of the right ski, swing it out, and place the tip down at 30-45 degree angle to the right. Keep the tails together.
- Bring the left ski over, and place it parallel to the right ski.
- Repeat this until a full circle is completed. These drills are called star turns because of the pattern that they leave in the snow.
- Repeat this drill but keep tips together on the ground and instead, lift the tails of the skis around. Lift heel up, swing it out and place it down at 30-45 degree angles. Continue for full circle.



Kick Turn:

- While stationary, plant one pole behind you on the same side of the skis as the other.
- Lift the ski farthest from the poles up and forward so that the tail of the ski is near the tip of the other ski.
- Swing the ski around so the tip is in the opposite direction and transfer body weight onto that ski.
- Immediately swing the other ski around and line it up parallel in the new direction.
- The key to achieving the kick turn is having good balance- use balance drills to help.
- Start the sequence in slow motion and then increase it to full speed.

Balance:

Balance is critical to skiing. Mastering the correct balance and having a proper weight shift from one gliding ski to the other is important to ski efficiently.

Good balance requires core strength. Without this, the athlete's ability to balance will be limited.

Using the belly button as a "balance point". Use its position as a focus point when switching between both skis. An athlete must balance and glide on one ski at a time. The balance point (belly button) should be directly over the gliding ski during the entire glide.



Practice

- Stand tall on one ski and lift the other ski slowly.
- Hold the ski up for a count of 5 seconds.
- Feel the balance point (belly button) in alignment with the balancing foot.
- Keep arms still and avoid movement.

Downhill: Teach downhill technique gradually. Move from light downhill to moderate to steep. Ski beside your athlete at first if possible. Ensure the hill has a good runout.



Progression:

- Start on an easy hill and only go partway up the hill. Then when the downhill from this point is mastered, progress further up the hill.
- On small slope, practice changing back and forth from crouching to standing.
- While gliding down, slide one leg out in front...keep weight on back ski.
- Return to parallel position, then alternate legs.
- Next, practice sliding one ski forward and the other backwards.
- While gliding downhill, slowly lift tip up of one ski and balance on the other. Switch legs.
- Practice moving into a snowplow position for controlling speed on steeper hills. Gradually advance through bringing the tips of the skis closer together and splitting the tails apart. Distribute weight evenly on both skis.
- Practice the tuck position used when going down a hill without any turns. Hands on knees creates a stable downhill position.

Diagonal Stride: Use this stride on flat and easy uphill terrain in most conditions.

- Start with skis about foot length apart.
- Always start without poles. The key principles are to learn to weight shift and proper rhythm.
- Skier first bends quickly and then pushes off from one leg. (like a spring). Glide forward on the other leg as far as possible.
- Gliding leg then bends and pushes off.
- This sends the back leg forwards to become the gliding leg.
- Arm should move in opposite to, but in sync with the legs and should swing forward and backwards.



Technique:

- **The leg push off (kick)** is strong and forceful providing the momentum to propel the gliding leg forward.
- Push off starts when legs are together and ends when push leg leaves the snow.
- The push off (kick) is when the ball of the foot pushes first down, then back in one motion, then the tail of the ski lifts off the snow. At the same time the opposite ski glides forward and as the feet pass one another, the weight shifts onto the forward gliding ski. Knees are bent especially in the midpoint of the stride.
- The body leans forward but too much forward lean causes undue back strain.
- Hip, knee and ankle should all contribute to the leg push.
- The arms should move opposite to the legs and swing forwards and backwards.

The glide begins when the push leg has left the snow and ends when the legs come back together before the next stride begins.

After the push off, **the skier's weight** remains directly over the gliding ski until the skis meet in the middle again. At this point, the weight is exchanged to the other ski. With the next push off, the weight is completely shifted over and now over the new gliding foot.

Flex, push and glide!
Emphasize shifting
all the skier's weight
from one ski to the
other.

The arms provide up to 40% of the power during the strides.

Tips:

- When doing the diagonal stride, the skis are always moving.
- Look for proper rhythm and weight shift.
- It may take many sessions to get the proper technique as some skiers will take weeks to go from simply shuffling to getting some glide.
- If an athlete is not weight shifting and is shuffling with both skis weighted at once, start with walking on skis, then after a few metres, move to a slow run, then to the stride with a bit of glide. Repeating this will impress the feeling of unweighting and weighting each ski.
- Aggressive pushoff (kick) will result in some bouncing but try not to bob in the hips.
- Poles should be placed close to the ski and in the line ski direction.
- During the kick/push, look for full extension.



Pole Plant:

- Swing arms in a natural manner as if walking.
- With the natural swing the arm is bent at 90 degrees at the elbow at the beginning of the pole plant when the arm is extended forward, to increase power.
- The tip of the pole is planted beside the toe
- Thrust is created by straightening the elbow, until the poling hand passes the hip and then it is brought forward for another thrust.
- The pole strap should be tight enough so that most of the power comes from the weight of the wrist on the strap. The pole is held with thumb and index finger rather than full hand grip.

Double Pole Plant: Used on downhills and during very easy flat glides.

- Distribute weight equally over both skis.
- Elbows are bent a 90 degrees at the start of the pole plant, pole tips land beside the feet at the start of the thrust.
- Body is leaning forward slightly and knees are bent with weight mostly on poles. Use core muscles to bend at the waist and push poles back with shoulders and elbows until arms are extended behind the body and body is more upright. Quickly return to start position and prepare for the next pole plant.
- Avoid swinging the pole baskets forward past the feet on the return as it wastes energy.

Uphill: Skiers use the diagonal stride to move uphill but with adaptations.

- Increase tempo with a shorter stride and accentuated kick.
- The pushing feeling is increased and the weight shift from one ski to the other is more pronounced.
- Skier pushes their body weight from one ski to the other and up the hill.
- Arm actions will also be shorter as there is a more constant need to propel forward.
- Practice this skill by simply having athletes perform the normal diagonal stride and slowly head up successively steeper hills.

The Herringbone: This skill is used when the uphill is so steep that the skis cannot maintain a parallel position without slipping.

- Place skis so that the tips are spread apart, creating a “V” formation.
- Step one ski then the other.
- As the weight is fully on one ski, the other ski is placed farther up the slope.



- Push hard off the original ski to bring the ski up and land with the ski that is farther up the hill.
- Be sure to edge the ski into the snow to provide a stable base before pushing off. The steeper the hill, the more edging is required.
- Poles should be planted farther back and more out to the sides to provide propulsion.
- Trunk should remain mostly upright, leaning forward slightly.

Skating: Used on flat sections of the trail or on gradual uphill's, this demanding technique is for more advanced athletes who can glide on their skis. It requires skate skis which are waxed with glide wax from tip to tail and longer.

- Skier pushes off one ski which is edged into the snow and transfers weight to the other ski which they glide on.
- The gliding ski is kept flat until the momentum is almost over.
- Then, the skier uses that gliding ski to perform the next push by edging it into the snow and transferring the weight to the new gliding ski.
- There must be a complete weight transfer from ski to ski.
- Push leg is “spring-loaded” by bending at the knee and then providing a powerful extension.
- Body lines up in the direction of the gliding ski.
- The pushing ski is mainly out to the side while the gliding ski is mainly directed forward.





Fitness and Games

There are a variety of games that can be used to help increase the fitness levels of the athletes as well as teach the different skills used in cross-country skiing. Spend 10 min at the end of each practice having fun! Keep everyone moving if possible.

Fitness ideas:

- Race from one end to another, use a start turn to turn around at the end.
- Have a kick-glide contest to see who can glide the farthest.
- Race uphill doing the herringbone.
- Double pole uphill to see how far you can go before exhaustion.
- Race uphill doing side steps.
- Take off skis and race up and down hills, or on flat terrain.

Crazy Relays:

- Teams of three or less with one at one end of the track and two at the other end.
- The skiers waiting their turn are off the side of the track so that the incoming skier can ski through.
- Each person on the team has a different technique: one may be missing a ski or pole, or no poles. May need to pick up and dress with mitts or toque on the way, may have to ski backwards. Lots of possibilities!

Steal the Poles:

- Almost like musical chairs.
- Place poles (one less pole than players) in the snow about 50-75 feet away.
- Have athletes free ski around until a signal is given.
At this point, skiers must try to get to a pole.
- Whomever has no pole, is out.

Frostbite Tag:

- Identify an outlined area.
- Have one person be "it".
- If a skier is tagged, they are frozen until another player comes and touches them to free them.

Human Slalom:

- Line everyone up.
- First skier goes out about 10 m and stops.
- Next skier then skis around the first and stops 10 m further down.
- Continue this until the whole group has gone.
- See how far you can travel like this. For fitness, increase the speed



Practice Plan

Unstructured Free Play and Gear Check (10 min)

Prior to the practice athletes who have arrived early should be encouraged to participate in free play activities. During this time, coaches need to check to see that ski equipment and clothing are appropriate for the session. Having a safety plan is also important for all coaches.

Warm Up (10-12 min)

Warm up should start with a light jog to get the athletes' muscles working and heart pumping. Athletes should then gather to stretch, starting slowly and gradually involving all the muscles and body parts to be utilized in the exercise related instruction phase of the practice.

Basic Motor Skills (15-20 min)

Basic Motor Skills are defined as the very simplest movement skills (i.e. running, kicking, jumping, throwing, catching, etc). This phase starts with known content and progresses to the application of skill(s) resembling the game/competition, allowing athletes to fine-tune these basic skills to enhance the acquisition of sport skills. It should focus on one specific skill at a time. The combination of 2 or more skills will be encompassed in the next section.

Sport Specific Skills (15-20 min)

During this phase the athletes will combine several basic motor skills and practice the skills as demonstrated during the instruction. Emphasis should be placed on creating competition-like conditions (through game-like drills) during this phase.





Fitness (12-20 min)

This phase involved physical conditioning activities that are specific to the fitness needs of your sport. This is done by setting continual work/pause ratios (through circuits) for your athletes that stress the correct energy system(s). Fitness encompasses cardio, muscular strength, muscular endurance and flexibility.

Simulated Game (10-15 min)

During this phase athletes will compete in a competition-like setting to incorporate all the skills they have learned as well as the rules of the sport. Infractions should be called so that the athletes learn all aspects of the sport.

Cool Down (5-8 min)

Don't forget this portion. Cool downs are a vital part of a practice as they allow the heart rate to return to normal. Stretching should also be included at this time to prevent sore muscles the next day.

Evaluation/Tips (5-10 min)

Evaluation is used to assess the effectiveness of specific activities or the total practice. It is helpful to spend a few minutes with your athletes at the end of a practice to get some feedback on the practice session. It can take the form of a 5 minute rap session about things that went well and things that the athletes and/or coaches need to work on. The topics discussed can be built into the next week's practice. All around training should also encompass nutrition and/or mental training so it is important to discuss these items with your athletes as well.

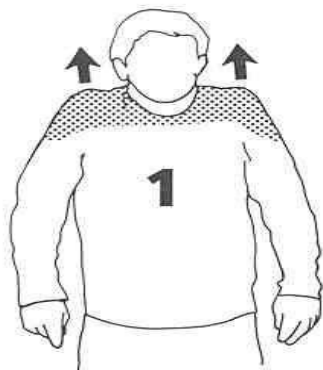
****NOTE:** for additional resources, go to www.specialolympics.bc.ca and click on Resources**



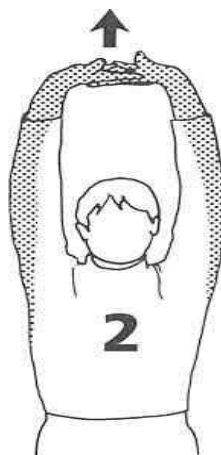
Before Skiing (Cross-Country)

Approximately 3 Minutes

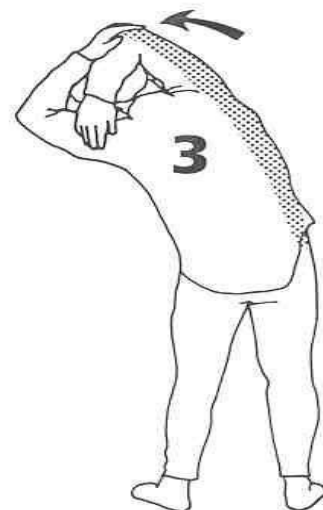
Warm up by walking for several minutes with a big arm swing before stretching.



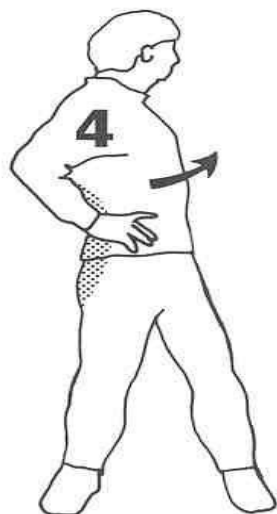
5 seconds
3 times
(page 46)



10 seconds
(page 46)



10 seconds
each side
(page 44)



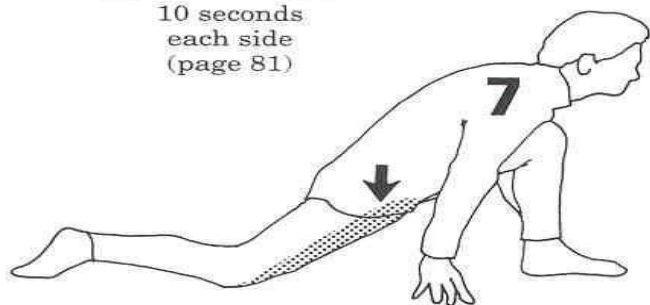
10 seconds
each side
(page 81)



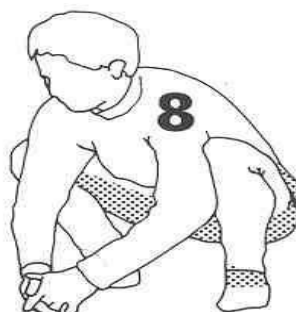
20–30 seconds
(page 55)



10–15 seconds
each leg
(page 75)



10–15 seconds
each leg
(page 51)



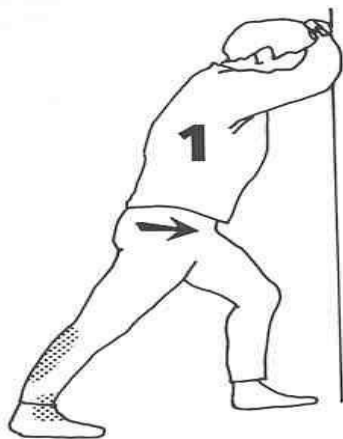
15–20 seconds
(page 65)

Short on time?
Do this mini-routine:
3, 4, 7, 8
Approx. 1½ minutes

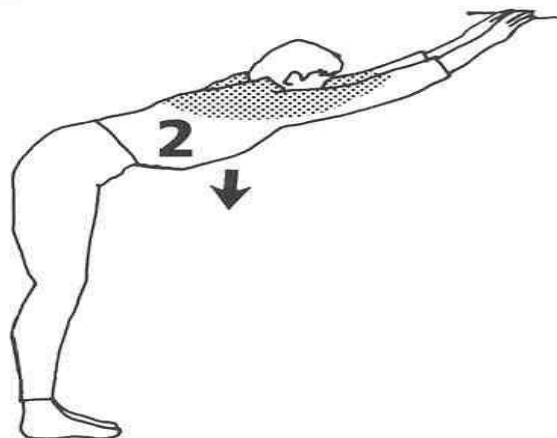


After Skiing (Cross-Country)

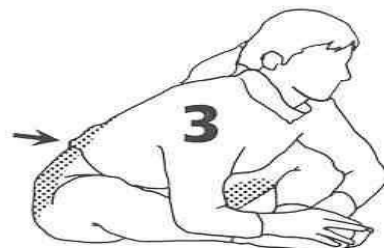
Approximately 4 Minutes



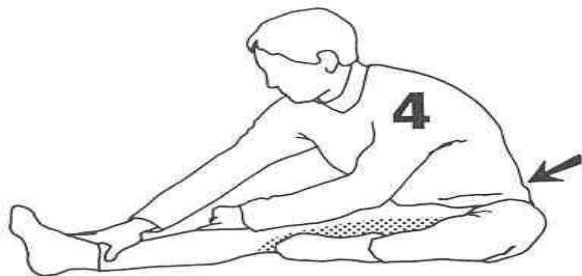
15–20 seconds
each leg
(page 71)



10–15 seconds
(page 81)



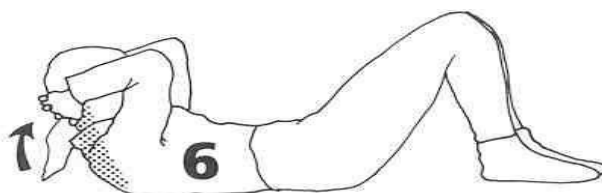
10–15 seconds
(page 58)



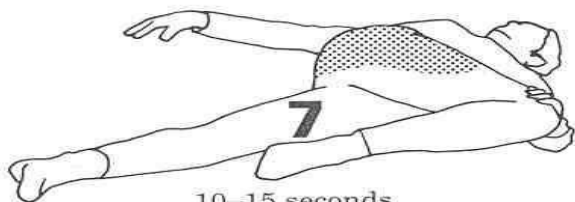
10–15 seconds
each leg
(page 39)



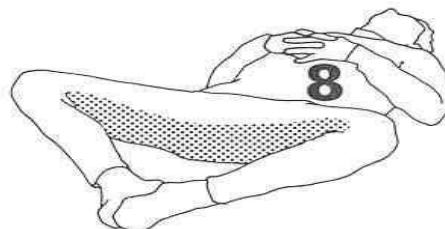
8–10 seconds
each side
(page 60)



3–5 seconds
2 times
(page 27)



10–15 seconds
each side
(page 32)



20–30 seconds
(page 26)

Short on time?
Do this mini-routine:
1, 3, 4, 5
Approx. 2 minutes