

CSU and EMBK Classic Progression and Drills

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These notes describe the basic classic progression and drills for skiers at all levels, including novices. The progression and drills draw heavily on various USST materials, with modifications and extensions for teaching novice and youth skiers, and benefit from the feedback of numerous coaches and skiers.

Core Classic Progression

A. Without skis or poles (dryland component of progression)

1. Stand in basic athletic position (BAP) (“keeper” position, tennis ready position):
 - Shin and back are parallel.
 - Pelvis neutral (as in the start of a crunch)
 - Ankles and knees bent
 - Shoulders relaxed and rounded.
2. **Falling Forward Drill**
 - Pair off the athletes. Have one athlete act as the catcher for the other.
 - From the BAP, the athlete falls forward from the ankles. The catcher catches the faller, pauses and holds, then pushes athlete back to a standing position.
 - Coach checks for body position. Heels stay flat on the ground, athlete should feel calf muscle stretch, pinch at ankles – all forward position comes from ankle bend, not waist bend.
3. Falling forward alone.
 - Without partner, start to fall forward and catch yourself – barely – by moving foot forward just enough.
 - Forward fall should come entirely from ankles.
4. **Shuffle Drill (“Nerd Walk”)**
 - Fall forward from the ankles (no waist bend) and catch yourself by shuffling your foot forward. Keep shuffling your feet using just the forward position to propel you forward (i.e. not walking/stepping). Keep hands on your hips.

5. BAP with arm swing
 - Swing arms easily. Relax shoulders and let the arm be loose in the socket, but do not rotate shoulders around the spine. Hands and fingers should be loose and relaxed.
 - Hands should come higher than the face in front. Be sure that the elbows come high enough that there is a 90° angle of upper arm away from the body, and a 90° elbow bend.
 - Cue: Can you see your wrist to the side of your face?
 - Try swinging arms faster with more vigor (“throw water down the track”), but stay relaxed.
6. Arm and leg swing
 - Assume BAP stance. Swing one leg about 15 times. Try the other leg.
 - Swing arms easily again, and now swing one leg forward at the same time that the opposite hand comes forward. Try the other leg.
7. Arm and leg swing with hop (optional – not for beginners)
 - Swing arms and one leg in classic rhythm. As the swinging leg comes backward, take a hop on the standing leg.
8. Linked diagonal
 - Do the arm swing and forward step with a pause in the resulting position. Continue striding with a pause.
 - Focus on combining this with forward position/ bend from ankles/flat foot from the shuffle – the forward movement should be propelled by forward position and arm swing, not “stepping ahead.”

B. On skis without poles

9. Shuffle on snow – same as without skis, hands on hips, proper body position (BAP)
10. Shuffle with arm swing. Arm swing should be very low power, loose and relaxed. Focus on stable upper body position, forward position from ankles.
11. **Scooter Drill (a): single stride**

The scooter drill sequence is a great way to teach weight transfer because the athlete has no choice but to make a total commitment. The scooter drill must be mastered before any other drill will be of value, and it should be returned to by skiers at all levels.

 - Put on just one ski – one ski in track, ski-less foot outside of track.
 - Assume a good classic position with the ski-less foot forward and the opposite hand raised. Make sure the athlete is in a good body position.
 - All weight should be on the foot in the snow (cue: the soon-to-be glide ski can be initially held a couple of inches in the air (with relaxed knee, not locked).

- The skier then kicks forward onto the ski and glides down the track while holding the non-glide ski (ski-less foot) in the air. Hold the glide as long as possible! The point of the drill is complete weight transfer with hips over glide foot and shoulders over hips.
- Put the foot down, come to complete stop, reposition, repeat.

12. Scooter Drill (b): linked strides, single ski

- Link scooter drills by taking push-off strides without coming to a pause.
- The glide phase should be held for a long time – there must be complete weight transfer.
- Hips over glide ski, shoulders over hips. Hips forward (“up”).
- If glide cannot be held, weight transfer is incomplete, so return to single-stride scooter drill.
- Once mastered on one side, switch skis and repeat full sequence

13. Scooter Drill (c): asymmetric linked strides, both skis

- With both skis on and in the tracks, repeat the movements of the linked-stride scooter drill. The result should be a highly asymmetric stride, only kicking from one foot. The feeling should be nearly the same as the single-ski linked stride scooter drill.
- Hold the glide!
- Once mastered, switch the pretend “ski-less foot.”

14. No-poles striding

This is effectively done immediately following the scooter drill or can be done alone.

- Body position should be forward from ankle, striding off flat foot, back and shin parallel, not bend at waist.
- Work on long glides and the “hold the glide” feeling.
- Variations/extensions:
 - Do on a gradual downhill, lengthening the glide phase. Aim here is complete weight transfer and balance.
 - Do on a gradual uphill, increasing the tempo. Aim here is setting the wax (knee pop), striding off a flat foot, and full weight transfer at a higher tempo.
 - Hips: focus on hips opening up so that hips rotate as the weight comes over the glide ski: hip rotation as weight transfer and as method of extending the kick. This is best done on level terrain.
 - Arms: swing up to face height
 - Add in knee pop and compression

C. On skis with poles

15. Practice arm swing without poles – progression #5 above, but standing on skis. Focus on relaxed swing from shoulders, hands coming up to face height, and throwing water down the track (no lateral motion).

16. Striding with poles

- Add poles, no power, with quick enough tempo that skier goes from one forward fall to the next.
- Plant pole at binding (or behind binding).
- Hands should be swinging up to chin height.
- Variations/extensions:
 - ski up hill with poles – focus on forward positions and minimal arm effort – don't pull yourself up the hill. Initially in this progression all power should be coming from legs (forward position).
 - Add power. Keep tempo high by focusing on quick arm movements.
- If there is inadequate weight transfer or a forward step (“walking”), abandon poles and revert to long-glide no-poles skiing or scooter drill.

17. Double pole: no poles

90% of DP power comes from the first 10% of the poling motion.

- (optional) Start by doing crunches on the ground – feel abs compression, arm swing coordinated with abs, hips necessarily staying forward.
- Practice DP motion without poles:
 - Raise hands high in front of face on upward swing.
 - Don't let hands swing too far back behind hips on downward swing.
 - Don't hinge at the waist and bend over.
 - The weight should rock forward onto the toes as the arms swing up and gently back onto the heels (but without sitting down) as the arms swing down past the thighs.

18. Locked and Loaded Drill (“Robot Drill”)

- Assume the high-hands position at the top of V2 poling motion. (A good mnemonic is to say “Put your hat on.” The motion of pulling on a ski hat puts the hands and arms in the correct spot). Then, the position is locked. No arm or waist movement is allowed!
- The skier falls forward onto the poles (the load part) and pulls himself forward using only the abs. Many skiers tend to cheat and use their arms quite a bit – the coach must emphasize that the arms and shoulders are frozen in place. If done properly the athlete will really feel the abs, and especially the lower abs, pulling the hips under him. If done properly, speed over snow is quite slow because of zero shoulder/arm/waist follow-through.
- Cue: Pull your bellybutton up to your nose (good for keeping skiers from sticking out their butts)

19. Double pole

- Assume good double pole position:
 - Arms are bent at elbow so that forearm is almost parallel to the pole.
 - Upper arms are raised high so that there is clear space between arm and body when seen from the side.
 - Shoulders are relaxed and raised up.

- Do full double-pole:
 - The poling motion is initiated by contraction of the abdominal muscles which provide the bulk of the power. Additional power comes from the lat muscles. The triceps help, but do the least work.
 - Use a rapid upward swing of the arms to pull the hips up.
 - Arms come up with approximately 90° elbow bend.
 - Start with low power, slowly add power. At power, poling should be crisp with high tempo.
- Avoid bend at waist (“bow”), avoid sitting down, don’t stick your butt out when compressing onto the poles, don’t let arms swing too far behind body. Remember the DP power is applied ahead of you not behind (pull, not push)
- Cues:
 - Think of springs on your thighs that make your arms rebound with a really rapid and powerful upward swing.
 - Hands at face level, shoulder width apart
 - As you come up and forward, your heels rise naturally – not jumping up in the air, but out so that you fall forward onto your poles

20. Double pole-kick

- Without skis: working on timing – mimic the instructor, first one ski, then the other – coordinate arm and leg swings.
- Put on skis and do DP-kick. Key is to get the timing, if they aren’t getting the timing do it without moving. Avoid deep waist bend (no deep bow)
- Once the timing is correct and the motion is fluid, add power in both directions – pop up hands as they go forward (this drives down power foot and gives kick power), then work on crunch version of DP (but this will naturally be a bit deeper with DP-kick than with straight DP).

Dryland Drills

Kick Impulse (Knee-pop) Drill

Stand in basic classic striding position. Give a quick impulse to the knee to kick the foot downward. The entire foot should kick down. Mastering this “pop” is essential to getting good kick when on snow.

Classic Hop Up Drill

This is an advanced drill only for better skiers. Assume a classic gliding position with all weight on one foot, the other leg extended back, and the opposite hand from the weighted foot up high. Slightly push back the extended leg (“cock the gun”) and then jump explosively forward and land in the same position on the other leg. Once mastered on the flat, then do it jumping up onto a bench, log, or rock. Insufficient weight transfer onto the forward leg will make the skier fall

backwards. If the skier really moves the whole body forward they will spring up onto the bench and land in good position.

Linked Diagonal with Kick Impulse

Combine the Linked Diagonal drill with the Kick Impulse.

Ski Walking

A great training activity for endurance, or for intensity, and always for technique is ski walking. Coaches should watch to be sure that the athlete is not overstriding and sitting back.

Spent

Classic style bounds of 20 to 30 seconds develop explosive power with ski-specific motion.

Hill-bounding

Interval workouts of 3 to 8 minutes doing ski imitation with a good pop in the kick and using short poles to involve the arms is excellent training.

Fire Your Guns Drill

Assume a relaxed stance. Put your hands on imaginary six-guns at your side. “Draw you varmit!” When you draw your guns you naturally pull your pelvis under you. This neutral pelvis position is the one we want to maintain when striding. The USST uses the image of the pelvic saddle being a bowl of water that should not spill out the front but be held level by the athlete.

Cue: Fire your guns.

Another way to get the athlete to feel the hip tilting forward is to hold your hand or a pole just out of reach above them and ask them to reach up and touch it – force them to really reach. Their hip will tilt forward and they should henceforth be able to recognize that feeling.

On Snow No-Pole Drills

One Foot Balance Drill

Put on just one ski. On a small, gradual downhill glide down the hill balancing on just one foot. Do a few times and then switch the ski to the other foot. The skier

must be able to balance on one foot on a moving ski if he or she is going to be able to ski with proper technique.

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Boxer Drill

Do the shuffle motion, but bring the hands up in front of your face. As you step onto your right foot punch up with your left hand. As you step onto your left foot, punch up with your right hand. You should look like a boxer throwing uppercuts. Emphasize the timing of the upward punch of the arms initiating the movement of the body forward onto the ski. Then smooth out the motion. Continue to drive with the arms, but with a more natural swing like you used in the arm swinging drill. Concentrate on timing and “arm throw” more than power or glide.

Ride the Glide Drill

Ski easily without poles. On every third stride hold the glide for a count of two. This drill will improve balance and glide length of the stride.

Hip Roll Drill

Stand straight up on the skis. Lock your knees. Take tiny steps forward merely by rotating your hips. This will loosen the hips so they are not locked in place.

Lower Leg Drill

Ski along using only your legs from the knees down. Keep your thighs even. Just feel your lower leg scoot forward and push back.

Knee Snap Drill

Ski with a normal stride, but concentrate on snapping back your knee to straighten out your leg. This is excellent for curing the bicycling motion some skiers have.

Knee Pop Drill

Ski with a normal stride while emphasizing the knee pop. This is particularly useful when done on a gradual downhill where the only way to get any kick is with a good pop.

Try skiing easily again. Focus on:

- Deep ankle bend
- Steady balance with good forward body position
- Neutral pelvis
- Rotation of the hip. Bring the hip up to meet the descending hand
- Quick downward kick
- Kicking with the whole foot
- Snapping the knee back
- Easy and rhythmic arm swing with high hands and elbows

Poling Drills

Ab Pole Drill

Stand on skis with poles planted comfortably in front. Try to move skis forward by just pulling up with the lower abs. Skiers will at first use their arms or jerk their bodies. If they concentrate and practice they should be able to feel just their abdominal muscles and pull their skis forward with those muscles only.

No-pole Double-pole Drill

To get the lower body and core moving correctly in the double-pole a good drill is to take off the poles and try double-poling on the flat. By pulling the skis under the body on the downward pole the skier can get forward motion! Try a short no-pole double pole race.

Additional On-Snow Drills

Running Drill

Set out two markers (poles or cones) 10m apart on a moderate hill. Start by striding to first marker. At first marker switch to high-tempo running – as in regular foot running. At second marker switch back to skiing/striding. In running athletes will naturally be upright with forward lean from the ankles. After the running section they should naturally be more forward on the skis. The hard part is getting them to really run (no glide) and not just shuffle.

Skipping Drill

Have athletes practice skipping without skis or poles. Then, with skis and poles, have them try to add a little hop into their stride. The athlete glides out onto the forward ski as normal, and then does a small hop to initiate the kick. After doing this drill be sure to have the skiers try skiing normally so they can incorporate the downward punch into their stride.

High power no-poles striding

Develop drill/games that aim at fast striding (sprinting) without poles – striding not foot-running. This helps the skier get into the right body position. Examples include: no-poles relay race; wolves and reindeer (small group so they must ski quickly), linear tag (one skier gets a 5 foot headstart in parallel tracks, can the other skier tag him/her?), head-to-head races (two skiers skiing classic in parallel tracks).

Double Pole-Kick Drill

Practice kick double pole. First see that skiers have mastered the basic timing and are alternating their kick foot. A quick upward motion of the arms will help the skier have a quick snap to their kick. Slide the returning foot back very quickly. If skiers have mastered the basic motion, then work on having them slide their foot forward just before they kick. It's a difficult move and will take time to master.

Transitions

Junior skiers can gain time with smoother transitions between the three basic techniques. In slow motion demonstrate how the recovery from one technique leads into another technique with no loss of momentum or rhythm. For example after the double pole in a kick-double-pole the skier comes back up with just one arm and one foot to initiate the diagonal stride. Find suitable terrain and have each skier practice each transition.