



SkillsQuest Skiing Assessment



TABLE OF CONTENTS

INTRODUCTION	3
PHASE 2 EXERCISES	7
PHASE 3 EXERCISES	11
PHASE 4 EXERCISES	15
PHASE 5 EXERCISES	19
PHASE 6 EXERCISES	23
SCORING TABLE	28

CREDITS

The SkillsQuest program is produced by the High Performance Department of the U.S. Ski and Snowboard Association.

SkillsQuest Working Group: Jon Nolting, Ron Kipp, Lester Keller, Patrick Riml, Walt Evans, Troy Flanagan, Kirk Dwyer, Deb Armstrong and Todd Brickson.

Other contributors and reviewers included: Sasha Rearick, Alex Hoedlmoser, Randy Pelkey, Seth McCadam, Brewster McVicker, Darlene Nolting, Gwynn Watkins, Karin Harjo, Michael Rogan, Ellen Foster, Stacey Gerrish, Sue Schwartz, Dave Lyon and Anna Hosmer.



INTRODUCTION

The objective of the SkillsQuest skiing skills assessment is to promote skills as a basis of technique by providing a resource where fundamental skills can be taught, measured and tracked over time with a rewards system that motivates young athletes to improve their skills. It is built on a progressive battery of drills covering each of the fundamental skills in skiing that are appropriate developmentally based on age and experience in sport. By working toward mastery in their phase of SkillsQuest (based on their developmental phase as outlined in the Alpine Training System), skiers will acquire the necessary skills to gain speed on the race course for the long-term.

The drills are organized by developmental phase, with a drill emphasizing each of the four primary skiing skill areas - pressure, edging, rotary and balance - as part of the assessment for the particular phase. This structure makes it easy for coach and athlete to identify relative strengths and weaknesses in the key skiing skills areas. Additionally, the drills across each row are all related, getting progressively more challenging as the developmental phase of the athlete increases. This allows athletes to continually work toward achievement while experiencing successes along the way.

SKILLSQUEST ASSESSMENT TABLE

Skill	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
<i>Pressure</i>	Pole jumpers	Pole jumpers in tuck	Straight run in wave track	Linked turns in wave track	Camel jump in wave track
<i>Edging</i>	Outside ski turns	One ski skiing	One ski skiing with lane changes	One ski skiing without poles	One ski skiing hourglass
<i>Rotary</i>	Straight run to side slip with edge set	Pivot slips	Sideslip to straight run to sideslip	Hop turns	Vertical brush quickness course
<i>Balance</i>	Freeski with pole usage	Freeski – lane changes	Freeski – hourglass	Freeski – varied terrain and snow conditions	Freeski – moguls in “V” shaped corridor



DEVELOPMENTAL PHASES

The exercises to be used for evaluation should be chosen based on the skier's developmental phase from the Alpine Training System as outlined on the next page. (There are no SkillsQuest assessment exercises for phase 1.)

Phase 2 | Ages 6-10 | 1-4 years skiing

Designed for U10 and younger ski racers to evaluate a starting point in each skill area.

Phase 3 | Girls ages 10-13, boys ages 11-14 | 4-8 years skiing

Designed generally for U12/U14 based on years in skiing and biological age. Phase 3 is for pre-pubertal skiers (before the growth spurt).

Phase 4 | Girls ages 11-14, boys ages 12-15 | 5-9 years skiing

Designed generally for U14/U16 based on years in skiing and biological age. Phase 4 is for skiers who are in their growth spurt.

Phase 5 | Girls ages 12-16, boys ages 14-17 | 6-11 years skiing

Designed generally for U16/18 based on years in skiing and biological age. Phase 5 is for skiers who are post-puberty (after their growth spurt).

Phase 6 | Girls ages 16 and older, boys ages 17 and older | 10 or more years skiing

Designed generally for U18/U21 and older based on years in skiing and biological age. Phase 6 is for skiers who are fully mature and have at least ten years of racing experience.

USING THE ASSESSMENT

First, the coach should determine the developmental phase of the athlete(s). Use the drills for their phase, and work toward mastery in those drills. Using the test scoring protocol, evaluate where the athletes strengths and weaknesses are. Then use a variety of exercises and progressions to work on the skill areas where the skiers are deficient. While the drills in each column represent a complete set of skills for evaluation, practicing only these drills will not lead to the overall skill development that is desired. There is a difference between testing and training. Using this assessment should inspire focused training designed to improve skiing skills.





DESCRIPTION OF EXERCISES FOR PARTICIPANTS

Before the assessment, the athletes should be given a chance to view the videos of the test found on the SkillsQuest webpages and on Center of Excellence TV. At the start, the tester should read the description and the criteria for perfect execution. For phases 2 and 3, the kid-friendly instructions should be read instead. After the explanation, a quality demonstration will also be helpful.

TERRAIN SELECTION

Proper terrain selection is an essential factor for consistency of scoring and the athlete's ability and expectation to perform the exercise to a level of mastery. While many of the exercises may be carried out on different terrain than is prescribed within a drill progression, for the assessment, the terrain must meet the slope specifications on the exercise descriptions.

While it is difficult to use terms that are consistent throughout the U.S., the following are explanations of the slope and terrain terms used in the assessment protocol.

BEGINNER – green trails, very gradual pitch

EASY INTERMEDIATE – steeper sections on green trails or flatter sections on blue trails, some pitch but speed can be easily controlled

INTERMEDIATE – blue trails with greater pitch allowing for more speed

EXPERT – black trails, equivalent to the steep portions of most race hills, groomed, ungroomed, or with moguls as noted

SCORING

SkillsQuest is scored on a 10 point scale. Each exercise has a specific set of scoring markers that identify the important performance aspects and relative deductions for any faults. The scorer should focus on whether the skier performs the skill and task to a high level relative to their developmental phase. For example, a Phase 3 athlete will be scored according to what the best 10-13 year old girl of 11-14 year old boy that



has been skiing 4-8 years would be perceived to achieve. The tests are designed such that the most skilled skiers in each phase should be capable of earning a perfect score of 10. Using the scoring



scale on the last page, evaluating both task and skill execution, along with the scoring points listed for each exercise will help the coach arrive at the skier's score.

Based on their score, skiers may earn gold, silver or bronze designations. These allow the skiers at all levels to set goals for personal achievement.

Bronze: Scores between 4.00 and 5.99

Silver: Scores between 6.00 and 7.99

Gold: Scores between 8.00 and 10

ATHLETE EQUIPMENT

The athlete may choose what skis to use for the assessments. Helmets must be worn while participating in the SkillsQuest Skiing Assessment.

FOR MORE INFORMATION

Visit the SkillsQuest webpage at www.ussa.org (search "SkillsQuest"), or email skillsquest@ussa.org.





Pole jumpers

Objective: To clear a series of poles placed on the ground at 90 degrees to the skier's direction of travel.

Primary Skill: Pressure

Justification: Pressure along the fore/aft axis of the ski as a primary area of reference is important to the emerging ski racer. Clearing a series of poles while maintaining a straight path down the hill is only possible if the skier has fore/aft pressure control skills.

Slope: Beginner groomed terrain that is even from side to side, without sidehill or fall-away.

Set-up: Eight poles are laid flat on the ground at 90 degrees across the fall-line at eight meter spacing. The poles can be secured or unsecured to the snow surface. The start is 12 meters above the first pole and the finish is 12 meters below the last pole.

Description:

- Ski in a straight run down the fall-line
- Skier jumps once to clear each pole in the snow

Criteria for perfect execution:

- Skier maintains a straight path down the fall-line
- Equal distance is maintained between both skis and knees
- Jump off both feet simultaneously
- Land on both feet simultaneously
- Skis do not touch poles
- Economy of movement from the jumping skier

KID-FRIENDLY START INSTRUCTIONS:

- Ski straight down the hill
- Jump over the poles without your skis touching the poles
- Keep your skis and knees the same distance apart even when you jump and land
- Jump and land with both feet at the same time
- Jump from your legs, keeping the rest of your body quiet

Scoring:

Starting with a perfect score of 10, subtract up to:

- 2 points for not maintaining straight run down the fall-line
- 1 point every time skis touch a pole
- 1 point for every jump or landing not on both feet simultaneously
- 1 point for a widening or narrowing of stance
- 1 point for not maintaining flat skis on the snow
- 1 point every time skier uses their upper body to assist in jumping
- 1 point for extra leg flexion or pump between each jump



Outside ski turns

Objective: To ski solely on the outside ski prior to, during and after the ski turn during medium radius highly carved turns connected with a traverse on one ski.

Primary Skill: Edging

Justification: The ability to ski on the outside ski is essential to optimally maintain balance against extreme external forces created by tight turn radii and high speeds. Without an inside ski to assist with lateral balance and regulate pressure the ski racer is limited to their options with regards to what they can do with the ski.

Slope: Easy intermediate groomed terrain.

Description:

- Skier makes eight carved GS radius turns with weight entirely on the outside ski
- The inside ski is kept entirely off the snow during the turn
- Skier concludes turn by remaining on the old outside ski for two ski lengths
- Skier will make an identifiable weight transfer
- Skier will initiate the new turn after a traverse of two ski lengths on the uphill (new outside) ski
- Pole may only be used to swing and touch the snow, not for balance support against the snow

Criteria for perfect execution:

- Inside ski carried off the snow 100% of the time
- A deliberate weight transfer can be identified when the skier transfers pressure to the new outside ski
- Prior to the turn, the new outside ski is skied for two ski lengths to indicate balance is solely on the new outside ski
- After turn completion the outside ski is skied for two ski lengths to indicate balance is still 100% outside ski dominant
- Turns are mainly carved
- Speed is consistent throughout entire maneuver
- Turn shape is relatively round
- Ski poles are kept off the snow except if used for a pole plant

KID-FRIENDLY START INSTRUCTIONS:

- Ski eight round, carved GS turns with all of your weight on your outside ski
- Lift the inside ski off the snow for the whole turn
- Between turns, step onto the uphill ski and lift the downhill as you traverse before you start into the turn
- Your poles are only used for pole plants, do not drag them or use them for balance
- Your speed is the same for all of the turns

Scoring:

Starting with a perfect score of 10, subtract up to:

- 1 point for every 10% of the drill cycle the inside ski is not carried off the snow. For example, if the inside ski is on the snow for 30% of the drill cycle then deduct 3 points
- 1 point for every 10% of the drill cycle that the pole may be assisting balance. For example, if the pole dragged for 30% of the drill cycle then deduct 3 points
- 1 point for every turn that does not end or start with a deliberate and observable weight transfer
- 1 point for less than a two ski length traverse on the uphill ski
- 1 point for every turn that is not of a high degree of carving
- 1 point for every non-round turn shape



Straight run to sideslip with edge set

Objective: To go straight down the fall-line then rotate both skis simultaneously until skis are perpendicular to fall-line to sideslip and finish with an edge set and pole plant.

Primary Skill: Rotary

Justification: Rotation of the ski is used in many ways. When combined with the skill of edging in one drill it makes this very ski-specific. It is similar to the rotary and edging demands involved with a steered turn entry to a carved completion.

Slope: Easy intermediate groomed terrain with a consistent fall-line.

Set-up: Using Whiskers placed every three meters lay out a .75 meter corridor 15 meters long in the fall-line. A finish, 1.75 meters in width is placed eight meters after the last set of Whiskers such that it centered with the previous corridor.

Description:

- Skier starts at the first Whiskers in a straight run down the fall-line
- Skis remain hip width
- After 15 meters in a straight run, both skis are pivoted across the fall-line
- Skier will maintain a sideslip for 6 meters in a corridor
- The skier stops with an edge set timed with the pole plant and holds stopped position for 3 seconds
- The test is performed with a stop in each direction

KID-FRIENDLY START INSTRUCTIONS:

- Ski straight down the hill to get up to speed
- Then quickly pivot your skis to turn them across the hill, turning both feet sideways at the same time
- Continue slipping sideways straight down the hill
- Stop by setting your edges and planting your downhill pole
- Hold still for 3 seconds
- Keep your skis hip-width apart the whole time
- Then do the same drill turning your skis in the other direction

Criteria for perfect execution:

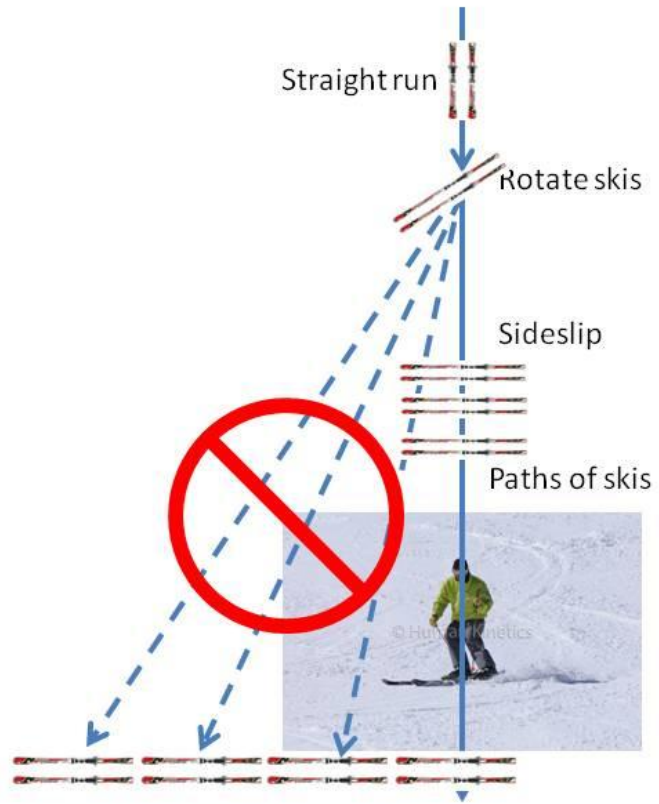
- Direction of travel does not deviate from fall-line
- Hip width stance in all phases of the drill
- Skis are pivoted simultaneously
- Skier remains in a ski width corridor
- Pole touch coincides with edge set

Scoring:

Total score is the average of the left and right scores.

Starting with a perfect score of 10, subtract up to:

- 5 points for stepping or sequential movement to pivot
- 1 point for every ski length outside the desired sideslip corridor throughout the task
- 1 point for not coinciding pole touch with edge set
- 1 point for not maintaining edge set and quiet posture for 3 seconds at conclusion





Freeski with pole usage

Objective: To ski GS radius turns with pole usage.

Primary Skill: Balance

Justification: To combine the skills of *rotary*, *edging*, and *pressure*.

Slope: Easy intermediate groomed terrain.

Description:

- The skier skis eight GS radius turns
- The skier times their pole swing with the edge release while their center-of-mass moves into the new turn

START INSTRUCTIONS FOR ATHLETE:

- Ski eight carved, round GS turns with a pole plant between turns
- Try to ski fast but with good balance

Criteria for perfect execution:

- Balance is maintained in all three planes
- Linked round turns such that speed is maintained throughout
- The skis show a high degree of carving
- A pole swing coincides with edge release and center-of-mass movement into new turn

Scoring:

Starting with a perfect score of 10, subtract up to:

- 2 points for every instance of balance that requires a drastic correction
- 1 point for every turn that is not round
- ½ point for every turn where speed is not maintained
- ½ point for every turn that does not have a high degree of carving
- ½ point for every missed pole swing

Pole jumpers in tuck

Objective: To jump while maintaining a tuck and clear a series of poles placed at 90 degrees to the skier's direction of travel.

Primary Skill: Pressure

Justification: Adjusting pressure under the foot and along the fore/aft axis of the ski is a critical component of balance. Clearing a series of poles while maintaining a straight path down the hill is accomplished with a take-off, flight and landing each having specific pressure control solutions. The ability to maintain a tuck while having an independent lower body capable of performing proficient jumps demonstrates independence and is used for aerodynamics.

Slope: Beginner groomed terrain that is even from side to side, without sidehill or fall-away.

Set-up: Eight poles are laid at 90 degrees across the fall-line at 8 meter spacing. The poles can be secured or unsecured to the snow surface. The start is 12 meters above the first pole and the finish is 12 meters below the last pole.

Description:

- Ski in a straight run down the fall-line in a tuck position
- Skier jumps once to clear each pole in the snow
- Tuck position is between a high and low tuck

Criteria for perfect execution:

- Skier maintains a straight path down the fall-line
- Skier maintains a tuck position such that if the skier were to pull their elbows back without moving their shoulders or hips, their elbows would touch some part of their thighs, with elbows no wider than the knees
- Equal distance maintained between both skis and knees
- Jump off and land on both feet simultaneously
- Skis do not touch poles
- Economy of movement from the jumping skier

Scoring:

Starting with a perfect score of 10, subtract up to:

- 2 points for not maintaining straight run down fall-line
- 1 point every time skis touch a pole
- 1 point for a widening or narrowing of stance
- 1 point for not maintaining flat skis on the snow
- 1 point for every jump or landing not on both feet simultaneously
- 1 point every time skier uses their upper body to assist in jumping or landing
- 1 point for extra leg flexion or pump between each jump
- 1 point for elbows wider than the knees
- 1 point for every jump that is out of the prescribed tuck range

KID-FRIENDLY START INSTRUCTIONS:

- Ski straight down the hill in a tuck
- Jump over the poles without your skis touching the poles
- Keep your skis and knees the same distance apart
- Jump and land with both feet at the same time
- Jump from your legs, keeping the rest of your body quiet
- Stay between a high and low tuck – if you moved just your elbows back, they should touch somewhere on your thigh
- Your elbows should not be wider apart than your knees





PHASE 3

Girls Ages 10-13, Boys Ages 11-14
4-8 years in sport

Objective: To ski solely on one ski connecting medium radius turns (15-18m turn apex to turn apex).

Primary Skill: Edging

Justification: The ability to adjust pressure fore and aft as well as regulate pressure through the transition and turn are essential for ski racing. Having one ski eliminates the balance advantage of being able to move from foot to foot and demands that the ski racer adjust their center-of-mass from one ski only.

Slope: Intermediate groomed terrain.

Description:

- Skier wears one ski
- Make eight linked medium radius (15-18m) turns
- Foot without ski is held completely off the snow and maintains a non-swinging position
- Skier will demonstrate right and left leg

Criteria for perfect execution:

- Free ski boot never touches the snow
- Free ski boot is not used for balance adjustment
- Speed is consistent throughout entire maneuver
- Turns are relatively round, carved, and of consistent radius
- Ski poles are not used inappropriately for balance

KID-FRIENDLY START INSTRUCTIONS:

- Ski on one ski for eight medium size turns, with the other ski off
- Do not touch your free boot on the snow or swing your foot
- Turns are round, carved, and the same size
- Keep your speed up through all the turns
- You may plant your pole to turn, but do not drag your poles or use them for balance
- Switch legs and repeat

Scoring:

Total score is the average of the left and right scores.

Starting with a perfect score of 10, subtract up to:

- 1 point for every time the ski boot touches the snow
- 1 point for every 10% of the drill cycle that the pole may be assisting balance (e.g., if the pole was dragged for 30% of the drill cycle then deduct 3 points)
- 1 point for every non-round turn
- 1 point for every non-carved turn
- 1 point for every turn that results in a change of radius
- 1 point for each turn that has a change in speed
- ½ point for every swing of the free ski boot

Objective: To go straight down the fall-line and be able to rotate both skis simultaneously in each direction until skis are perpendicular to the fall-line with sideslips between pivots while not losing excessive speed.

Primary Skill: Rotary

Justification: Upper body and lower body separation demonstrated by rotation of the skis while maintaining a quiet upper body in space is essential for efficient ski racing.

Slope: Intermediate groomed terrain with a consistent fall-line.

Description:

- Skier starts in a straight run down the fall-line
- Skis are maintained at hip width throughout the drill
- Skier travels 15 meters then pivots both skis across the fall-line
- Skier sideslips for six meters in a corridor down the fall-line, then pivots both skis in the opposite direction into a sideslip down the fall-line for another six meters
- Drill is concluded after the fourth sideslip, with an edge set that is timed with a pole plant and holds a stopped position for 3 seconds

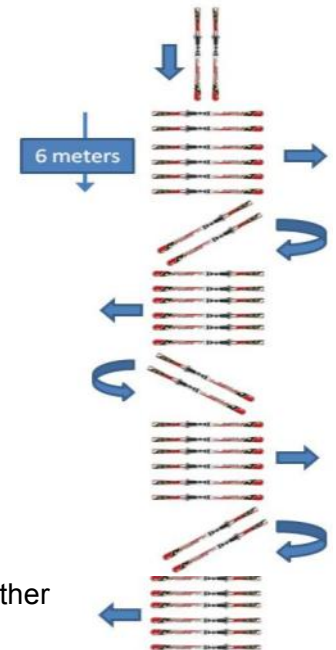
Criteria for perfect execution:

- Skier stays within a ski-width corridor without deviation from the fall-line through entire drill
- Skis are pivoted simultaneously
- Hip width stance in all phases of the drill
- Skier loses a minimal amount of speed during the sideslips
- Pole plant coincides with edge set at conclusion of drill

Scoring:

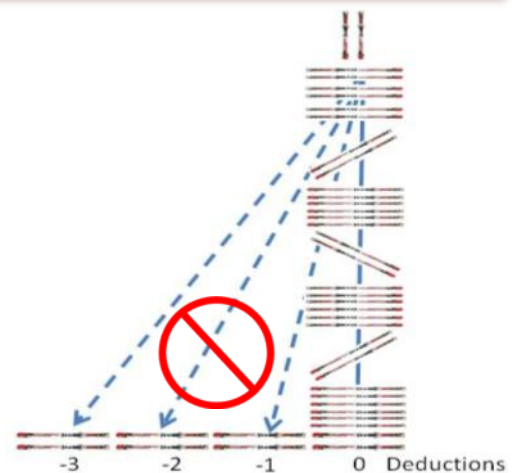
Starting with a perfect score of 10, subtract up to:

- 5 points for stepping or sequential movement to pivot
- 1 point for every ski length outside the desired sideslip corridor throughout the task
- 1 point for not coinciding pole touch with edge set at conclusion
- 1 point for not maintaining edge set and quiet posture for 3 seconds at conclusion



KID-FRIENDLY START INSTRUCTIONS:

- Ski straight down the hill to get up to speed
- Then quickly pivot your skis to turn them across the hill, turning both feet sideways at the same time
- Slip sideways straight down the hill, trying not to lose much speed
- Quickly pivot your skis to turn them across the hill in the other direction followed by another sideslip
- You'll do four sideslips in all, two to each side
- Try not to lose much speed and stay in a straight line down the hill the whole time
- Keep your skis hip-width apart the whole time
- After the fourth sideslip, stop by setting your edges and planting your downhill pole
- Hold still for 3 seconds



Freeski – lane changes

Objective: To ski with an established rhythm and turn shape, then break that rhythm and re-create the same rhythm and turn shape in a new fall-line.

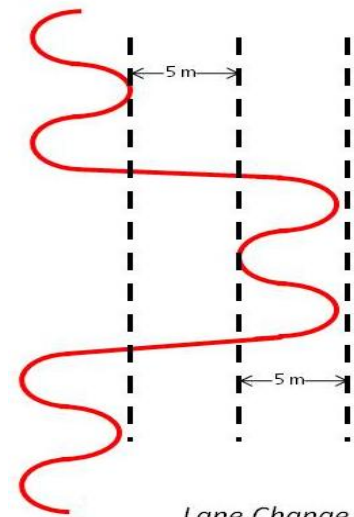
Primary Skill: Balance

Justification: To combine the skills of *rotary*, *edging*, and *pressure*.

Slope: Intermediate groomed terrain.

Description:

- Skier skis three turns in the fall-line of even size, rhythm and speed in a 5 meter wide corridor, then traverses across another 5 meter corridor to a new fall-line corridor and repeats for three turns
- The drill consists of six short turns sequences linked by five traverses



Lane Change Drill

Criteria for perfect execution:

- Balance is maintained in all three planes
- Turns are relatively round, carved, and of consistent radius
- Changing lanes is accomplished by a radical rhythm change where the skis continue across the fall-line without changing the radius of the exiting turn or the first turn in the new corridor
- Consistent speed is maintained throughout all portions of maneuver
- A pole swing coincides with edge release and center-of-mass movement into the new turn

Scoring:

Starting with a perfect score of 10, subtract up to:

- 2 points for every instance of balance that requires a drastic correction
- 1 point for every turn that is not round
- 1 point for not skiing in a lane
- 1 point for every deviation in speed
- 1 point for every turn that does not have a high degree of carving
- 1 point for each traverse not across the fall-line
- 1 point for each lane change turn that does not mimic the radius of the previous turns
- 1 point for every missed pole swing

KID-FRIENDLY START INSTRUCTIONS:

- Ski three short radius turns in a corridor about as wide as a snow cat lane
- After the third turn, continue across the hill for about two cat-widths and start another three short turns section
- Ski six short turn sections connected by traverses
- Stay in balance
- The turns are carved and linked together
- All turns are of the same shape, but the third turn is taken across the hill to a new corridor
- Speed is maintained for all of the turns
- Use a pole swing or plant for each turn

Straight run in wave track

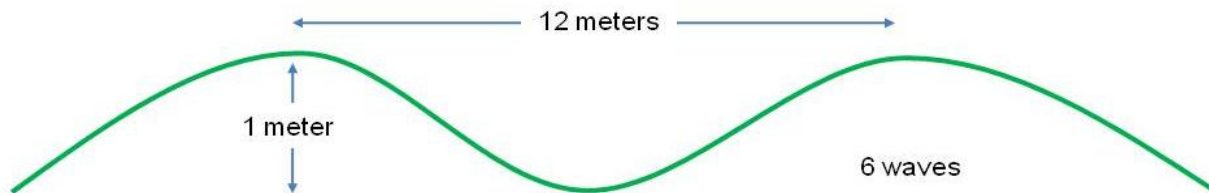
Objective: Using flexion and extension of the lower body to manage pressure against the snow over undulating terrain in an aerodynamic position.

Primary Skill: Pressure

Justification: Ski racers need to manage undulating terrain. On another level, the ski racer needs to have the ability to manage ski/snow pressure, either to create speed or to maintain speed.

Slope: Beginner slope

Set-up: Six waves are constructed by a snow cat that are one meter high when measured from the bottom of the trough to the apex of the roll. Waves are perpendicular to the fall-line and spaced at 12 meters apart from crest to crest. Width is one snow cat grooming width, or about 5 meters.



Description:

- The skier enters the wave track at GS speed
- The skier skis in a straight run maintaining a consistent high tuck position such that they can absorb the "waves" through flexion and extension of the lower body

Criteria for perfect execution:

- The skier's upper body remains at the same relative elevation above the horizon that is consistent with the pitch of the hill
- Lower body absorbs the rolls and maintains or increases pressure on the downside of the rolls
- Skis remain flat against the snow and run straight in the fall-line
- Skier maintains equal distance between both skis
- Skis have even pressure between left and right
- Skier adjusts fore/aft pressure to increase speed

Scoring:

Starting with a perfect score of 10, subtract up to:

- 2 points for not maintaining straight run down the fall-line
- 2 points for not working terrain and gaining speed
- 1 point every time weight is not evenly distributed between left and right ski
- 1 point for every roll the athlete is excessively forward or aft relative to the task
- 1 point for not maintaining flat skis on the snow
- 1 point for every time athlete is in the air
- 1 point for widening or narrowing of stance
- 1 point for elbows outside the knees in tuck
- 1 point for every roll the athlete is not in a tuck

One ski skiing with lane changes

Objective: To ski exclusively on one ski with an established rhythm and turn shape, then break that rhythm and re-create the same rhythm and turn shape in a new fall-line.

Primary Skill: Edging

Justification: In linked rhythmical turns, edge angle is constantly increased followed by an immediate decrease in edge angle. The ability to disrupt this rhythm is key for rhythm changes found in race courses.

Slope: Intermediate groomed terrain.

Description:

- Skier wears one ski
- Skier skis three turns in the fall-line of even size, rhythm and speed in a 5 meter wide corridor, then traverses across another 5 meter corridor to a new fall-line corridor and repeats for three turns
- The drill consists of six short turn sequences linked by five traverses
- Foot without ski is held completely off the snow and maintains a non-swinging position
- Do complete drill with left and right leg separately

Criteria for perfect execution:

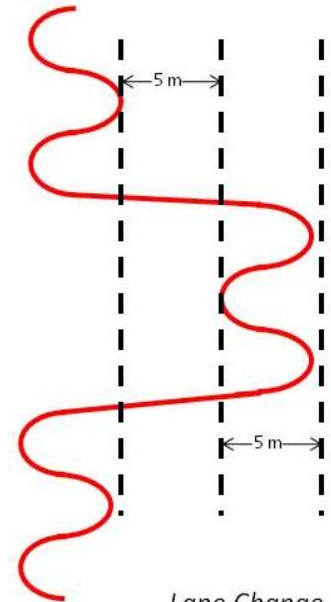
- Free ski boot never touches the snow
- Free ski boot is not used for balance adjustment
- Speed is consistent throughout entire maneuver
- Turns are relatively round, carved, and of consistent radius
- Ski poles are not used inappropriately for balance

Scoring:

Total score is the average of the left and right scores.

Starting with a perfect score of 10, subtract up to:

- 1 point for every time the ski boot touches the snow
- 1 point for every 10% of the drill cycle that the pole is assisting balance (e.g., if the pole was dragged for 30% of the drill cycle then deduct 3 points)
- 1 point for every non-round turn
- 1 point for having corridors of unequal width
- 1 point for each change in speed during trial
- 1 point for every non-carved turn
- 1 point for every turn that results in a change of radius
- ½ point for every swing of the free ski boot



Lane Change Drill

Sideslip to straight run to sideslip

Objective: To go straight down the fall-line and be able to rotate both skis simultaneously in each direction until skis are perpendicular to the fall-line followed by a sideslip, and then rotate skis back into the fall-line without an excess loss of speed from the sideslip.

Primary Skill: Rotary

Justification: Upper body and lower body separation demonstrated by rotation of the skis while maintaining the upper body quiet in space is essential for efficient ski racing.

Slope: Intermediate groomed terrain with a consistent fall-line.

Description:

- Skier starts in a straight run down the fall-line
- Skis are maintained at hip width throughout the drill
- After about 10 meters skier pivots both skis across the fall-line in one continuous motion
- Skier sideslips for 6 meters in a corridor down the fall-line
- The skis are then rotated back so they point down the fall-line for 6 meters followed by another 6 meter sideslip the opposite direction
- Drill is concluded after the fourth sideslip, with an edge set that is timed with a pole plant and holds a stopped position for 3 seconds

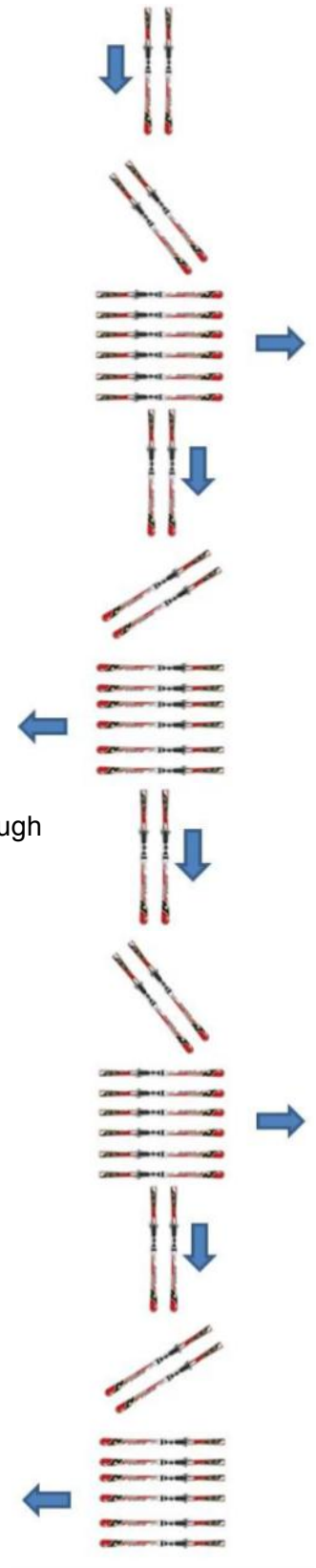
Criteria for perfect execution:

- Skier stays within a ski width corridor without deviation from the fall-line through entire drill
- Skis are pivoted simultaneously
- Hip width stance in all phases of the drill
- Skier loses a minimal amount of speed during the sideslips
- Distinct straight run between sideslips
- Pole plant coincides with edge set at conclusion of drill

Scoring:

Starting with a perfect score of 10, subtract up to:

- 5 points for a stepping or sequential movement to pivot
- 1 point for every ski length outside the desired sideslip corridor throughout the task
- 1 point for not coinciding pole touch with edge set at conclusion
- 1 point for not maintaining edge set and quiet posture for 3 seconds at conclusion





PHASE 4

Girls Ages 11-14, Boys Ages 12-15
5-9 years in sport

Freeski – hourglass

Objective: To gradually decrease the radius of the successive turns, then gradually increase the radius back to the original turn size.

Primary Skill: Balance

Justification: Turn size and shape need to be able to be dictated by the skier. Gradual changes in turn size demonstrate the skier has fine motor control with regards to body mechanics. Perception and anticipation of where to place the arc without gates suggests that the skier has control and can initiate and conduct the intended turn.

Slope: Intermediate groomed terrain.

Set-up: Define the start and finish. Place two brushes half way down 5 meters apart across the hill.

Description: The drill is 10 turns in duration.

- Starting with GS-sized turns, gradually decrease the turn radius until a slalom size turn is achieved at the half-way point while skiing between the two brushes
- After the brushes, the turns will become gradually larger until the GS-sized turn is reached at drill conclusion

Criteria for perfect execution:

- Balance is maintained in all three planes
- Carved round turns are linked without traverse
- Turns gradually become smaller then larger without abrupt changes in turn size or shape
- Relatively consistent speed is maintained throughout
- Hourglass is symmetric from left to right
- Hourglass is symmetric from top to bottom

Scoring:

Starting with a perfect score of 10, subtract up to:

- 2 points for every instance of balance that requires a drastic correction
- 1 point for every turn that is not round
- 1 point for every abrupt change in radius or speed
- 1 point for every turn that does not have a high degree of carving
- 1 point for asymmetric hourglass shape left-to-right or top-to-bottom



Linked turns in wave track

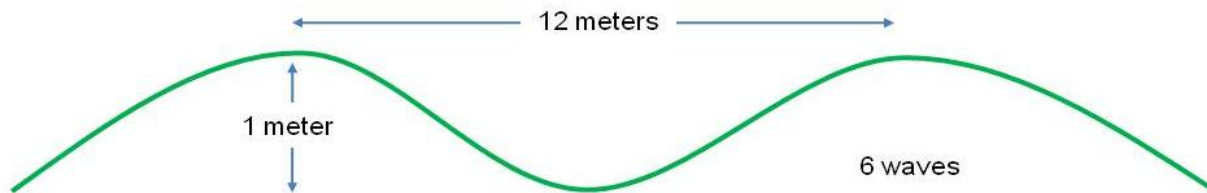
Objective: Using flexion and extension of the lower body to manage pressure against the snow over undulating terrain while making linked turns.

Primary Skill: Pressure

Justification: Ski racers need to manage undulating terrain. On another level, the ski racer needs to have the ability to manage ski/snow pressure either to create speed or maintain speed while turning.

Slope: Beginner slope.

Set-up: Six waves are constructed by a snow cat that are one meter high when measured from the bottom of the trough to the apex of the roll. Waves are perpendicular to the fall-line and spaced 12 meters apart from crest to crest. Width is two snow cat grooming widths or about 10 meters.



Description:

- The skier enters the wave track at GS speed, then makes carved, round linked turns
- The skier skis such that they can absorb the waves and extend into the troughs with their lower body while turning
- Turn apex is randomly placed on each wave by the athlete with no consecutive turn being placed in the same place (the turn apex could be on the backside, upslope, top, or trough)

Criteria for perfect execution:

- The skier's upper body remains at same relative elevation above horizon that is consistent with the pitch of the hill
- Lower body absorbs the rolls and maintains or increases pressure on the downside of the rolls
- Skis maintain snow contact at all times
- Skier demonstrates round turns while varying turn apex placement relative to the rolls
- Skier adjusts fore/aft pressure to increase speed

Scoring:

Starting with a perfect score of 10, subtract up to:

- 2 points for not working terrain and gaining speed
- 1 point for every roll the athlete is excessively forward or aft relative to the task
- 1 point for every time athlete is in the air
- 1 point for every time two turn apexes are in the same place (e.g., backside then backside would be deducted a point)
- 1 point for every non-round turn
- 1 point for every non-carved turn



PHASE 5

Girls Ages 12-16, Boys Ages 14-17
6-11 years in sport

One ski skiing without poles

Objective: To ski solely on one ski connecting medium radius turns (15-18m turn apex to turn apex) on each leg without ski poles.

Primary Skill: Edging

Justification: Eliminating the poles from the one ski drill further challenges balance as the skier will need to adjust their center-of-mass solely with the ankle when performed correctly.

Slope: Intermediate groomed terrain.

Description:

- Skier wears one ski and performs without poles
- Skier will demonstrate right and left leg in eight linked medium radius (15-18m) turns
- Foot without ski is held completely off the snow and maintains a non-swinging position

Criteria for perfect execution:

- Free ski boot never touches the snow
- Free ski boot is not used for balance adjustment
- Speed is consistent throughout entire maneuver
- Turns are relatively round, carved, and of consistent radius

Scoring:

Total score is the average of the left and right scores.

Starting with a perfect score of 10, subtract up to:

- 1 point for every time the ski boot touches the snow
- 1 point for every non-round turn
- 1 point for every non-carved turn
- 1 point for each abrupt change in speed
- ½ point for every swing of the free ski boot



PHASE 5

Girls Ages 12-16, Boys Ages 14-17
6-11 years in sport

Hop turns

Objective: To demonstrate the ability to rotate the lower body and maneuver the skis accurately while maintaining an upper body that appears quiet in space.

Primary Skill: Rotary

Justification: Rotation of the legs within the pelvis without involving the upper body in the same direction is imperative for rotary skills.

Slope: Intermediate groomed terrain.

Description:

- Skier starts from a traverse stance
- Skis jumps with both skis pivoting them in alternating directions for 15 jumps
- Skis are pivoted around the middle of the ski with simultaneous leg rotation
- Skier jumps in the opposite direction immediately upon landing
- Track left in snow resembles a series of "Z"s, with the tip of the previous track almost coinciding with the tail of the next track
- Exercise concludes with an edge set of both skis across the fall-line and hold stopped position for 3 seconds



Criteria for perfect execution:

- Skis are always parallel to snow surface in the air (no tips or tail up)
- Equal distance is maintained between skis
- Skis land on edge and take off immediately from same position
- Skis take off, rotate, and land simultaneously
- Consistent rhythm and speed with no pausing or stopping during hops
- Last hop concludes with an edge set that coincides with a point plant and skier holds motionless for 3 seconds

Scoring:

Starting with a perfect score of 10, subtract up to:

- 1 point every time there is a break in rhythm
- 1 point for not maintaining "Z" pattern
- 1 point for every time ski tips or tails are unduly elevated relative to the rest of the ski
- 1 point for each time not establishing an edge at landing
- 1 point for each sequential leg take off
- 1 point for each sequential leg landing
- ½ point for not stopping after last hop
- ½ point for not remaining motionless for 3 seconds



PHASE 5

Girls Ages 12-16, Boys Ages 14-17
6-11 years in sport

Freeski – varied terrain and snow conditions

Objective: To demonstrate that the skis can be maneuvered and used as a tool in varied terrain.

Primary Skill: Balance

Justification: Varied terrain challenges balance in all directions. Changing snow conditions challenge the ability to perform accurately and react efficiently.

Slope: Expert terrain that has variable slope angle and side hills on non-groomed snow.

Description:

- Skier skis 10 turns while maintaining a consistent 20 to 22 meter turn size and shape regardless of the terrain and conditions
- Link turns with minimal traversing, maintaining speed with turn shape
- Any air time is controlled with skis paralleling the angle of the slope

Criteria for perfect execution:

- Turns are round with consistent turn size
- Minimal traversing
- Skis are parallel and equidistant
- Any air time is controlled and landed with the skis paralleling the angle of the landing slope
- Skier skis with a high rate of speed

Scoring:

Starting with a perfect score of 10, subtract up to:

- 4 points for slow speed
- 2 points for every instance of balance that requires a drastic correction
- 2 points for every landing in which the skis do not parallel the angle of the slope
- 1 point for every turn that is not round
- 1 point for every turn that is not of consistent size
- ½ point for every turn where speed is not maintained
- ½ point for every instance skis are not parallel
- ½ point for every instance skis deviate from initial equidistant posture

Camel jump in wave track

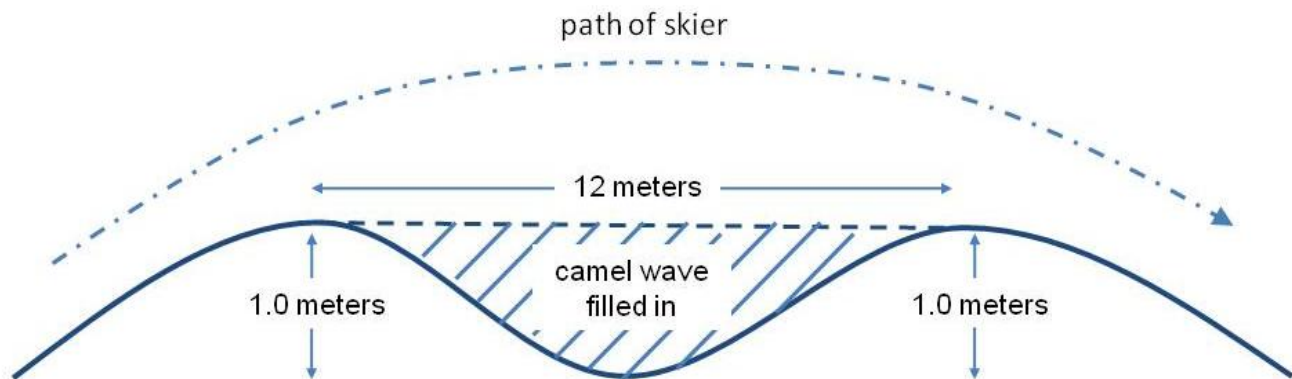
Objective: To use the upslope of one wave to jump and clear the following wave at the end of a wave track.

Primary Skill: Pressure

Justification: When rolls in a race course become more of demand than can be absorbed (or to create a faster line) it is advantageous to skip the trough between the two (or more) rolls.

Slope: Beginner slope.

Set-up: Waves are constructed one meter high when measured from the bottom of the trough to the apex of the roll. Waves are perpendicular to the fall-line and spaced 12 meters apart. It is recommended to fill in the trough of the final wave. Width is one to two snow cat grooming widths or about 5-10 meters.



Description:

- The skier enters the wave track at GS speed
- Skier maintains straight run while maintaining ski/snow contact and a tuck position through the waves leading up to the camel feature
- Skier uses the upslope of the camel feature along with any extra push-off that is needed based on their speed to jump and clear the gap, landing on the backside of the next wave

Criteria for perfect execution:

- The skier's upper body remains at the same relative elevation above the horizon that is consistent with the pitch of the hill in a high tuck while the lower body absorbs the rolls and maintains or increases pressure on the downside of the rolls leading up to the camel feature
- Skis remain flat against the snow and run straight in fall-line with even pressure between left and right leading up to camel feature
- Jump takeoff is from both feet evenly
- Skis roll forward in the air to match the landing slope of the final roll
- Landing occurs on the backside of the final roll
- Landing with both feet simultaneously, skis contact snow all at once (not tip or tail first)
- Skier adjusts fore/aft pressure to increase speed



PHASE 6

Girls Ages 16+, Boys Ages 17+
10+ years in sport

Scoring: Starting with a perfect score of 10, subtract up to:

- 3 points for not landing on down slope of final wave
- 3 points for landing on ski tails or tips
- 2 points for excess hand motion in the air (rolling down the windows)
- 2 points for not jumping from or landing on both feet simultaneously
- 2 points for not working terrain and gaining speed in the waves preceding the camel feature
- 1 point for not maintaining straight run down fall-line with consistent stance width
- 1 point for not maintaining flat skis on the snow or getting air prior to camel
- 1 point for every roll the athlete is not in a tuck prior to camel
- 1 point for elbows outside the knees in tuck

One ski skiing hourglass

Objective: To ski exclusively on one ski while gradually decreasing the radius of successive turns, then gradually increasing the radius back to the original turn shape on challenging terrain.

Primary skill: Edging

Slope: Groomed expert terrain.

Set-up: Define the start and finish. Place two brushes half way down 5 meters apart across the hill.

Description: The drill consists of 10 turns.

- Skier wears one ski
- Starting with GS-sized turns, gradually decrease the turn radius until a slalom-sized turn is achieved at the half-way point while skiing between the two brushes
- After the brushes, the turns become gradually larger until the GS-sized turn is reached at drill conclusion
- Foot without ski is held completely off the snow and maintains a non swinging position
- Drill is performed with left and right leg in separate trials

Criteria for perfect execution:

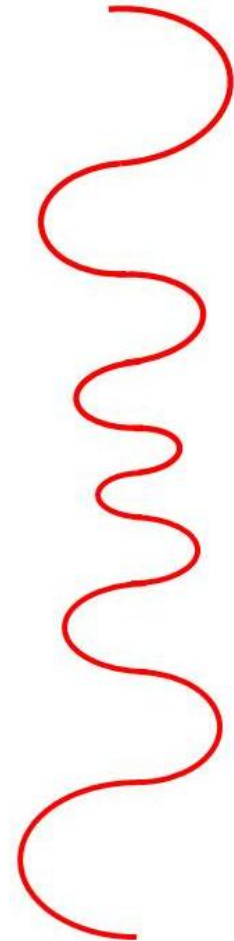
- Free ski boot never touches the snow
- Free ski boot is not used for balance adjustment
- Speed is consistent throughout entire maneuver
- Carved round turns
- Turns gradually become smaller to the midway point then larger to the finish
- No abrupt changes in turn size or shape
- Hourglass is symmetric from left to right and top to bottom
- Ski poles are not used inappropriately for balance

Scoring:

Total score is the average of the left and right scores.

Starting with a perfect score of 10, subtract up to:

- 1 point for every time the ski boot touches the snow
- 1 point for every 10% of the drill cycle that the pole is assisting balance (e.g., if the pole was dragged for 30% of the drill cycle then deduct 3 points)
- 1 point for every non-round turn
- 1 point for each abrupt change in speed
- 1 point for each abrupt change in turn radius
- 1 point for asymmetric hourglass shape side-to-side or top-to-bottom
- ½ point for every swing of the free ski boot



Vertical brush quickness course

Objective: To ski through a series of tightly spaced brushes quickly.

Primary Skill: Rotary

Justification: Quick movements with precision are essential for slalom skiing.

Slope: Easy intermediate groomed terrain.

Set-up: 12 brushes are offset $\frac{1}{2}$ meter and at a 3 meter vertical distance in the fall-line. Timing is used, with the start wand set eight meters directly above the first brush and the finish line set three meters below the 12th (last) brush.

Establishing "criterion time": Before the exercise, athlete sets a criterion time by pushing once without skating from the start and skiing straight down the hill in a standing position through the finish timing.

Description:

- Skier starts 8 meters above first brush
- Skier starts with their choice of start strategy
- Skier alternates left and right around successive brushes
- Skier attempts to complete the course as quickly as possible
- Finish is 3 meters below last gate in line with the start

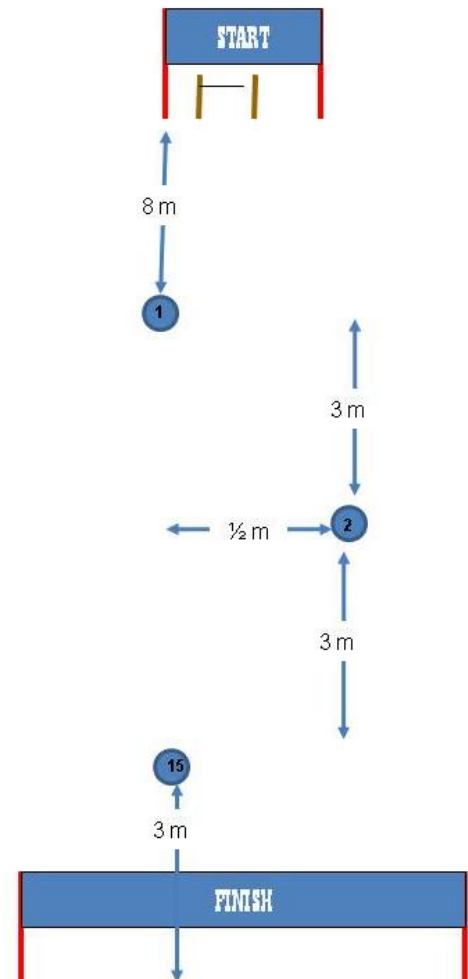
Criteria for perfect execution:

- Completion of course at a speed comparable to a straight run alongside the course
- Ski tips and boots must go around each brush

Scoring:

Starting with a score of 10 subtract:

- 1 point for every brush missed
- 1 point for every 10% above the athlete's criterion time





PHASE 6

Girls Ages 16+, Boys Ages 17+
10+ years in sport

Freeski moguls in "V" shaped corridor

Objective: Ski in moguls starting with large 20-24m turns and gradually decrease the radius of each successive turn over a series of 10 turns concluding with turns that fit an individual mogul.

Primary Skill: Balance (perception, anticipation)

Justification: Turn size and shape need to be able to be dictated by the skier. Gradual changes in turn size demonstrate the skier has fine motor control with regards to body mechanics. Perception and anticipation of where to place and describe the turn without gates suggests that the skier has control and can initiate and conduct the intended turn.

Slope: Expert terrain with moguls.

Set-up: A start and finish are defined only.

Description: The drill is 10 turns in duration.

- Starting with a long radius turn (20-24m) the turns gradually decrease in radius
- Final turn radius matches a mogul-sized turn

Criteria for perfect execution:

- Balance is maintained in all three planes
- Turns are linked without traverse
- Turns gradually become smaller
- No abrupt changes in turn size or shape
- Turns are symmetric from left to right
- Turns are consistent and round while carrying a high rate of speed

Scoring:

Starting with a perfect score of 10, subtract up to:

- 4 points for slow speed
- 2 points for every instance of balance that requires a drastic correction
- 1 point for every turn that is not round
- 1 point for every abrupt change in radius or speed
- 1 point for each asymmetric shape left-to-right
- ½ point for every turn where speed is not maintained

SCORE		SKILL	TASK
10	Perfect	Flawless execution	Nothing to change
9	Outstanding	Smallest of change needed	Smallest of alteration desired
8	Excellent	Couple of small changes needed	One turn or dimension may need slight refinement
7	Very Good	Skills are refined	Several turns or dimensions may need slight tuning
6	Good	Skill level is above average	Task is performed above average
5	Average	Skill level is average for this level	Average performance of task
4	Fair	Adequate skills	No problem identifying the task although needs refinement
3	Mediocre	Substandard skills	Slight problem identifying the task although needs improvement
2	Poor	Vague demonstration of skills	Task performance is vague
1	Very Poor	Grossly deficient skills	Task performance is difficult to distinguish
0	Inability	Nothing resembling the skills	Task is unrecognizable