Level 2 Movement Analysis Criteria

L2 Movement Analysis (MA) Expectations:	Successful candidates consistently demonstrate their ability to:
● A L2 instructor will be able to articulate accurate cause and effect relationships of at least one skiing fundamental through all phases of the turn resulting in an effective prescription for change for skiers through the intermediate zone.	1. Describe ski and body performance, relative to two or more skiing fundamentals in all turn phases, and from turn to turn. 2. Link ski and body performance to describe cause and effect relationships in at least two fundamentals in all phases of the turn, and from turn to turn 3. Evaluate the described performances and compare to more ideal 4. Prescribe a specific change in one skiing fundamental utilizing DIRT to create a change in desired outcome. 5. Relate how equipment choice affects skiing outcomes through the intermediate zone

The table above describes technical competency needed to perform movement analysis for a L2 candidate. To help understand the assessment activities that are expected, an example for each assessment will be given. Refer to the Introduction to MA document for a description of ski and body performance explanations.
There are similarities between L1 and L2 MA; however, the L2 candidate is expected to be able to do MA from the novice zone through the intermediate zone. They are expected to be able to accurately describe one fundamental through all phases of the turn. They must describe and identify cause and effect relationships using a skiing fundamental and be able to select the most important of all the prescriptions that would improve the skier's performance. Their knowledge of ski design and how this impacts ski performance is more highly refined.

For each assessment activity we have picked a video to review and provided an MA assessment. The video and the MA feedback are designed to help the candidate understand the expectations of each assessment area.

Number 1: Describe ski and body performance, relative to two or more skiing fundamentals in all turn phases, and from turn to turn.

Click on the video link below showing an intermediate skier.
https://www.youtube.com/watch?v=zlvkWMdrLOQ&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9

Three different fundamentals have been analyzed for this video in order to provide a better understanding of how MA can be done with different fundamentals.

Alpine Fundamentals
1. Control the relationship of the Center of Mass to the base of support to direct pressure along the length of the skis.
2. Control pressure from ski to ski and direct pressure toward the outside ski.
3. Control edge angles through a combination of inclination and angulation.
4. Control the skis rotation (turning, pivoting, steering) with leg rotation, separate from the upper body.
5. Regulate the magnitude of pressure created through ski/snow interaction.

Use the template below to help write up your response. The yellow header templates are for the student's response. The Green header templates contain the pro's analysis. The two fundamentals to focus on have been outlined for you below. The pro's response covers three fundamentals that are most likely to benefit the skier. All fundamentals are covered between the three, L2 MA video documents. Please review all the available L2 documents and videos to help with your MA education.

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#1. Balance CM over BOS to Affect Pressure Along the Length of the Ski	Initiation			
	Shaping			
	Finish			

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#4. Control ski rotation with leg rotation separate from upper body	Initiation			
	Shaping			
	Finish			

Template below is optional

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#2 Control Pressure from Ski to Ski and Direct Pressure to the Outside Ski	Initiation			
	Shaping			
	Finish			

Compare your analysis to that of the pros

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#1. Balance CM over BOS to Affect Pressure Along the Length of the Ski	Initiation	Pressure is moving from aft towards the center never moving forward of the heel piece.	The skier's knees and hips extend slightly and the ankles remain extended. CM is behind the BOS.	Similar from turn to turn.
	Shaping	Pressure starts to move aft prior to the fall line.	The skier's knees and hips are flexing, and ankles remain extended. This moves the skiers CM further aft.	Similar from turn to turn.
	Finish	Pressure remains towards the rear of the ski.	The skier's knees and hips are flexed, the ankle is extended. The flexion remains the same after the fall line. Maximum flexion was reached in the fall line.	Similar from turn to turn.

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#4. Control ski rotation with leg rotation separate from upper body	Initiation	Skis start the turn sequentially because of downstem at completion of the last turn. At times there is a stem of the new outside ski at initiation.	The turn is initiated with leg rotation.	Similar from turn to turn.
	Shaping	The skis become parallel around the fall line. The rate of the rotation increases just above the fall line.	The rate of the inside leg rotation increases, bringing the skis parallel.	Similar from turn to turn.
	Finish	The downhill ski frequently is stemmed outward causing a wedge position.	The upper body/hips mostly stay square to the feet through this phase. Occasional the inside hand will drop behind but it doesn't twist the shoulders back. The outside leg rotates more than the inside leg.	Similar from turn to turn.

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#2 Control Pressure from Ski to Ski and Direct Pressure to the Outside Ski	Initiation	Most turns are started with pressure directed to the new outside ski. At times, the new inside ski is lifted off the snow.	Entire upper body is inclined from the inside of the old turn moving towards the inside of the new turn.	Similar from turn to turn.
	Shaping	The pressure continues to shift from the outside to both skis and then towards the inside ski.	The inclination of the whole body continues to move towards the inside of the turn.	Similar from turn to turn.
	Finish	The pressure moves to the inside ski and remains there and the outside ski lightens.	The whole body is inclined over the inside ski.	Similar from turn to turn.

Number 2: Link ski and body performance to describe cause and effect relationships in at least two fundamentals in all phases of the turn, and from turn to turn. To be more precise, remember to observe the Duration, Intensity, Rate, Timing of body movements along with ski action.

Click on the video below showing an intermediate skier.
https://www.youtube.com/watch?v=zlvkWMdrLOQ&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9

Write your response in the templates below.

Fundamental	Turn Phase	Body Performance (cause)	Ski Performance (effect)	Outcome of the cause and effect relationship
F#1. Balance CM over BOS to Affect Pressure Along the Length of the Ski	Initiation			
	Shaping			
	Finish			

Fundamental	Turn Phase	Body Performance (cause)	Ski Performance (effect)	Outcome of the cause and effect relationship
F#4. Control ski rotation with leg rotation separate from upper body	Initiation			
	Shaping			
	Finish			

This template is optional

Fundamental	Turn Phase	Body Performance (cause)	Ski Performance (effect)	Outcome of the cause and effect relationship
F#2 Control Pressure from Ski to Ski and Direct Pressure to the Outside Ski	Initiation			
	Shaping			
	Finish			

Compare your analysis to that of the pros

Fundamental	Turn Phase	Body Performance (cause)	Ski Performance (effect)	Outcome of the cause and effect relationship
F#1. Balance CM over BOS to Affect Pressure Along the Length of the Ski	Initiation	The skier's knees and hips extend slightly and the ankles remain extended. CM is behind the BOS.	This is moving the pressure towards the center.	Because the extension is being driven from the knees, and the ankles remain extended the skier can only move from aft towards the center.
	Shaping	The skier's knees and hips are flexing, and ankles remain extended. This moves the skiers CM further aft.	Pressure starts to move aft prior to the fall line.	Due to flexion movements only coming from the knees and hips, the skier has limited range of motion and can only move aft when flexing.
	Finish	The skier's knees and hips are flexed, the ankle is extended. The flexion remains the same after the fall line. Maxim flexion was reached in the fall line.	Pressure remains towards the rear of the ski.	Due to no continuing flexion movements, the skier is stuck in an aft position.

Fundamental	Turn Phase	Body Performance (cause)	Ski Performance (effect)	Outcome of the cause and effect relationship
F#4. Control ski rotation with leg rotation separate from upper body	Initiation	The turn is initiated with leg rotation.	Skis start the turn sequentially because of downstem at completion of the last turn. At times there is a stem of the new outside ski at initiation.	Due to the downstem and the square body position at turn completion, sequential leg rotation is occurring..
	Shaping	The rate of the inside leg rotation increases, bringing the skis parallel.	The skis become parallel around the fall line. The rate of the rotatory increases just above the fall line.	Due to the sequitianal leg rotation at the turn initiation, the intensity and the rate of rotation is occurring quickly creating a Z shaped turn.
	Finish	The upper body/hips mostly stay square to the feet through this phase. Occasional the inside hand will drop behind but it doesn't twist the shoulders back. The outside leg rotates more than the inside leg.	The downhill ski frequently is stemmed outward causing a wedge position.	The upper body staying square causes a delayed entry into the next turn and makes keeping the skis parallel difficult.

Fundamental	Turn Phase	Body Performance (cause)	Ski Performance (effect)	Outcome of the cause and effect relationship
F#2 Control Pressure from Ski to Ski and Direct Pressure to the Outside Ski	Initiation	Entire upper body is inclined from the inside of the old turn moving towards the inside of the new turn.	Most turns are started with pressure directed to the new outside ski. At times, the new inside ski is lifted off the snow.	At turn completion, the pressure is directed to the inside of the turn. Pressure control movements will be directed to the new outside ski briefly as he continues to move to the inside of the new turn.
	Shaping	The inclination of the whole body continues to move towards the inside of the turn.	The pressure continues to shift from the outside to both skies and then towards the inside ski.	Pressure moves back from the outside ski towards the inside ski.
	Finish	The whole body is inclined over the inside ski.	The pressure moves to the inside ski and remains there and the outside ski lightens.	Pressure remains on the inside ski.

Number 3: Evaluate the described performances and compare to more ideal
Click on the video link below:
https://www.youtube.com/watch?v=zlvkWMdrLOQ&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9

Intended Outcome	Body Performance:	Ski Performance:	Describe More Ideal Performance
F#1. Balance CM over BOS to Affect Pressure Along the Length of the Ski			

Intended Outcome	Body Performance:	Ski Performance:	Describe More Ideal Performance
F#4. Control ski rotation with leg rotation separate from upper body			

Intended Outcome	Body Performance:	Ski Performance:	Describe More Ideal Performance
F#2 Control Pressure from Ski to Ski and Direct Pressure to the Outside Ski			

Compare your analysis to that of the pros

Intended Outcome	Body Performance:	Ski Performance:	Describe More Ideal Performance
F#1. Balance CM over BOS to Affect Pressure Along the Length of the Ski	Through the initiation phase of the turn, the ankles remain extended, while the knees and hips are extending, moving the CM over the BOS. From the shaping phase on, the ankles remain extended, and the knees and hips flex moving the CM behind the BOS.	Through the initiation phase of the turn the pressure on the skis is moving from aft towards center. From the shaping phase on, the pressure is moving aft.	Ideally, the skier's ankles are flexed through the turn completion allowing pressure to stay centered along the length of the ski. At the turn initiation, this would allow the skier to move forward as needed. Since the skier is in the bumps, the ability to flex and extend the ankles will allow for pressure control along the length of the ski to manage the terrain.

Intended Outcome	Body Performance	Ski Performance	Describe More Ideal Performance
F#4. Control ski rotation with leg rotation separate from upper body	The skier uses sequential leg rotation through the whole turn.	The skis begin the turn in a wedge position. In the shaping phase the inside ski rotations faster, creating a parallel position. Through the turn completion, the downhill ski is stemmed away, creating the wedge seen at the initiation.	Ideally, the skier using simultaneous leg rotation will create a rounder turn with the tail of the skis following the tip. Also, learning to separate the upper body from the legs will allow them to develop counter.

Intended Outcome	Body Performance	Ski Performance	Describe More Ideal Performance
F#2 Control Pressure from Ski to Ski and Direct Pressure to the Outside Ski	The skier relies on inclination of the whole body to manage the pressure ski to ski, this is moving pressure from inside leg to inside leg.	The pressure quickly moves over the top of the new outside ski and then moves towards the inside ski for the remainder of the turn.	Ideally the skier finishes the prior turn with pressure directed to the outside ski. When the new turn starts, they can start to direct pressure towards the new outside ski and maintain that pressure through the remainder of the turn.

Number 4: Prescribe a specific change in one skiing fundamental utilizing DIRT to create a change in desired outcome.
Click on the video link below

https://www.youtube.com/watch?v=zlvkWMdrLOQ&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9n

Here the objective is to explain how to prioritize the prescription for change.

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
F#1. Balance CM over BOS to Affect Pressure Along the Length of the Ski			

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
F#4. Control ski rotation with leg rotation separate from upper body			

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
F#2 Control Pressure from Ski to Ski and Direct Pressure to the Outside Ski			

Compare your analysis to that of the pros

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
F#1. Balance CM over BOS to Affect Pressure Along the Length of the Ski	Start with a stationary exercise of flexing the ankles in the boots and compliment that with allowing the upper body to come more forward. Take this movement into larger turns on easier terrain with multiple pumps of the boots with the mentioned upper body movement. Gradually slow the pumps down to one slow extension to the fall line and a slow flex to the turn finish. Have the student explore or explain how this new movement affects where they are standing over their foot.	This will allow the skier to pressure the front and center of the ski.	A more centered stance overall and one which the skier can move forward into the new turn and manage terrain and conditions. This position will be much less fatiguing.

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
F#4. Control ski rotation with leg rotation separate from upper body	Have the student sit down in the snow with skis off. Keep the legs slightly bent. Have the student turn their feet, (legs) back and forth. Then grab the front of the boots and put resistance on this movement to allow the student to feel the muscles used while turning the legs. Stand up and turn the legs back and forth using only the legs. Practice using this movement in a single medium radius turns to a stop on easier terrain. Emphasize keeping the skis flat to the snow to allow easy of rotary movements. Work into linked turns.	The skis should make a round turn where the tails follow the tips.	The skier will rely on leg rotation as a means to control turn shape, speed, and size with the upper body separate from the lower body.

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
F#2 Control Pressure from Ski to Ski and Direct Pressure to the Outside Ski	On the side of the hill, have the skier practice lifting up their inside ski and balance on their downhill ski. Take that feeling and position into a traverse where the tail of the uphill ski is lifted. Do this in both directions. On gentle terrain have the skier perform stork turns where the inside ski tail is lifted off the snow after the fall line and progress to before the fall line.	The outside ski has more pressure than the inside ski.	A stronger and more progressive pressure movement over the outside ski from turn to turn.

Number 5: Relate how equipment choice affects skiing outcomes through the intermediate zone

Here you are observing skies and describing the impact of ski design for a given task or snow condition.

Ski/Boots design/characteristics	Task / snow condition	Overall impact

Compare your analysis to that of the pros

Ski/Boots design/characteristics	Task / snow condition	Overall impact
Ski design looks good. Boots appear that they may be too big and potentially a bit stiff.	These should work in this snow condition	Boots are perhaps a limiting factor in encouraging a more centered stance.