

## Level 2 Movement Analysis Criteria

L2 Movement Analysis (MA) Expectations:	Successful candidates consistently demonstrate their ability to:
<p>A L2 instructor will be able to articulate accurate cause and effect relationships of two or more skiing fundamentals through all phases of the turn resulting in an effective prescription for change for skiers through the intermediate zone.</p>	<ol style="list-style-type: none"> <li>1. Describe ski and body performance, relative to two or more skiing fundamentals in all turn phases, and from turn to turn.</li> <li>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</li> <li>3. Evaluate the described performances and compare to more ideal</li> <li>4. Prescribe a specific change in one skiing fundamental utilizing DIRT to create a change in desired outcome.</li> <li>5. Relate how equipment choice affects skiing outcomes through the intermediate zone.</li> </ol>

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 two or more fundamentals 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=rjSc0C8mz\\_k&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=2](https://www.youtube.com/watch?v=rjSc0C8mz_k&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=2)

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. Two fundamentals to focus on have been outlined for you below. The Pro's analysis is given for the two 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.

Fill in the yellow template based on what you see.

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			

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

**Compare your response to that of the pros (Our MA is provided below)**

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#4. Control ski rotation with leg rotation separate from upper body	Initiation	The skis turn sequentially with a slight wedge entry at times.	Upper body initiates the turning.	Symmetrical from turn to turn.
	Shaping	The inside ski is rotated to match the outside ski to a parallel position.	She continues to rotate her upper body through this phase of the turn.	Her upper body rotation is more pronounced to the left. at times.
	Finish	The inside ski diverges ahead of the outside ski especially on the right turn. Skis spray snow at the end of the turn.	Upper body rotation continues through the turn until the upper body faces up the hill. The upper body rotates more up the hill on the right hand turn.	The inside ski has a divergence. It is present more on the right turn.

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#1. Balance CM over BOS over BOS to Affect Pressure Along the Length of the Ski	Initiation	Pressure is moving from aft towards center. The tail of the skis are bending and the tips are light.	CM is behind BOS moving towards the BOS. Ankles are extended. The knees and hips are extending.	Symmetrical from turn to turn.
	Shaping	Pressure moves towards center at the fall line and starts to move back after the fall line. Skis start bending from the middle before moving back again.	As the knee straightens, the skier moves towards the middle of the skis. Then she begins flexing only her knees and hips moving the CM back.	Symmetrical from turn to turn.
	Finish	Pressure continues to move towards the tail, bending the back of the ski.	Knees stay flexed and CM is behind the BOS putting the skier towards the rear.	Symmetrical 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=rjSc0C8mz\\_k&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=2](https://www.youtube.com/watch?v=rjSc0C8mz_k&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=2)

Fill in the yellow template based on what you see.

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			

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

**Compare your response to that of the pros (Our MA is provided below)**

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	Upper body and hands are the turning force, causing a sequential leg rotation.	There is a wedge entry to the turn as the skis flatten and turn quickly.	Due to the upper body rotation the outside ski rotations faster into the turn than the inside ski causing a wedge entry.
	Shaping	Upper Body continues to rotate through this phase.	Skis move quickly through this phase catching up with the upper body.	Continued upper body rotation causes a Z shaped turn and does not allow for much of a shaping phase.
	Finish	Upper body rotation continues through this phase with inside hand and inside shoulder moving uphill and behind the downhill hand and shoulder	Skis spray a lot of snow at the finish phase and the inside ski moves ahead and at times into a divergence.	Upper body rotation is causing excessive inside leg turning creating the divergence. The upper body facing up the hill at the end of the turn phase generally leads to upper body rotation to start the next turn.

Fundamental	Turn Phase	Body Performance (cause)	Ski Performance (effect)	Outcome of the cause and effect relationship
F#1. Balance CM over BOS over BOS to Affect Pressure Along the Length of the Ski	Initiation	Ankles are extended with knees and hips extending moving the CM towards the center.	Pressure is moving from aft towards center. The tail of the skis are bending and the tips are light.	Due to only the knees and hips being involved in the flexion and extension movements, her CM can only move from aft towards center.
	Shaping	As the knee straightens, the skier moves towards the middle of the skis. Then she begins flexing only her knees and hips moving the CM back.	The ski bends from the middle slightly and for a short period before moving back.	Due to only the knees and hips being involved in the flexion and extension movements, her CM can only move from aft towards center and then aft again.
	Finish	Ankles are open and knees and hips are flexed, putting the skier back at the finish and for the start of the next turn. Inside knee flexes more, especially in the turn to the right.	As the ankles open up and COM moves back with knees flexing, the inside ski gets pushed forward in a diverging manner.	Due to only the knees and hips being involved in the flexion and extension movements, her CM can only move aft.

**Number 3:** Evaluate the described performances and compare to more ideal

Click on the video link below:

[https://www.youtube.com/watch?v=rjSc0C8mz\\_k&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=2](https://www.youtube.com/watch?v=rjSc0C8mz_k&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=2)

Fill in the yellow template based on what you see.

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

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

**Compare your response to that of the pros (Our MA is provided below)**

Fundamental	Body Performance:	Ski Performance:	Describe More Ideal Performance
F#4. Control ski rotation with leg rotation separate from upper body	The skier has excessive upper body rotation and overall skier's CM is too far back. Also the skier inclines into the last half of the turn.	Skis are pressured from the middle to the tail without any tip pressure. The skis pivot erratically.	Turning the legs separately from the upper body will allow the skier to control the rate of the skis rotation, the size and shape of the turn, and assist in the skis remaining parallel.

Fundamental	Body Performance:	Ski Performance:	Describe More Ideal Performance
F#1. Balance CM over BOS over BOS to Affect Pressure Along the Length of the Ski	As the knee straightens, the skier moves towards the middle of the skis. Then she begins flexing only her knees and hips, moving the CM back.	Skis are pressured from the middle to the tail without any tip pressure. The skis pivot erratically	Controlled rotation via legs in this phase will allow the upper body to stay disciplined which will make it easier for the skier to move on to the new outside ski and control the skis rotation as the new turn starts.

**Number 4:** Prescribe a specific change in one skiing fundamental utilizing DIRT to create a change in desired outcome.

Click on the video link: [https://www.youtube.com/watch?v=rjSc0C8mz\\_k&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=2](https://www.youtube.com/watch?v=rjSc0C8mz_k&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=2)

Fill in the yellow template based on what you see.

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#1. Balance CM over BOS over BOS to Affect Pressure Along the Length of the Ski			



**Compare your response to that of the pros (Our MA is provided below)**

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
F#4. Control ski rotation with leg rotation separate from upper body	Do a static exercise, putting the poles against skis sides and promoting leg rotation with some resistance against the poles. Or stand on top of a bump to reduce resistance and turn the skis with legs. Then do some skidde/pivoted turns while working on the legs turning separately from the upper body. Put the leg rotation that was practiced into slow medium radius turns in order to work on the DIRT of the leg action.	A parallel relationship of the skis through the turn can be achieved. Turn size and shape can be varied.	Legs will turn the skis giving the ability to control the DIRT of rotation to apply to various conditions and terrain. Tails will follow tips for round shape.

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
F#1. Balance CM over BOS over BOS to Affect Pressure Along the Length of the Ski	While stationary, flex the ankles feeling pressure move from arch to ball of the foot while flexion and extension movements are happening. 1). Going across the hill and flexing and extending ankles focusing on the same foot sensation. 2). Put that into medium radius turns with pumpers. 3). Then work into extension for the first half of the turn and flexion for the second half of turns.	The skis will bend more continuously throughout the turn. Ski tips will stay on the snow.	A centered or slightly forward stance at initiation enables the skier to balance off their skeleton, allowing for quick reactions and maximum range of movement options as opposed to being stuck on the back of the equipment with slow and limited movement options. This position will be much less fatiguing.

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

Click on the video link [https://www.youtube.com/watch?v=rjSc0C8mz\\_k&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=2](https://www.youtube.com/watch?v=rjSc0C8mz_k&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=2)

Here you are observing skies and describing the impact of ski design for a given task or snow condition. Fill in the yellow template based on what you see.

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

**Compare your response to that of the pros**

Ski/Boots design/characteristics	Task / snow condition	Overall impact
Skis look to be an appropriate length, soft flex, and the ski width a mid fat. Boots should be checked for flex and fit.	Short radius turns/Small bumps with fresh snow.	The skis are acceptable for the conditions. The boots could be too soft or too loose causing her to move aft. A visual inspection would be necessary to make these conclusions.