

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 at least two 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"> 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 two 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.

AC 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=x2KQmk7EIAM&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=6>

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. Control CM over BOS to direct Pressure Along the Length of the Ski	Initiation			
	Shaping			
	Finish			

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#5: Regulate the Magnitude of Pressure Created through Ski/Snow Interaction	Initiation			
	Shaping			
	Finish			

Template below is optional

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#3:Control Edging Through Inclination and Angulation	Initiation			
	Shaping			
	Finish			

Three different fundamentals have been analyzed for this video to provide a better understanding of how MA can be done with different fundamentals. This is how the Pros analyzed this:

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#1. Control CM over BOS to direct Pressure Along the Length of the Ski	Initiation	Pressure starts this phase aft and then moves towards the middle of the ski.	CM starts this phase back due to extended ankles, flexed knees and hips. Through this phase knees and hips are extended moving the CM towards the middle of the skis.	Symmetrical from turn to turn.
	Shaping	Pressure is directed towards the skis center before the fall line and quickly moves aft.	CM moves to the center of the skis prior to the fall line due to quick extension of the knees and hips. After she reaches her maximum extension, the knees and hips flex quickly, moving the CM aft through the remainder of this phase.	Fore aft pressure remains mostly symmetrical from turn to turn.
	Finish	Pressure stays in the same aft position.	The skier's knees and hips remain flexed with little flexion of the ankles. This overall position keeps the skier's CM behind the BOS.	Fore aft pressure remains mostly symmetrical turn to turn.

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#5: Regulate the Magnitude of Pressure Created through Ski/Snow Interaction	Initiation	In the process of extending, the pressure between the skis and snow will be increasing.	The skier extends the knees and hips.	Symmetrical from turn to turn.
	Shaping	Maximum pressure is reached prior to the fall line. Pressure is then rapidly decreased for the remainder of the shaping phase.	Max extension of the knees and hips prior to the fall line. This is followed by rapid flexing of the knees and hips for the remainder of the shaping phase.	Symmetrical from turn to turn.
	Finish	Pressure between the skis and snow remains the same in this phase.	Knees and hips maintain the same level of flexion through this phase.	The skier is mostly symmetrical.

Fundamental	Turn Phase	Ski Performance	Body Performance	Turn to Turn
F#3:Control Edging Through Inclination and Angulation	Initiation	Skis are flattened with a mix of simultaneous and sequential edge change.	On the left hand turn she inclines the whole body for the edge change. On the right hand turn she moves the hip to the inside of the turn during the edge change.	There is an asymmetry between body movements for edge change. Simultaneous edge change is inconsistent and not related to

				inclination/angulation movements.
	Shaping	Edge angle continues to increase with both skis.	The skier's upper body and pelvis remain inclined throughout this phase in the turn to the left. In the turn to the right, the hip remains to the inside of the turn with shoulders moving slightly over the outside ski.	Edge angles are symmetrical from turn to turn even though body movements are not the same.
	Finish	Edge angle continues to increase with both skis.	The skier's upper body and pelvis remain inclined throughout this phase in the turn to the left. In the turn to the right, the hip remains to the inside of the turn with shoulders remaining slightly over the outside ski.	Edge angles are symmetrical from turn to turn even though body movements are not the same.

AC 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=x2KQmk7EIAM&list=PLCxbK4sIgtjph15pPW7nxTizum5NMJiM9&index=6>

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 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
#5: Regulate the Magnitude of Pressure Created through Ski/Snow Interaction	Initiation			
	Shaping			
	Finish			

This template is optional

Fundamental	Turn Phase	Body Performance (cause)	Ski Performance (effect)	Outcome of the cause and effect relationship
F#3:Control Edging Through Inclination and Angulation	Initiation			
	Shaping			
	Finish			

Compare your response 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 over BOS to Affect Pressure Along the Length of the Ski	Initiation	CM starts this phase back due to extended ankles, flexed knees and hips. Through this phase knees and hips are extended moving the CM towards the middle of the skis.	Pressure started aft and moved towards the middle of the ski.	Due to the extension movements only happening from the knees and hips and the ankles always remaining extended, she can only move from aft towards center.
	Shaping	CM moves to the center of the skis prior to the fall line due to quick extension of the knees and hips. After she reaches her maximum extension, the knees and hips flex quickly moving	Pressure is directed to the skis center before the fall line and quickly moves aft.	Due to extension and then flexion movements only happening from the knees and hips, and the ankles always remaining extended, she can only move from aft towards center and then aft again.

		the CM aft through the remainder of this phase.		
	Finish	The skier's knees and hips remain flexed with little flexion of the ankles. This overall position keeps the skier's CM behind the BOS.	Pressure stays in the same aft position.	Due to the knees and hips remaining flexed and the ankles remaining extended, she stays aft on her skis.

Fundamental	Turn Phase	Body Performance (cause)	Ski Performance (effect)	Outcome of the cause and effect relationship
F#5: Regulate the Magnitude of Pressure Created through Ski/Snow Interaction	Initiation	The skier extends the knees and hips.	The pressure between the skis and snow is increasing.	The act of extending knees and hips increases the ski/snow pressure.
	Shaping	Max extension of the knees and hips prior to the fall line. This is followed by rapid flexing of the knees and hips for the remainder of the shaping phase.	Max pressure is reached prior to the fall line. Pressure is then rapidly decreased for the remainder of the shaping phase.	Skis reach their max pressure at the longest point of her extension and also reach their lightest pressure when knees and hips stop flexing.
	Finish	Knees and hips maintain the same level of flexion through this phase.	Pressure between the skis and snow remains the same in this phase.	Because she has reached her maximum flexion of the knees and hips at the end of the shaping phase, she does not absorb the terrain changes. This causes the skis to lose contact with the snow.

Fundamental	Turn Phase	Body Performance (cause)	Ski Performance (effect)	Outcome of the cause and effect relationship
F#3: Control Edging Through Inclination and Angulation	Initiation	The skier tips the whole body to initiate the turn to the left. On the turns to the right, the hip moves to the inside of the turn for the edge change.	Her turns have both simultaneous and sequential edge changes.	The amount she is tipped to the inside of the turn at the previous completion dictates whether she has a simultaneous edge change at the initiation. The inclination of the whole body in the turn to the left vs hip angulation on the right has less of an impact on the simultaneous edge change.
	Shaping	The skier's upper body and pelvis remain inclined throughout this phase	Edge angle continues to increase with both skis.	Both edging movements are increasing skis edge angle.

		in the turn to the left. In the turn to the right, the hip remains to the inside of the turn with shoulders moving slightly over the outside ski.		
	Finish	The skier's upper body and pelvis remain inclined throughout this phase in the turn to the left. In the turn to the right, the hip remains to the inside of the turn with shoulders remaining slightly over the outside ski.	Edge angle continues to increase with both skis.	Both edging movements are increasing skis edge angle. The turns to the left she finishes inclined with no angulation. The turns to the right she finishes with a combination of inclination and hip angulation.

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

Click on the video link below:

<https://www.youtube.com/watch?v=x2KQmk7EIAM&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=6>

Write your response in the templates below.

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			

Fundamental	Body Performance:	Ski Performance:	Describe More Ideal Performance
#5: Regulate the Magnitude of Pressure Created through Ski/Snow Interaction			

Fundamental	Body Performance:	Ski Performance:	Describe More Ideal Performance
F#3:Control Edging Through Inclination and Angulation			

Compare your response to that of the pros:

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	The lack of ankle flexion coupled with the knee and hip movements keeps her CM centered to aft.	The skis are only pressured from centered to aft throughout the turn.	Ideally she needs to learn ankle flexion and then the DIRT of that movement to be able to manage her CM over the length of the entire ski.

Fundamental	Body Performance:	Ski Performance:	Describe More Ideal Performance
F#5: Regulate the Magnitude of Pressure Created through Ski/Snow Interaction	She has rapid extension and flexion movements of the knees and hips.	She is unable to control the DIRT of the pressure between the ski and snow interactions.	Ideally she would have a flexion and extension in ankles, knees and hips to control the DIRT of the pressure.

Fundamental	Body Performance:	Ski Performance:	Describe More Ideal Performance
F#3:Control Edging Through Inclination and Angulation	On her left turns she relies on full body inclination through the whole turn and on her right turns she only uses her hip to manage the edge angles.	Once the edges change into the new turn the edge angles continue to increase through the turn.	Ideally she would have symmetry between left and right turns. This would start with an inclination movement at initiation followed by angulation starting with ankles and knees.

AC 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=x2KQmk7EIAM&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=6>

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			

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
#5: Regulate the Magnitude of Pressure Created through Ski/Snow Interaction			

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
F#3:Control Edging Through Inclination and Angulation			

Compare your response to that of the pros:

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	Start with a stationary drill focusing on ankle flex of both ankles. Take this movement into a pumper drill, pumping the boots multiple times in a medium or large radius turn on easy blue terrain. Finish with one slower extension through turn transition and a slow flex from fall line through turn finish focusing on the new movement.	The skis should start to engage with the snow in a more centered balance point with the ski tails following the ski tips to a greater degree.	A more centered overall stance with the CM more balanced over the BOS. This position will be much less fatiguing.

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
F#5: Regulate the Magnitude of Pressure Created through Ski/Snow Interaction	Start with a stationary drill focusing on ankle flex of both ankles. Take this into a pumper drill, pumping the boots multiple times in a medium or large radius turn on easy blue terrain. Finish with one slower extension through turn transition and a slow flex from fall line through turn finish. Finally, have the student focus on the sensations underfoot and recognize or even proactively use flexion in the last half of the turn to either create or absorb pressure on the skis.	The skis should start to engage with the snow with a more centered balance point and with more dominance towards the outside ski.	The skier should start to display a more even pattern of flexion and extension using all leg joints. The student should start to be able to use flex/ext to proactively increase or decrease pressure on the skis in easier turns. A smoother and rounder turn should take place.

Fundamental	Body Performance: Prescription for change	Ski Performance:	Desired Outcome
F#3:Control Edging Through Inclination and Angulation	Start with a stationary drill of standing on the snow and moving the skis from edge to edge using the ankles and knees only. Next work on the last half of the turn using a fan progression staying focused on ankles and knees only. Take this movement pattern into linked turns on gentle terrain to begin with.	A slower increase of edge angle to enable more versatility, ie, turn shape, skidded turns, etc.	Ideally the ability to control the DIRT of her edge angles will give her the ability to have a simultaneous initiation and the ability to control everything from skidding to carving.

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

Click on the video link below: <https://www.youtube.com/watch?v=x2KQmk7EIAM&list=PLCxbK4slgTjph15pPW7nxTizum5NMJiM9&index=6>

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 response 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. Binding MAY be a touring type of binding affecting lateral control	The skis should work in this snow condition.	Boots are perhaps a limiting factor in encouraging a more centered stance.