

Movement Analysis

Part 1

Fundamental Movements of Skiing

- ✎ Control the relationship of the Center of Mass (COM) to the base of support to direct the pressure along the length of the ski...Stance/Balance
- ✎ Control the pressure from ski to ski and direct the pressure toward the outside ski...pressure control movements
- ✎ Control the edge angles through a combination of inclination and angulation...edge control movements
- ✎ Control the skis rotation (turning, pivoting, steering) with leg rotation, separate from the upper body...rotary control movements
- ✎ Regulate the magnitude of pressure created through ski/snow contact...pressure control movements

Clinic Outcome: Understand movement analysis through using the Fundamental Movements of Skiing

The Fundamental Movements of Skiing address the 3 planes of movement that we use when skiing. The Fore/Aft movement plane, the Vertical movement plane and the Lateral movement plane. To put it simply, we can **turn** our bodies, we can **tip** parts of our bodies, or we can **bend** our bodies, through the use of opening and closing our joints.

The Fore/Aft plane: We want our COM over the base of support, this can be achieved in three ways. We can move our COM over our feet, we can move our feet to remain under the COM or a combination of both of these movements.

The Vertical plane: We move and keep our bodies perpendicular to the pitch of the hill while moving. Movement in this plane is achieved by the opening and closing of our joints. We also turn our legs around the vertical axis.

The Lateral Plane: These are the side to side movements of our bodies, achieved by tipping of our legs.

The Process of MA

What to look at:

- Whole to parts
- Top down, bottom up
- Skill efficiency= Edging, Rotary, pressure managing movements
- Stance, turn entry and turn shape
- ** Ski Performance/ body Performance
- ** Relationship to the 5 fundamentals (What rotates, what tips)

Body Performance or Actions:

Turn, Tip and Bend

Are joints flexing equally?

Is the outside leg flexed or straight?

Shoulders level or tipped

Is inside leg flexed more than outside leg?

Tipping from the legs or the entire body?

Inside foot ahead, behind, or next to outside foot

Head moving up and down?

Pole swing and touch, part of old turn or new turn

Does body face outside the arc or inside the arc?

Where is skier looking

Ski Performance on Snow Surface: Turn Tip and Bend

Is the arc of the turn round?

Is pivot point under the foot, the tip or tails?

Skis stay same distance apart through turns?

Skis grip snow or slip snow?

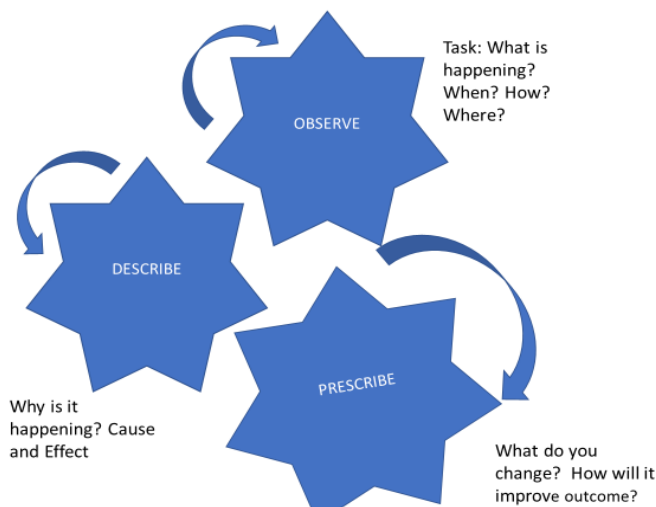
Skis move simultaneously or sequentially?

Where is snow coming off the ski? Sideways or downhill?

Carved or skidded?

Edge angles similar or different?

Look at skiers, what do you see using the above performance questions? Imitate the movement of the skiers, so you can better understand what they are doing, how they are doing it, and why they have to do what they do. Relate your findings to the fundamentals. What are they doing well? Where can we make adjustments or improvements.



This week we are only addressing the Observation and Description part of Movement Assessment and Analysis, so we can better understand what is happening with the Fundamental Movements and skill blend. Part 2 of MA is where we add the Prescription component to the picture. The goal is understanding so you can better meet the needs of your guest, through appropriate observation and ultimate utilization of drills to improve and refine movements.