TECHNICAL 101

Understanding the technical terminology in skiing and snowboarding may be more difficult than the riding itself. There are nuances and jargon that seemingly talk for talking's sake. However, when understood and used properly, the ways we define skiing/snowboarding and its movements will help aid the instructor in understanding how to relay information to our students.

OBJECTIVES

- Understand ski or snowboard levels 1-9
- Understand the skills concept for skiing, or the performance concepts for snowboarding
- Understand the five fundamentals of skiing, or the six fundamentals of snowboarding

SKIING

Ski Levels 1-9

1. Foundations, Glide & change directions out of gravity line. Beginner green terrain only
2. Skating, deliberate turning, using the magic carpet, and developing directional control. Beginner green terrain only.
3. Linking wedge turns on beginner slopes, comfortable on chairlifts, exploring more green terrain.
4. Skiing all greens on the mountain, start matching skis. Exploring all green terrain and beginning to explore easy blue groomed terrain.
5. Wedge Christies, steeper greens and easy blue runs, refined turning of feet & legs, starting use of poles. Hockey stops in both directions.
6. Comfortable on all blue runs in basic parallel, exploring bumps and un-groomed blue, easiest blacks. Start refining tipping moves. Pole touch when applicable.
7. Comfortable skiing all blue and groomed black runs in parallel turns. Increased confidence in variable terrain & snow conditions. Consistent and appropriate pole use.
8. Skiing dynamic parallel turns on all black runs, variable terrain and snow conditions, park & pipe, big bumps. Exploring double black terrain.

9. Mastery of skiing anytime, anywhere, any condition including freestyle and extreme terrain.

Three Skills in Skiing

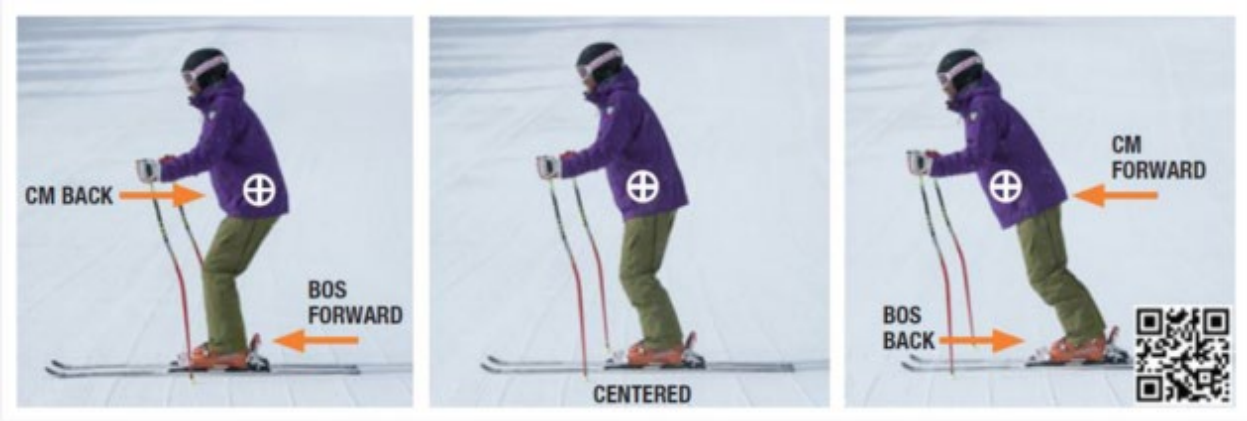
These three skills are the foundation for all movements in skiing and work together to help skiers turn, control speed, and navigate different terrain.

1. Edging
    a. What it is – controlling the angle of the ski's edges relative to the snow.
    b. Why it's important – by tilting the skis, you can make the edges engage with the snow, which allows you to turn and control your speed.
3. Rotary Movements
    a. What it is – the turning, rotational, or steering movements of the feet, legs, and skis.
    b. Why it's important – rotary movements are essential for initiating turns, steering the skis, and moving in different directions.
4. Pressure Control
    a. What it is – managing the amount of weight and pressure you put on each ski.
    b. Why it's important – applying the right amount of pressure to your skis allows you to control your speed, turn, and absorb bumps and other terrain variations.

Five Fundamentals of Skiing

The skier's application of the three skills in skiing

1. Fore-Aft Pressure – Control the relationship of the Center of Mass to the Base of Support to direct pressure along the length of the ski
    a. What it means – good skiers are balanced correctly over their skis relative to their center of mass. The skier isn't riding in the backseat or leaning too far forward.



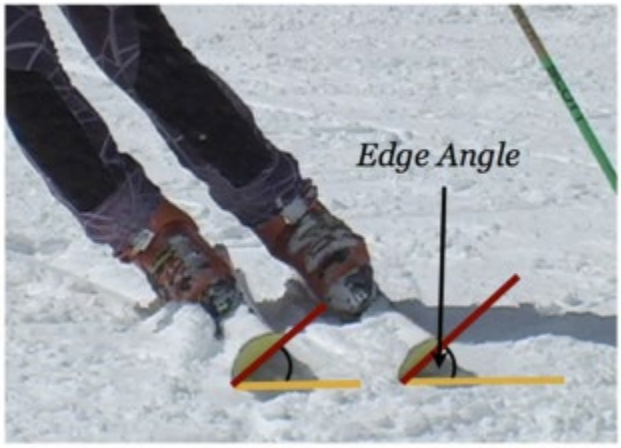
2. Foot-to-foot Pressure – Control pressure from ski to ski and direct pressure to the outside ski

   a. What it means – good skiers pressure the outside ski more than the inside ski during the shaping phase of the turn.



3. Edging – Control edge angles through a combination of inclination and angulation

   a. What it means – good skiers combine angulation (body angles) with inclination (body lean/tilt) to tip their skis on edge. A clean turn utilizing edge angles can contort your body into a "C" shape.





4. Rotary – Control the skis rotation, turning, pivoting, steering with leg rotation separate from the upper body

a. What it means – legs rotate the skis, not the upper body. Utilizing the femur to rotate in the hip socket while the pelvis remains stable, a good skier keeps their upper body pointed down the hill while their legs rotate left to right. Picture an Olympic mogul skier.



5. Magnitude – Regulate the magnitude of pressure created through the ski/snow interaction

a. What it means – to accomplish the "magnitude" skill, all previous skills must be blended. Picture shocks on a bike, dampening the ground's impact through the bike. The skier's body are the shocks, absorbing all bumps fluidly while skiing with "touch." Can also picture an accordion, fluidly expanding and retracting.



SNOWBOARD

Snowboard Levels 1-9

1. Flatland & Mobility
2. Using lifts and developing speed and directional control
3. Linking turns on beginner slopes and comfortable on chairlifts
4. Riding greens on the mountain, start riding switch
5. Starting to ride blue runs, steeper slopes and different snow conditions, ok riding switch
6. Comfortable on blue runs, beginning bumps, medium terrain parks, start riding 1 foot out (on easiest green terrain for teaching / Hand-in-hand purposes)
7. Comfortable riding groomed black runs, WP Halfpipe, solid switch riding on blue to black terrain including some bumps
8. Riding all blacks, park, pipe big bumps and switch. Dynamic riding in variable terrain and snow conditions
9. Mastery of snowboarding anytime, anywhere including dynamic cross-under switch carving, freestyle and extreme terrain.

FOUR BOARD PERFORMANCES OF SNOWBOARDING

1. Tilt
2. Twist
3. Pivot
4. Pressure



Six Fundamentals of Snowboarding

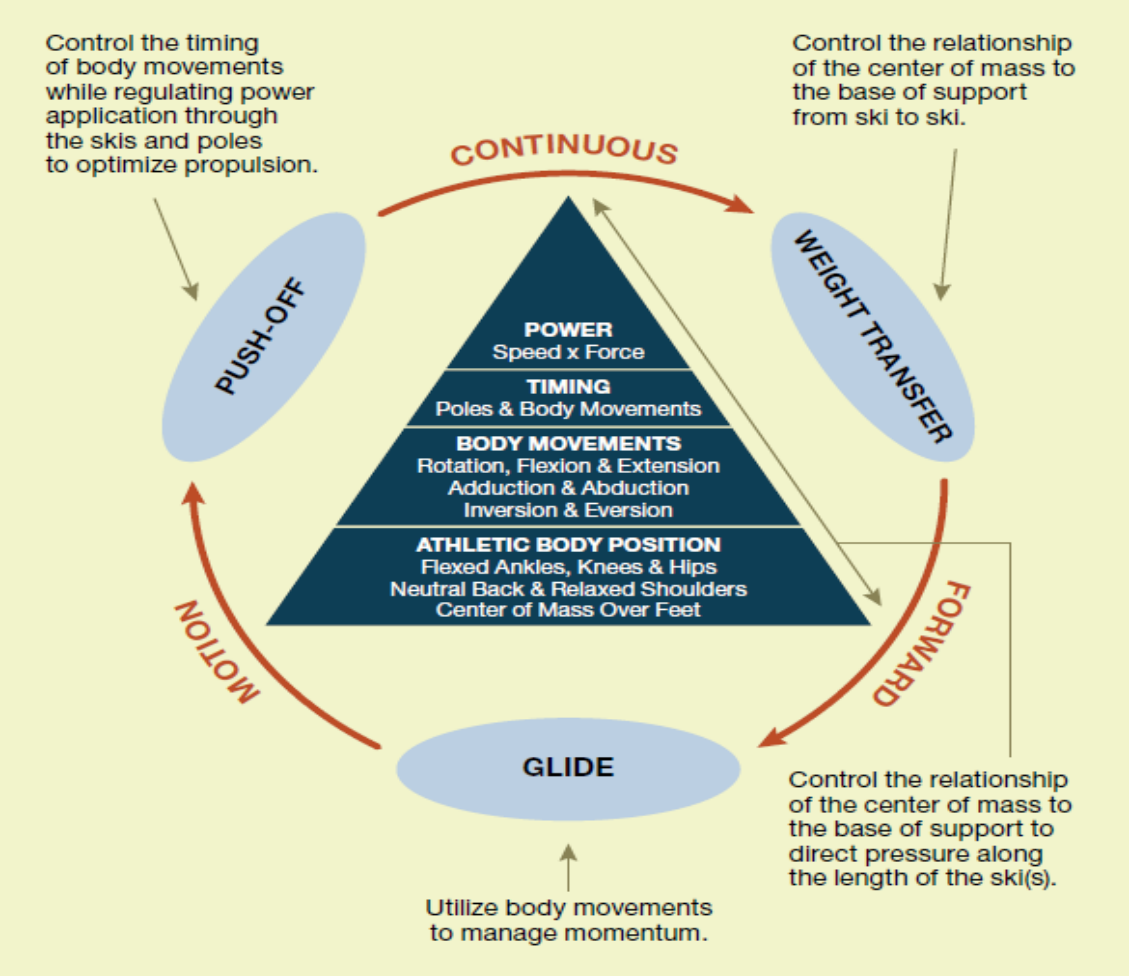
1. Pressure (Length) – Control center of mass to manage pressure along board length
    a. What it means – A good snowboarder keeps their balance centered across the length of the board, not leaning too far forward toward the lead foot or too far back toward the rear foot
2. Pressure (Width) – Control center of mass to manage pressure across board width
    a. What it means - A good snowboarder keeps their balance centered over the width of the board, not leaning too far forwards or too far backwards. Their center of mass is over the effective edge
3. Magnitude – Regulate amount of pressure through board/snow interaction
    a. What it means - A good snowboarder uses flexion and extension appropriately through turn shape and bumps
4. Tilt – Control board tilt through a combination of inclination and angulation
    a. What it means - A good snowboarder will both lean or adjust center of mass (inclination) and use body angles (angulation) to manage the board's tilt
5. Pivot – Control board pivot through flexion/extension and rotation of the body
    a. What it means - A good snowboarder will use appropriate rotation of upper and lower body movements combined with flexion/extension of the body to create a pivot point
6. Twist – Independent leg flexion/extension and rotation for board twist
    a. What it means - A good snowboarder effectively applies opposing movements of the legs, particularly the ankles, where the front foot initiates turn or twist, and the back foot follows

*If you are interested in learning more, refer to pages 15-35 from the Alpine Technical Manual for skiing. For snowboarding, pages 45-55 in the Snowboard Technical Manual. They are in the Volunteer office

CROSS COUNTRY SKIING

XC Fundamentals

1. Control the relationship of the center of mass to the base of support to direct pressure along the length of the ski(s)
2. Control the timing of body movements while regulating power application through the skis and poles to optimize propulsion (Push-Off)
3. Control the relationship of the center of mass to the base of support from ski to ski (Weight Transfer)
4. Utilize body movements to manage momentum (Glide)


Control the timing of body movements while regulating power application through the skis and poles to optimize propulsion.
Control the relationship of the center of mass to the base of support from ski to ski.
CONTINUOUS
PUSH-OFF
WEIGHT TRANSFER
POWER
Speed x Force
TIMING
Poles & Body Movements
BODY MOVEMENTS
Rotation, Flexion & Extension
Adduction & Abduction
Inversion & Eversion
ATHLETIC BODY POSITION
Flexed Ankles, Knees & Hips
Neutral Back & Relaxed Shoulders
Center of Mass Over Feet
MOTION
FORWARD
GLIDE
Control the relationship of the center of mass to the base of support to direct pressure along the length of the ski(s).
Utilize body movements to manage momentum.