



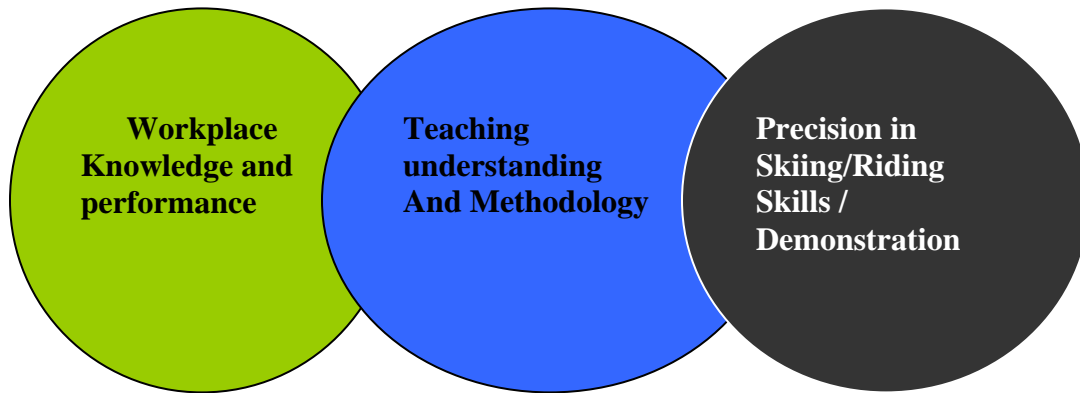
Mammoth Mountain SKI AND SNOWBOARD SCHOOL

Technical Handbook

MAMMOTH MOUNTAIN SKI AND SNOWBOARD SCHOOL
2004 - 2005

Introduction

Our school follows an internationally recognized model for training and evaluating instructor performance. This is a three-zone model emphasizing job performance, Teaching skills and Skiing/Riding skills. For simplicity this module will concentrate on Technical methodology.



The Greatest Instructors have a masterful command of the following:

Patience

Safe skiing and riding practices

Know students - name, favorite things, expectations, child development, teach students of all ages, know what they are talking about

Communicate well with the parents

Fun, smiles, sense of play, humor, personality

Enthusiastic & energetic

Know the sport

Create a Team experience

Good communicator - not too many words but the right ones

Kindness, friendship with kids, supportive, positive

Pacing – know when to take break

Go the extra mile

Deal with stress & adversity; flexibility

Sound skiing and riding skills

Build ego and self-esteem through teaching skills that create a shine in the eyes of students, parents, friends and siblings

On time All the time

TECHNICAL

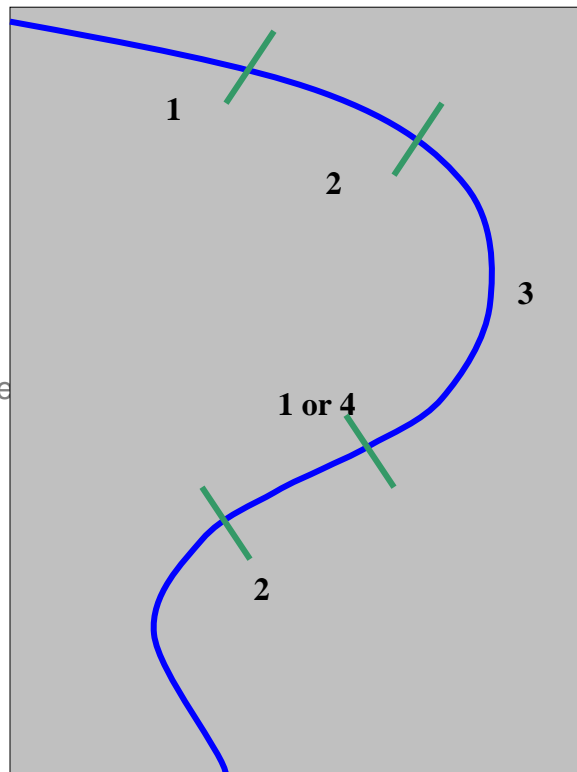
A solid foundation is the prerequisite for any skill building. Technical understanding of our sport is the basis for all teaching. Knowing the reason for teaching each exercise will enable you to correct problems in our guests, riding.

What we teach is turning on skis and board for the outcome of speed control and speed generation.

TURN MECHANICS

PHASES OF A TURN

1. Preparation:
Setting up for the new turn
2. Initiation:
A new turn is beginning
3. Control:
The turn is shaped through the intended arc.
4. Finish:
This phase leads to a traverse or stop.

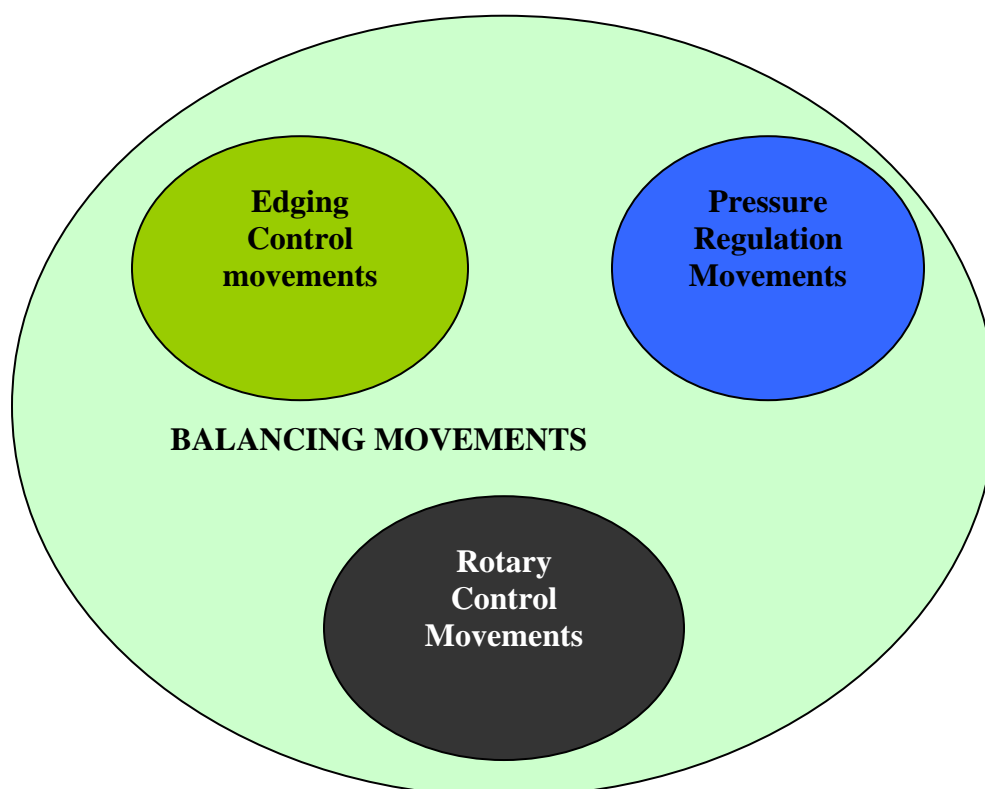


Your understanding of the above phases are vital for accurate movement analysis. Skill application must be referenced to the phases of the turn. Cause and affect relationships are easier to determine using this method.

SKILLS CONCEPT

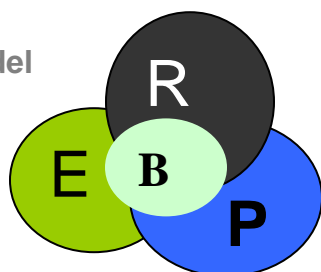
For the purpose of simplicity we will use the internationally recognized 4 skills. This will better serve you, the instructor, as you grow in your understanding. This concept is based on the fundamental movements needed to make your equipment work properly.

Basic Skills Model



Imagine the above diagram to be the skill blending ability of a novice rider/skier. The fundamental skill is the ability to regulate balancing movements. As you or your student improves one or all of the sub skills. Edging, Pressure or Rotary movements the skill of Balance is refined. The more the closely the sub skills overlap the better the riding or skiing performance.

Refined Skills Model



Good Instructors identify the areas of strength and weakness in the application of each skill and then make lesson plans based on the needs of each student. Each lesson plan should focus on the development or correction of a skill. At the end of the lesson segment you should evaluate the success of this focus and either continue to develop this skill or move on to a different skill focus.

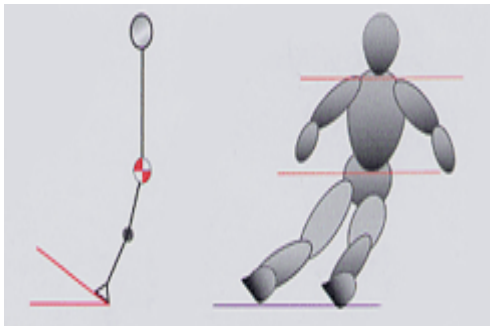
Movements associated with each skill

EDGING

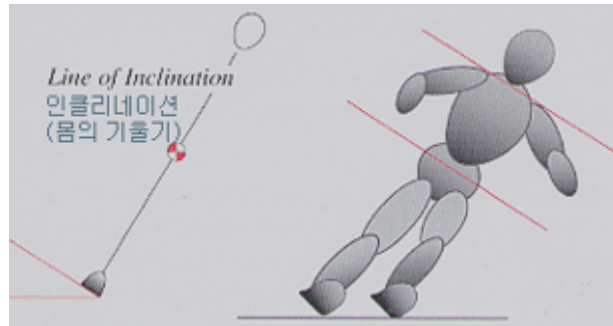
Edging movements are executed by creating angles in the ankles, knees, hips and spine. We call this angulation. Inclination or banking can also be used to edge a ski or board, however, this movement is generally imprecise.

Crossover and crossunder are edge change movements.

Angulation



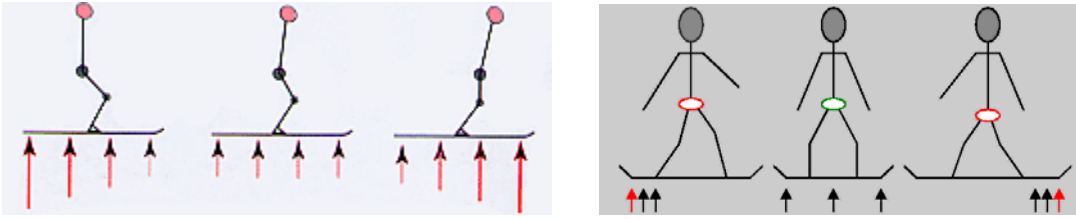
Inclination



PRESSURE

Pressure regulation movements are executed with muscular effort from the legs while flexing or extending. Pressure can be applied foot to foot or by fore aft leverage.

Up/down unweighting, terrain and rebound unweighting are examples of pressure control movements.



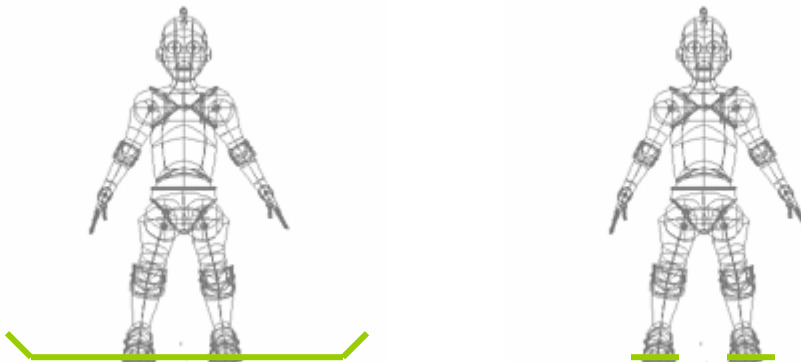
ROTATION

Rotary control movements are executed by turning the legs, hips, upper body or a combination of all three. Counter rotation or counter motion is when one section of the body is turned in opposition to another.



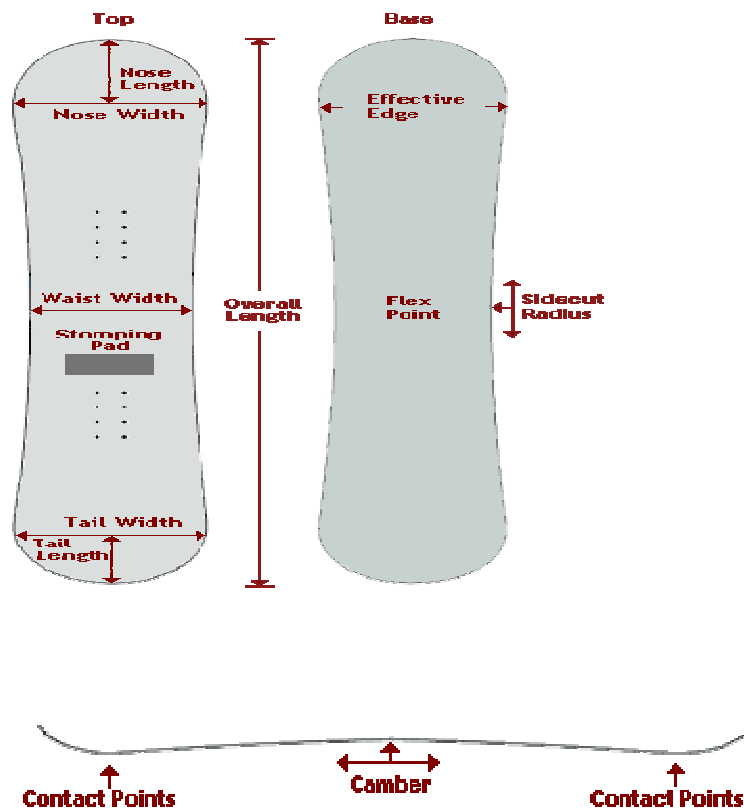
STANCE AND BALANCE

A functional stance is the prerequisite for development as a skier or rider. Weight should be on both feet. Hand and arm position have an affect on performance and aid in balance.



EQUIPMENT

Skis and boards have the same characteristics.



Flex patterns, designed radius and binding mounting system vary depending on discipline and manufactures. P-Tex base material and metal edges are common in all skis and boards.

Knowing the attributes of your student's equipment will aid in your ability to analyze the movements of your students and make sound lesson plans.

SAMPLE MOVEMENT ANALYSIS MODEL

1. Address the ability of the rider/skier

This person is _____. (Beginner, Intermediate, Advanced, Expert)

2. Equipment assessment

Appropriate board/ski length

Stance width/angles

Canting issues

Forward lean

Boot Fit

Turn description

3. Address type of turn

They are making _____ turns

SKI (Wedge, Wedge Christy, Open Parallel, Long/Short, Skidded/ Dynamic)

Snowboard (Side slipping, Falling Leaf, Linked, Toe/heel side, Skidded/Dynamic, Carved)

4. Address terrain, snow & tactics

The terrain is _____

Groomed terrain, bumps, steeps, powder, crud, ice, park etc.

The rider/skier is _____ on this terrain (bored, lazy, comfortable, challenged, scared, etc)

Skills Assessment and Turn Mechanics

5. Address balance and stance issues

This skier/rider is in/out of balance _____ (fore/aft, lateral, joints stacked or not)

This skier/rider stance is _____ (tall/flexed, square/countered, wide/narrow)

This skier/rider has/is not using functional hand and arm movements at _____ (preparation, initiation, control phase)

6. Address rotary skills

This rider/skiers primary rotary skill is _____

Leg steering – rotation (upper body, hip, counter)

Active guiding and shaping of a carving board/ski

Sequential / simultaneous movements

Anticipation /counter rotation

7. Address the edge control skills

This rider/skier is edging through _____

Angulation of hip, knee, spine

Inclination. Crossover/under, banking

Equipment is carving, skidding, slipping

8. Address pressure control skill

This rider/skier is using _____

UP/DOWN, terrain, rebound unweighting

Foot to foot, lateral, fore, aft

Extension/retraction

Absorption

The thought process when analyzing skills should include:

What you like about the movements and what movements the student needs in order to make to improvement. Practice some drills or exercises to target the development of these skills:

Practice this Movement Analysis model while watching the skiing/riding public. Try to verbalize the performance. Skills will rapidly improve with practice.

GLOSSARY OF TERMS

Angulations

Creating angles with the body to maintain balance over the edge of the ski or board.

Anticipation

Mental and physical anticipation of movement into a new turn.

Balancing

The action of maintaining equilibrium, either dynamically or statically.

Banking

See Inclining.

Blocking

Stabilizing the torso by muscular contraction or through the use of a ski pole. This is usually performed at turn initiation.

Carving

A turning of the ski or board with little lateral movement of the equipment. The tip and tail of the board should pass thru the same point in the snow.

Christie

A ski term that means both skis are skidded at some point in the turn onto corresponding edges.

Counter- rotation

Turning the skis or board by twisting the legs and torso in the opposite direction.

Deflection

A change in direction resulting from the interaction of the snow and the equipment. This is a change of direction caused by external forces.

Down-unweighting

See pressure control

Edge angle

The degree of tilt of the equipment about its longitudinal axis in relationship to the snow surface.

Edge change

The most fundamental aspect of turning. Edge change can occur with or without snow contact.

Edge control

The action of adjusting the edge angle of the equipment to the task at hand.

Fall-line

The line of least resistance down the slope.

Garland

Making a series of direction changes that do not lead the skier/rider across the fall-line.

Inclination

Deviating from a vertical body position in order to set up for, or compensate for, the effects of centrifugal force.

Initiation

The phase of a turn where the edge or edges are changed in order to facilitate a direction change.

Leverage

Refers to applying deliberate pressure fore or aft of the mid point of the equipment.

Pivoting

Turning the skis or board about an axis perpendicular to the base of the equipment.

Pressure control

The action of actively adjusting the pressure exerted by the equipment against the snow.

Rebound

The recoil or effect of springing back in response to the forces of compression exerted on the body mass of the rider, equipment and snow.

Side-slipping

See slipping

Skidding

The composite result of equipment (ski or board) moving forward sideways and pivoting.

Skills

A specific movement sequence related to the accomplishment of a single task.

Sliding

The movement of the equipment (ski or board) in the direction of their longitudinal axis.

Slipping

A movement of the skis or board sideways.

Steering

The result of the rider's muscular effort to guide the equipment along the desired path.

Traversing

Sliding in a direction that deviates from the fall-line.

Torsional twist

A snowboard term, the result of muscular effort to twist the board around its longitudinal axis.