CATAMOUNT
ALPINE RACING TEAM

U8-10 Race Program

Development & Training Goals

Challenges for Young Ski Racers

- High Center of Gravity – **Head size** relative to body development
  - Taller skiers have even greater issues
- **Fear of releasing ski edges in transition – Edges provide control**
- Overactive upper body
  - Coordination immaturity and use of upper body to initiate lower body movements
  - Pole touch becomes swing
  - Over-rotation drives uphill hand backwards
- Underactive Upper Body – potential coordination or strength maturity
  - Low hands
  - Upper body follows turn
- Inability to set edge – Strength & Equipment Issues
- Initiation of turn with hips
  - Incorrectly rewarded for parallel skis and edge angles

Physical Maturity

- Physical Maturity is not just size and strength
- The ability to control their bodies starts at the core and develops outward
- Body management and the ability to focus on moving objects develops later
- At ages 6 - 9, kids can be widely varied when it comes to co-ordination and physical literacy

For U8-10 Racers some skills will develop more with maturity than with repetition and effort

USSS Long Term Athletic Development

US SKI & SNOWBOARD

Alpine Training Systems

Development Phases Domain

Elements	Phase	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
	Biological Age	Early Childhood	Late Childhood	Pre-puberty before growth spurt	Puberty and growth spurt	Post Puberty after Growth Spurt	Full Maturation
	Chronologial Age	2-6 years old	6-10 years old	Girls: 9-13 Boys: 10-14	Girls: 11-15 Boys: 12-16	Girls: 12-17 Boys: 14-18	Girls: 16+ Boys: 17+
	Time in Sport	1-4 years in sport	2-5 years in sport	4-7 years in sport	5-8 years in sport	6-11 years in sport	10-15+ years in sport
	Training Volume	50 hours per season 1-2 sessions per week	150 hrs/season 2-3 sessions per week	220 hours/season 3-5 sessions per week	360 hours/season 4-6 sessions per week	480 hours/season 5-7 sessions per week	540 hours/season 5-7 sessions per week
	Summer/Off season Training	None	0-5 days	10 days	20 days	25 days	30+ days
	Coached Freeskiing	75%	60%	45%	30%	20%	15%
	Coached Drills	10%	20%	20%	20%	20%	15%
	Coached Gate Training	10%	10%	25%	35%	40%	45%
	Competition Simulation	5%	10%	10%	15%	20%	25%
	Freeski with friends and family	As much as enjoyable	As much as enjoyable	As much as enjoyable	As much as enjoyable while balancing rest, travel and recovery needs.	As much as enjoyable while balancing rest, travel and recovery needs.	As much as enjoyable with necessary balance of rest, travel and recovery needs.
	Complementary Sports	Participate in many physical activities. Explore individual coordination or balance-based sports. Team sports to build teamwork, ethics, and fair play.	Participate in many sports and activities. Active participation in coordination or balance-based sports. Participation in team sports build teamwork, ethics and fair play.	Continue to participate in many activities and sports. Begin to identify with primary vs. complementary sports.	Continue to participate in complementary sports while identifying clear goals in primary sport.	Use complementary sports and activities for variety and to enhance aerobic conditioning by increasing training volume in all activities.	Use complementary sports and activities for injury prevention, avoiding burnout, and to maintain all aspects of physical fitness.

Physical Fitness Domain

	General Concepts	Begin to develop fundamental movement skills through play, fun, novel activities.	Increase play to develop and enhance specific elements of physical fitness in open environments.	Start to incorporate focused dryland training 1-2 days per week. Enhance body awareness, balance, timing of moevements and spatial anticipation through games and drills.	Physical fitness is becoming an integral part of the season. 1-3 sessions per week. Increase hours of training with varied volumes and intensity.	Implement periodized training with varying volumes and intensity. Training is now essential to seasonal programming with 2-3 sessions per week and off-season fitness plans.	Multi-year periodized training plans with varying volumes and intensity are essential to prepare for full competition, training loads and long term performance.
	Growth and Development (Body Composition)	Body begins to develop into adult-like proportions in terms of how various body parts relate to each other. Muscle mass increases and fine motor skills begin to emerge.	Body continues to develop into adult-like proportions. Rate of growth slows, strength increases and ability to perform fine motor skills increases.	Rate of growth increases again in preparation for adolescence. Growth rate may have adverse effect on agility, balance and coordination. Weight and height increases.	Rate of growth reaches peak (Peak Height Velocity). Bodies reach adult heights, muscles grow rapidly while muscle to fat ratios differ between males and females. Heart rate, cardiac output and respiratory capacity increases leading to greater tolerance for exercise.	Growth rate slows and stops. Bodies are adult in proportion and muscle to fat ratios. Very little change in height from this point forward. Muscular, skeletal, cardio and respiratory functions are fully formed with capacity for heavier exercise or training loads.	Body finishes adolescent growth and development.

Development Goals

- Teach core skiing skills in an **Athletic Environment**
  - Fundamentals are universal but skill acquisition is designed for ski racing (building speed through turns)
- Goal setting is based on **skill acquisition**
- Racing is meant demonstrate skill acquisition and learn to **mentally manage** the race day environment. Results should be minimized.
- Kids get to balance **responsibility** and **greater freedom** in the training environment
- Social connections are a real benefit and although ski racing is an individual sport, **team** relationships support development

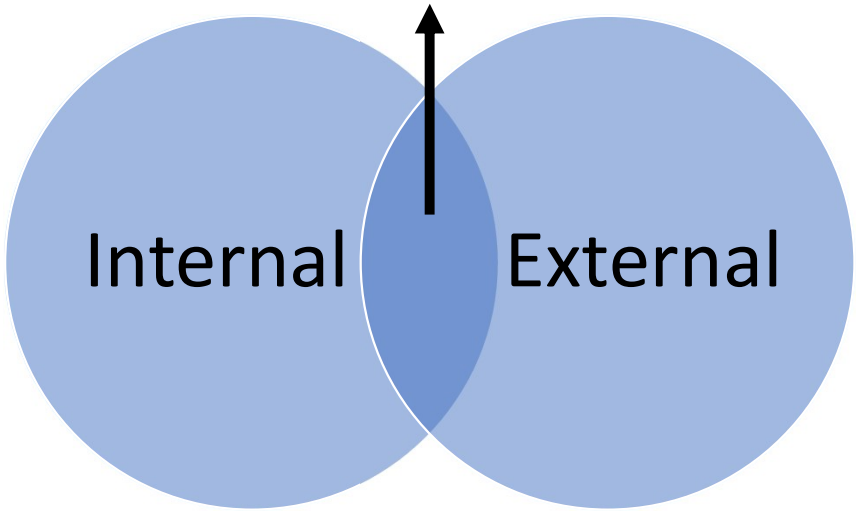
It often goes unnoticed that U8-10 racers develop the ability to show up to each practice, manage equipment, deal with adverse weather conditions, and keep motivated over an entire weekend.

Locus of Control

Internal: **What I can control**
- Show up prepared
- Focus
- Try Hard
- Positive Affirmation

External: **What I cannot control**
- Snow conditions
- Weather
- Racecourse
- Mountain conditions

Success:
Positive Internal Locus overcomes
negative external locus



I **Can't do it** **It's Unfair**

Negative:
Parents need to encourage
a positive internal view and minimize the
Focus on the negative external factors

Ski Racing Success is Based on Repetition

- World Cup Ski Runs in SL and GS take one minute or less
- First to Tenth place is often less than a 2 second differential
- This level of perfection is developed on the base of near perfect skill sets and endless numbers of runs
- Think of it as a gymnastic routine that occurs on different terrain, snow conditions, and gate sets
- Mental preparation for a race run cannot be underestimated

U8-10 Ski Technique Goals

- **Understand Body Position**
  - Athletic Stance
  - Three Key Body Parts
  - The Pendulum (separation)
- **Executing a Turn in Three Body Parts**
  - Look ahead through the next turn (head)
  - Pole Touch (upper body)
  - Pressure Outside Ski from Feet to Knees (lower body)

Phase 2 & 3 USSS Skill Quest – Execution of Goals

SKILLSQUEST ASSESSMENT TABLE

Skill	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Pressure	Pole jumpers	Pole jumpers in tuck	Straight run in wave track	Linked turns in wave track	Camel jump in wave track
Edging	Outside ski turns	One ski skiing	One ski skiing with lane changes	One ski skiing without poles	One ski skiing hourglass
Rotary	Straight run to side slip with edge set	Pivot slips	Sideslip to straight run to sideslip	Hop turns	Vertical brush quickness course
Balance	Freeski with pole usage	Freeski – lane changes	Freeski – hourglass	Freeski – varied terrain and snow conditions	Freeski – moguls in "V" shaped corridor

U8-10 Skill Development

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USSS Long Term Skill Development

Technical Domain							
	General Focus	Active start - Learning and fun environments	Adventure stage - Skiing all terrain, exploring the mountain	Technical stage - Developing precision of basic skills while learning advanced techniques over a variety of terrain and features	Tactical stage - Application of technical skills to Event/Discipline specific tactics.	Technical and Tactical Stage - Refinement and blending of specific technical and tactical skills.	Mastery and Innovation stage - Event/Discipline specific technical and tactical mastery.
	Athletic Stance and Balance	Ski stance is athletically adaptable. Can ski medium radius turns with parallel skis while maintaining balance. Upper body (pelvis and torso) orients down the fall line.	Can balance on the outside ski. Leg rotation is independent of upper body (torso and pelvis) to initiate short radius turns. The body stays perpindicular to terrain changes.	Able to demonstrate a clear balanced weight transfer in transition. Able to initiate turn on either inside or outside ski. Beginning to utilize fore aft pressure throughout the turn. Can maintain ski to snow contact on most terrain.	Utilizes tip pressure at turn initiation to create a carved turn and fall line pressure. Can give self-feedback in regards to rotational balance. Ability to adjust edge angle to required turn radius and maintain a strong outside leg to resist turn forces. Can separate arm action from torso.	Utilizes pressure control along entire length of ski in a smooth, progressive manner. Has reactive ability to move from ski to ski to adjust pressure. Can establish pressure in the fall line or above in certain situations. Can generate speed on flatter slopes.	Aware of the path of the CoM and it's relation to the shortest path in the race course. Can adjust turn radius with edge angle, re-direct and stivot to achieve a combination of shortest line to maintain speed. Can generate speed through leg extension as conditions permit.
Elements	**Skills (Rotary, Edging and Pressure)**	Movements are varied, such as; wedge, parallel, converging & diverging steps, skating, etc. leading to outside ski dominance. Able to move from foot to foot and jump off both feet. Can turn both legs in same direction.	Skier demonstrates outside ski dominance throughout the turn, and becomes aware of the skis orientation on the snow. Skier demonstrates rotary, edging and pressure skills individually and within a ski turn.	Skier is able to edge ski in different phases of the turn. Edging is achieved by angulation and/or inclination as turn radius and speeds change. Rotation comes from the hip socket.	Round turns are enhanced through fore/aft pressure regulation and progressive edging. Rotation comes form the hip and can be combined or separated with edge release skills.	Able to modulate pressure and adjust edge angle for all turn shapes while maintaining a high tuck in most speed event turns with minimal speed loss.	Able to adjust pressure in the turn to maximize speed in non fall-line sets. Mastering fore/aft pressure control to minimize speed loss and maximize speed gains.
	Turn Strategies	Able to make short, medium and long radius turn relative to the skier's physical size.	Turn size and shape is dictated by the skier. Activities emphasize a wide variety of turn shapes and sizes. Athlete is able to make short, fast rhythmical turns.	Ability to maintain turn shape in a variety of turn sizes. Explore turn size allowing for smooth arc to arc execution.	Can ski medium terrain with pressure in the fall line and learning to apply fall line pressure in steep terrain with minimal speed loss. Skier understands the relevance of skidding vs. non-skidding skis.	Linking turns of a variety of sizes and shapes on all terrain and conditions while maintaining speed. Able to limit speed loss during high speed skidding (stivot) maneuvers.	Can adjust turn radius during a turn through independent leg rotation and edging. Able to maintain and gain speed for out of fall line sets. There is flow from turn to turn when rhythm changes in the race course.
	Coordination of Movements	Leg rotation is simultaneous while maintaining a parallel relationship between the skis. Can skid down the slope on the uphill edges while maintaining parallel skis. Can flex and extend the lower body proactively and reactively in certain situations.	Leg rotation is smooth that may be complimented with leg flexion and extension movements. Lower body rotation starts to show separation from upper body. Upper body shows discipline complimented with an arm carriage that may facilitate contributory pole action.	Turn initiation movements appear to start in the ankles and move up the kinematic chain. Upper/lower body separation is demonstrated by a stable upper body biased down the hill or race line. Optimal ski to snow pressure is maintained through gross and micro leg movements.	Upper body remains quiet in space resulting from an equal and opposite contribution relative to the lower body. Arm action is independent of torso. Moving into and out of tuck does not influence ski to snow pressure.	As situations dictate, legs can act independently to generate edging, rotation and pressure. Smooth translation of fore/aft movements throughout the turn.	Instinctively adapts turn initiation strategies to changing race situations. Has mastery of each skeletal joint's movements in multiple planes. Can manipulate these degrees of freedom as needed to influence ski to snow pressure.

Athletic Stance

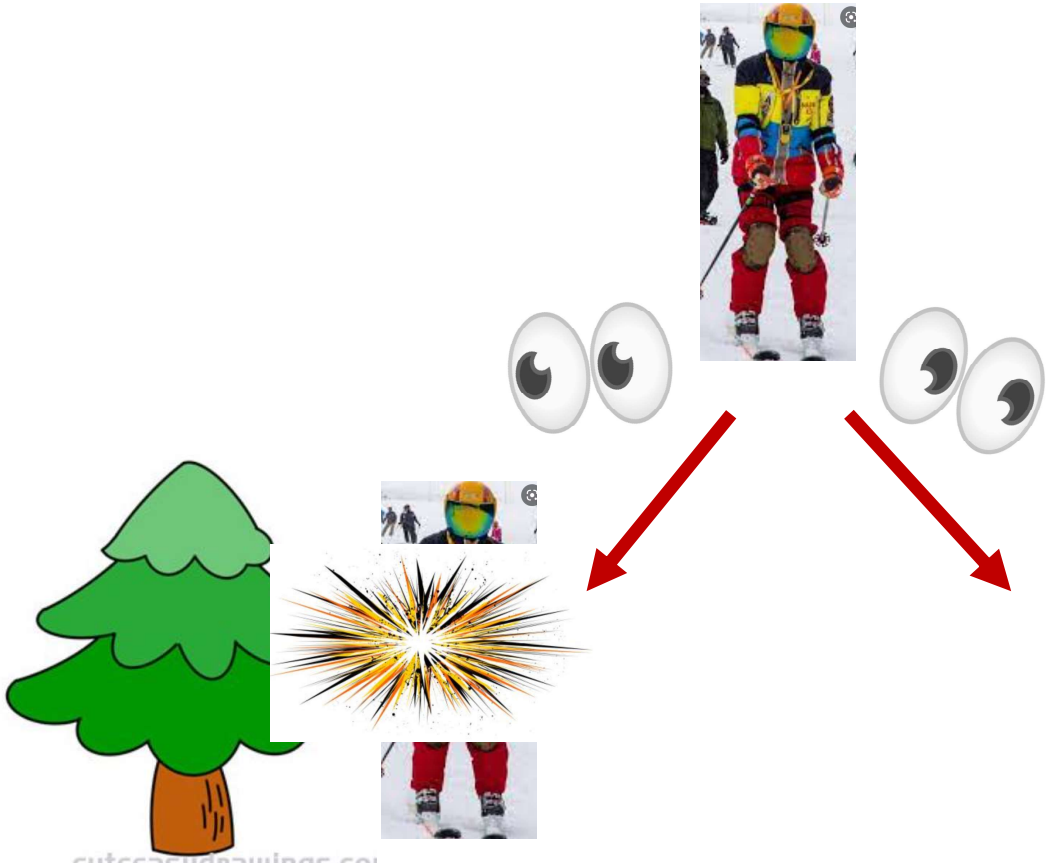
Three Body Parts

1 Head: The eyes take us where we want to go

2 Upper Body: helps provide the Athletic base for our turns

3 Lower Body: Makes the turns starting at the feet to ankles to drive the skis on edge

The Head: You go where you are looking



Jerry Sees Pine Tree

Jerry does not want to ski into pine tree

Jerry stares at pine tree

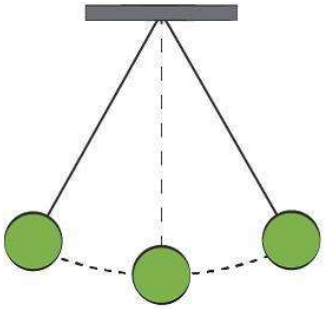
Jerry Crashes into pine tree

Jerry should have looked at where he wants to go

Don't be Jerry

Where is he Looking?

The Pendulum



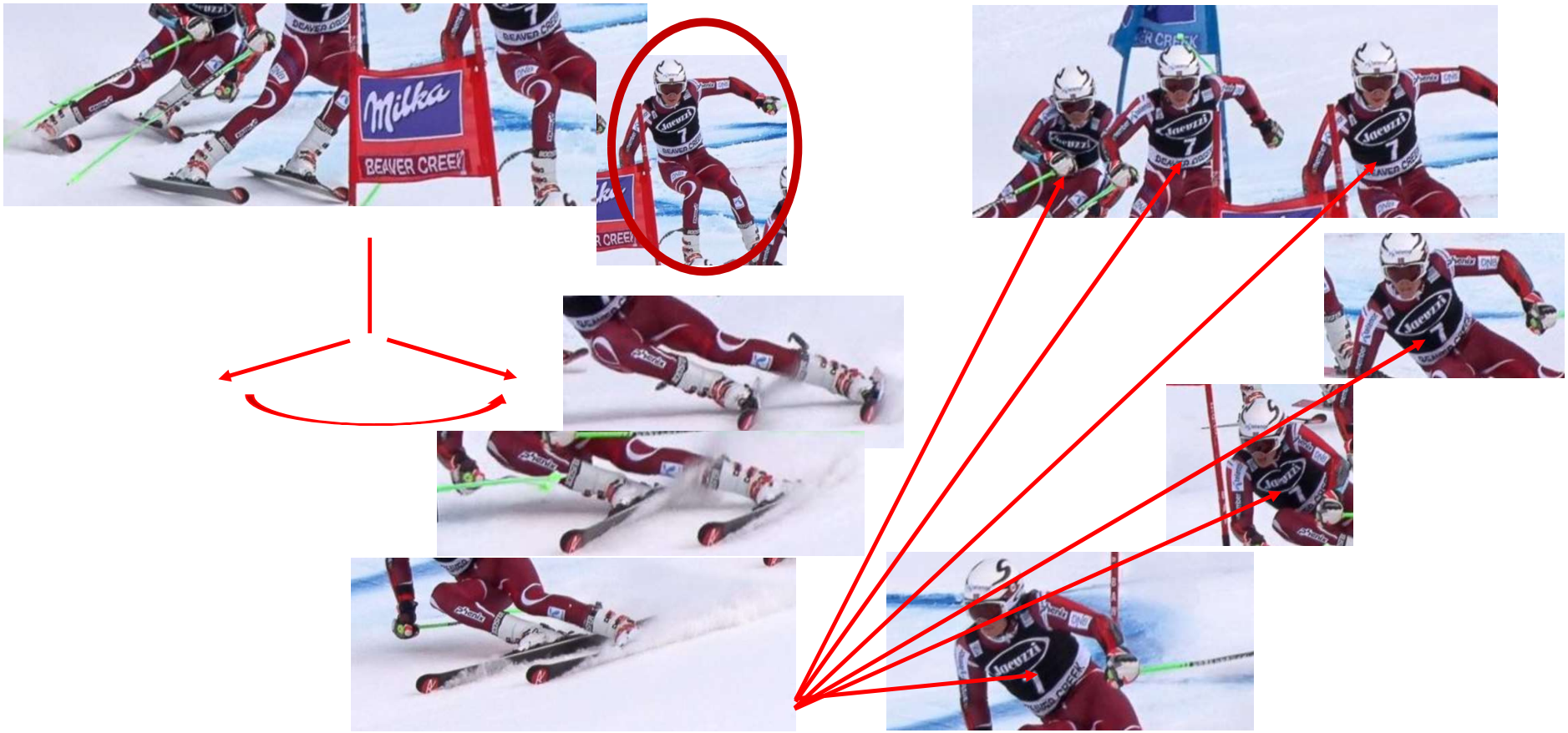
Lower Body: Feet, Ankles, Knees

Athletic Stance: Edge Released

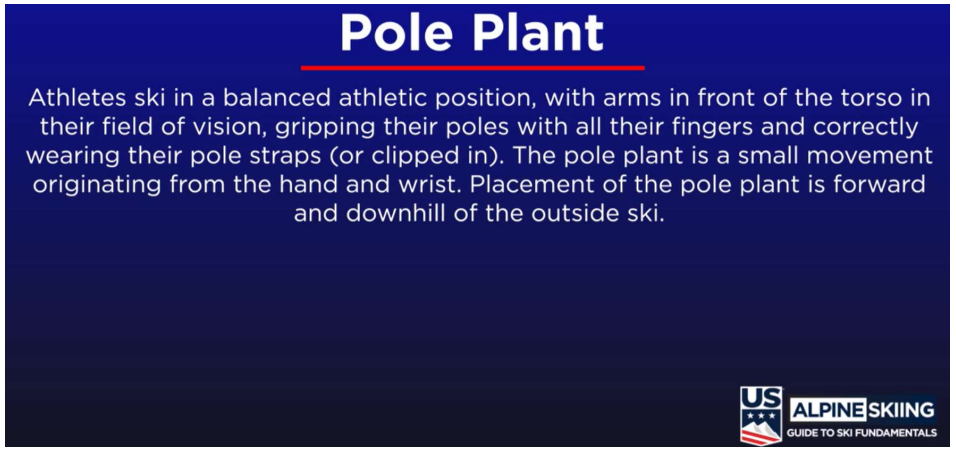
Feet & Ankles Start Edge

Knees Follow

The Upper Body Separated from the Legs



The Pole Plant (Touch)



The three-panel sequence takes place in **less than one second**. Focus on the forearm. The wrist is cocked, and forearm brought up. There is no arm swing at the shoulder and hands stay forward

What about “Feel?”

Individual mechanics can be broken down into drills, **but….**

Successful ski racing requires all the component mechanics to happen fluidly while adjusting to:

- **changing pitch**
- **surface and**
- **gate set**

This is not so teachable and what free skiing is all about

Its not all about going fast as possible

Feel/Touch/Execution **vs** Aggression/Risk Taking

Forehand-Backhand…..Right Turn-Left Turn

What to Take Away

- Race skiing analysis tends to be physiologically complex. At the U8-10 Level we introduce a few simple concepts
- Concepts: Athletic Stance, 3 Body Parts, Turns start at the **feet** setting and releasing edges combined with a Pole Plant
- We must recognize the physical maturity level of each racer
- Ski racing success comes from **internal confidence**, and the ability to repeat skills in an ever-changing **external environment**.
- U8-10 racers develop a familiarity with the routine of practice and racing in order to develop confidence

How De We Make It “Fun”?

- We Focus on Skill Specifics Early, Followed by More Free Skiing Later in the Day
- “Gamify” Skill Development and Add Variety & Exploration to Free Skiing
- Shift Plan when Fatigue or Weather Conditions Reduce Focus
- Keep Group & Team Environment by Setting Different Goals for Individual Racers
- Allow Racers to Pick Individual Drills or Variations
- Very Limited Gate Training (A bit more if we have “Hero Snow”)
- Short Course Skill Segments Used for Fun Skill Development & Flexibility

There are times when it’s not fun. Sometimes It’s Tough and Frustrating;
These are the times where positive affirmation of effort and progress replaces fun
This is how character is built

Goals

- Build the mental, physical, and skill **foundation** for success as a ski racing athlete
- Mentally and Physically **healthy** kids
- Parents help to develop the **Locus of Control** that supports a positive self view