



# PSIA-Central: Level I Alpine Certification Study Guide

Wedge Pathway, Hybrid Pathway, and Parallel Pathway. Three paths, one result.

# 2006

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# Introduction

## History

Welcome to the education process for the Professional Ski Instructors of America-Central division (PSIA-C). The Professional Ski Instructors of America (PSIA) is a national association of ski instructors committed to the **development of a life-long passion for the Alpine environment**. PSIA was founded in 1961 and is the parent organization of the Central division (PSIA-C). Each division has the power to assess dues, train, and certify ski instructors. Certifications have reciprocity between divisions.

## Why Become Certified?

While PSIA-C is an education based organization, offering a wide variety of training and exploration options for our members, it also recognizes that many ski instructors like to assess, validate, or acknowledge their accomplishments as ski instructors. This is the purpose of the certification program. Certification carries with it some advantages. Certified ski instructors may receive discounts on gear from manufacturers, lift tickets from ski areas, and may receive wage increases at their home areas.

PSIA-C also recognizes that not every member has interest in becoming certified. Consequently, we offer a variety of different educational programs.

## How to Become Educated and/or Certified

PSIA-C has developed a Portfolio to help members understand the pathway to certification and document their education. Regardless of whether your goal is education or certification, you should get a copy of the Level I Portfolio (available at <http://www.psia-c.org/Education/PSIACLevel1Portfolio.pdf>).

If your goal is education, the portfolio provides a framework with which to document and plan your education. In this case, you need only be a divisional member.

If your goal is certification, you must be an active member of PSIA-C (more information available at <http://www.psia-c.org/Education/index.htm>) and log at least 10 hours of teaching time.

## Goal of the Alpine Level I Study Guide

This document is intended as an educational tool for the entry level instructor. This document's goal is to help develop the skills necessary to teach beginning level students. As ski instructors, most of our responsibilities and duties fall into three categories:

- **Customer Service**
- **Skiing**
- **Teaching**

A level I exam will evaluate those three categories (customer service, skiing, and teaching) in the context of:

**Professional Knowledge**

**Skiing ability**

**Teaching Ability**

More specific information on certification requirements is available in the National Certification Standards, (available in Appendix A and at [https://www.psia.org/psia\\_2002/alpine\\_t.asp?mode=alp\\_cert\\_stands](https://www.psia.org/psia_2002/alpine_t.asp?mode=alp_cert_stands)).

This study guide is not intended to provide all information that may be tested in an Exam, but is a high yield study document for those preparing for an exam.

## **How to use the Alpine Level I Study Guide**

This document should be used in conjunction with the Core Concepts, the Alpine Technical Manual, the PSIA Children's Instruction Manual, National Certification Standards, and the Alpine Technical Video. You may come across unfamiliar terminology as you read through the document. In that event, you may refer to the Alpine Technical Manual's glossary and/or text for explanation. This document is organized by the category of responsibility listed above (Customer Service, Skiing, Teaching) which parallel the organization of the National Certification Standards.

## **How to Prepare for a Level I Exam**

1. Become an Active Member of PSIA-C (visit [www.psia-c.org](http://www.psia-c.org))
2. Get a copy of and read the Portfolio (<http://www.psia-c.org/Education/PSIACLevel1Portfolio.pdf>)
3. Read the Alpine Technical Manual
4. Read the Core Concepts
5. Read the current Alpine Level I Study Guide
6. Read the Registered and Level I National Certification Standards (Appendix A)
7. Shadow lessons to learn how others teach
8. Teach at least 10 hours
9. Train with your ski schools training staff (you may wish to seek out a training accredited instructor)
10. Consider taking PSIA-C education events in preparation
11. Document all your preparation in your Portfolio

# Customer Service

A ski instructor not only represents him/herself, but also the ski school, ski resort, and PSIA. Customer service is one of the most important things that we, as instructors, do. In PSIA we describe the way we interact with customers as “**Customer-Centered.**” In order to act in a customer-centered way, **a good rule of thumb is to try to see every situation from the perspective of the customer or fellow employee.** Every time we interact with a customer, we will leave a positive, neutral, or negative impression. Each of us has the ability to positively impact a customer’s perception of the ski area, the ski school, or the employees. It is important to be aware of customer service not only when teaching a lesson, but anytime you can impact a customer’s perception. Another way to improve customer service is through our interactions with other mountain employees.

When we treat our fellow employees with respect and clearly communicate in a constructive way, we facilitate better service and a friendlier environment throughout the resort. Given the fact that the number one reason for a customer to not return is perceived employee apathy, customer service represents one of the greatest opportunities for us to inspire a life long passion for the alpine environment.

## Safety

Our first duty to our students is to their **Safety**. Before students can have **Fun** or **Learn**, they must feel safe. A student that feels safe and is having fun is a student who is learning. Safety is a concern throughout our lessons, and should be addressed whenever appropriate. Many safety concerns can be addressed at the beginning of the lesson as you assess (See “Assess the student” on page 14, under “**Set** the Goal” in “**Learning**” section) the student and set goals, others need to be monitored throughout the day. Some of these concerns include:

**Equipment-** Are the boots/bindings/pole straps properly adjusted and in working order? Is there dangerous loose clothing? Has anything broken, loosened, or fallen off?

**Weather-** Are the students adequately clothed? Are you standing out of the wind? Does the class need warm up breaks throughout the day? Have the temperature or conditions changed? Do we need to add/remove clothing? Are we shielding the class from the weather when possible?

**Physical Condition-** How athletic do our students appear? Do the students have previous injuries that we should know about? Can we assess their body structure/alignment to recognize limitations (see Appendix D)? Are people getting fatigued or do they need a break (injuries are much more common when people are fatigued)?

**Terrain-** What is the appropriate terrain for the student’s ability level? Are we ready to move to more difficult terrain?

**Psychological Condition-** What is the student’s motivation for skiing and the lesson? Do they have fears or anxiety? What are their goals? Have our goals, motivations, fears, or anxieties changed?

**Ski Etiquette-** Students should be made aware of the **Skier's Responsibility Code** (listed in table 1 below). Are we Role Modeling the Skier's Responsibility Code?

Table 1

**The Skier's Responsibility Code**

Modified from the Alpine Technical Manual (2002)

1. Always stay in control; in such a manner that you can stop or avoid those below you
2. People ahead of you have the right of way
3. Stop in safe places for you and others (where you can be seen from above)
4. Whenever starting downhill or merging, look uphill and yield
5. Use devices to help prevent runaway equipment
6. Observe and obey all signs and warnings; keep off closed trails
7. Know how to ride the lifts safely

## Fun

The most effective instructors are those who have fun with their students. Instructors may have the best ability of anyone a first time skier sees throughout the day to inspire a life-long passion for the alpine environment. The following is a list of suggestions to help make lessons more fun for students:

### **Communication**

- Learn everyone's name
- Use appropriate humor whenever possible (it grabs student's attention)
- Ask students questions, and encourage them to ask questions
- Use demonstrations

### **Individual Attention**

- Try to make each student feel special
- When speaking to a student, use their name
- Make eye contact with students (it shows interest and concern)
- Do not leave struggling students behind

### **Enthusiasm/Positive Attitude**

- Show emotion and excitement, it rubs off
- Use specific positive reinforcement (ex. "Johnny, you have great shin-boot contact and it makes you look very balanced on your skis.")

### **Comfort Zone**

- Students must feel comfortable and safe before they can have fun or learn
- Introduce and practice new movements and maneuvers on familiar terrain before moving to more difficult terrain

### **Games/Activities**

- Tailor your approach to engage the interests of the students
- Think outside the box

For more information on Customer Service see:

[https://www.psia.org/psia\\_2002/education/core/intro\\_to\\_services\\_model\\_doc.pdf](https://www.psia.org/psia_2002/education/core/intro_to_services_model_doc.pdf)

[https://www.psia.org/psia\\_2002/education/core/service\\_model.pdf](https://www.psia.org/psia_2002/education/core/service_model.pdf)

The Alpine Manual (1996)

Core Concepts (2001)

## Skiing

In many cases, an instructor's ability to demonstrate is paramount to the success of the students. Being a "good skier" isn't always enough. We need to be able to effectively communicate what we are trying to do through movement (non-verbally) in each phase of the turn (for more information of phases of the turn, see Appendix B of this document). The image we give our students is the one that they will attempt to mimic. Further, our choice of ski equipment may facilitate or inhibit our ability to demonstrate for our students. For example, if you had students on short shaped skis, but you were on long straight skis, you may have to exaggerate demonstrating some movements or maneuvers in a Parallel Pathway. For a description of effective and efficient skiing see Visual Cues to Effective and Ineffective Skiing in the Alpine Technical Manual (2001). The requirements for skiing at each PSIA certification level are listed in the National Certification Standards ([https://www.psia.org/psia\\_2002/alpine\\_t.asp?mode=alp\\_cert\\_stands](https://www.psia.org/psia_2002/alpine_t.asp?mode=alp_cert_stands) or Appendix A of this document).

For more information on Skiing and the Skills Concept see:

[https://www.psia.org/psia\\_2002/education/core/skiing\\_model\\_skills\\_concept.pdf](https://www.psia.org/psia_2002/education/core/skiing_model_skills_concept.pdf)

[https://www.psia.org/psia\\_2002/education/core/sample\\_ver\\_skill.pdf](https://www.psia.org/psia_2002/education/core/sample_ver_skill.pdf)

[https://www.psia.org/psia\\_2002/education/core/skiing\\_model.pdf](https://www.psia.org/psia_2002/education/core/skiing_model.pdf)

[https://www.psia.org/psia\\_2002/education/core/skills\\_concept.pdf](https://www.psia.org/psia_2002/education/core/skills_concept.pdf)

[https://www.psia.org/psia\\_2002/education/core/skill\\_dev\\_pattern\\_sample.pdf](https://www.psia.org/psia_2002/education/core/skill_dev_pattern_sample.pdf)

The Alpine Manual (1996)

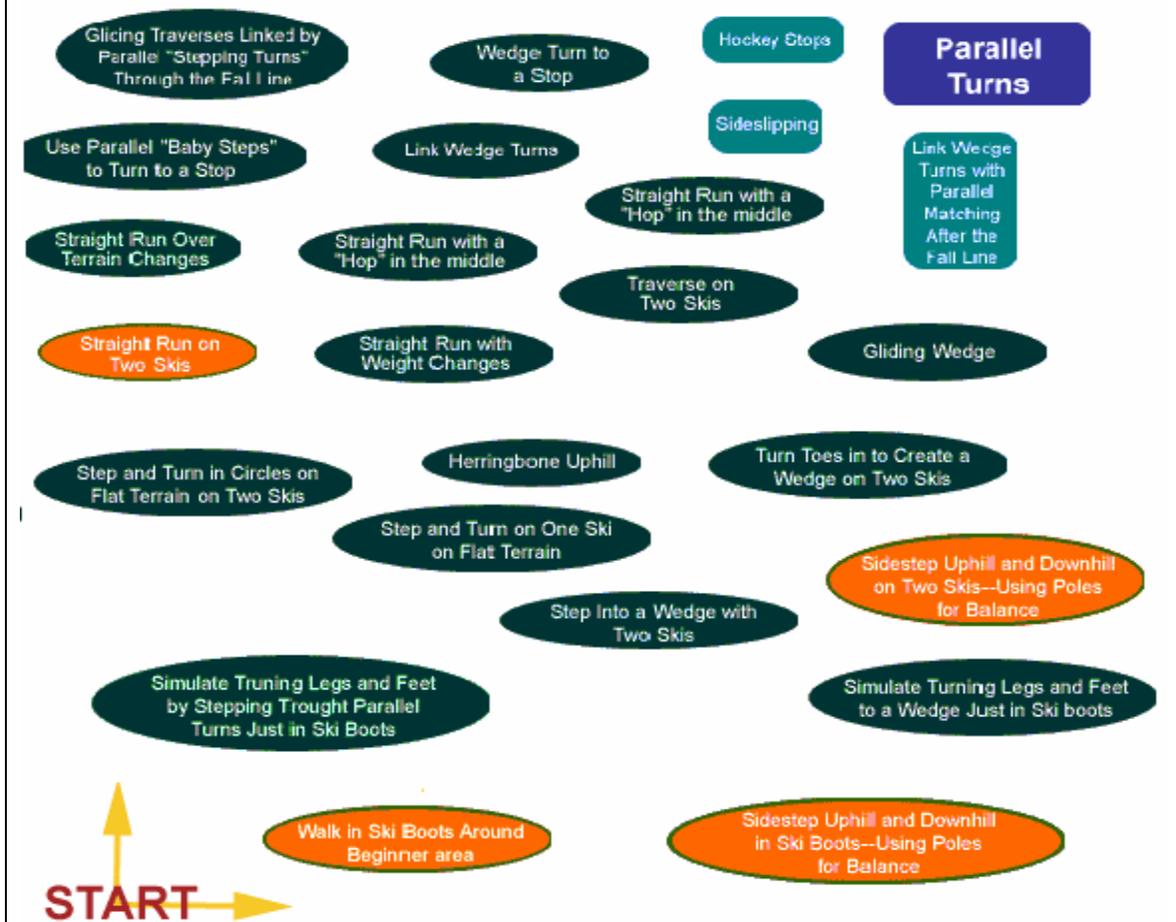
The Alpine Technical Manual (2001)

## Teaching

### The Fundamentals of ATS

The American Teaching System, or **ATS**, is the primary system used for snow ski teaching in the United States. ATS is designed as a living document that is constantly upgraded and improved as new information becomes available. **Student-Centered**, holistic teaching is the main concept of ATS. The current model that ATS uses is called **Stepping Stones** (see figure 1 below).

Figure 1  
Stepping Stones



Key



A step that most students will visit, regardless of ability, desire, etc.



A step that is dependent upon the ski school progression, the student's abilites, desires and equipment, the terrain etc.



A step that is dependent upon the ski school progression, the student's abilites, desires and equipment, the terrain etc.

An

Interactive web version of the following diagram is available at: [https://www.psia.org/psia\\_2002/alpine\\_t.asp?mode=ss1](https://www.psia.org/psia_2002/alpine_t.asp?mode=ss1)

Stepping Stones recognizes that a goal of most beginning/novice zone skiers is to be able to make parallel turns because this allows them to ski a greater part of the ski area more easily. Stepping Stones also recognizes that there are many different ways of achieving that goal.

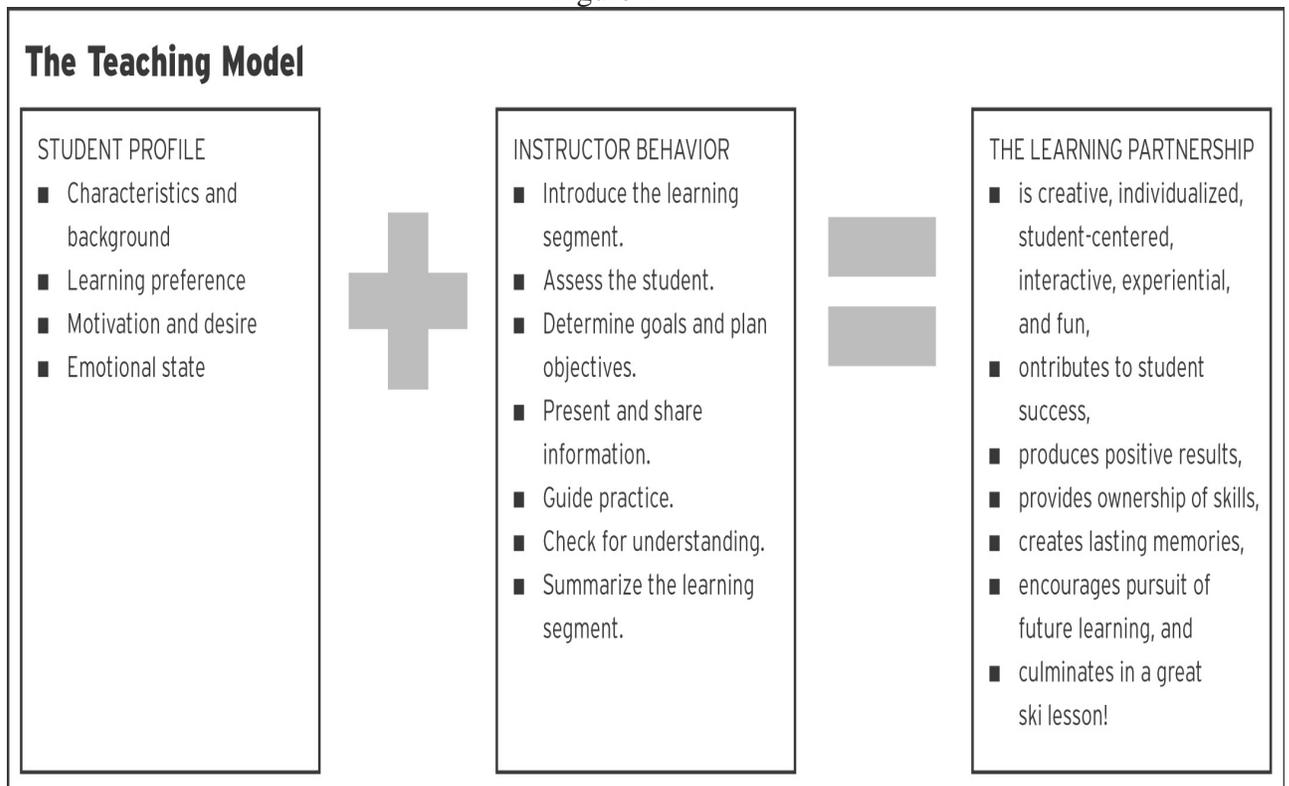
Each stone in the Stepping Stones model indicates a specific task, exercise, or drill that the skier attempts in an effort to expand their skill level. These specific tasks, exercises, or drills are carefully arranged by the instructor to teach a specific movement or pattern of movement that brings the student closer to his or her goal.

Certain Stepping Stones are passed through by almost all skiers, while others may or may not be passed through depending on the method the ski school promotes, the instructor’s judgment, the terrain available, the student’s equipment, ability level, and goals, etc.

**The Stepping Stones model allows instructors to customize their lessons (pathways) to best address their student’s movement needs, goals, and motivation (enter in a *Learning Partnership*). The range of pathways available to an instructor stretch from wedge pathways to parallel pathways (Sample pathways are shown in Appendix E of this document).**

With so many options available, the instructor must assess the student (discover the **Student Profile**) to decide which Stepping Stones will be most appropriate (adjust **Instructor Behavior**). See figure 2 below.

Figure 2



Stepping Stones uses movements to develop skills. As student's ability level increases the scope, magnitude, and refinement of their skill set increases. The four **Skills** of skiing are:

**Balance:** The ability to maintain equilibrium, or desired alignment, on skis

**Edging:** The ability to increase or decrease edge angle

**Rotary:** The ability to increase, limit, or decrease rotation of the skis

**Pressure:** The ability to affect pressure on the skis

The skills concept allows us to categorize movements. In this way, we are able to group movements that produce similar outcomes. However, some movements fit into more than one skill. For example, external rotation of the femur can be a rotary movement, an edging movement, or both depending on the context in which it is used.

The skills, in the context of Stepping Stones, allow us to **Introduce** new movements, **Refine** these movements, and **Adapt** the movements to new circumstances. This translates into the student's ability to use different applications of skill in different situations (**tactics**).

As an instructor it is paramount that you not only understand the movements that skiers make, but also that you have the ability to categorize them by skill, and communicate them to your student. Figure 3 below illustrates this.

Figure 3

# How Movements Relate to Skills

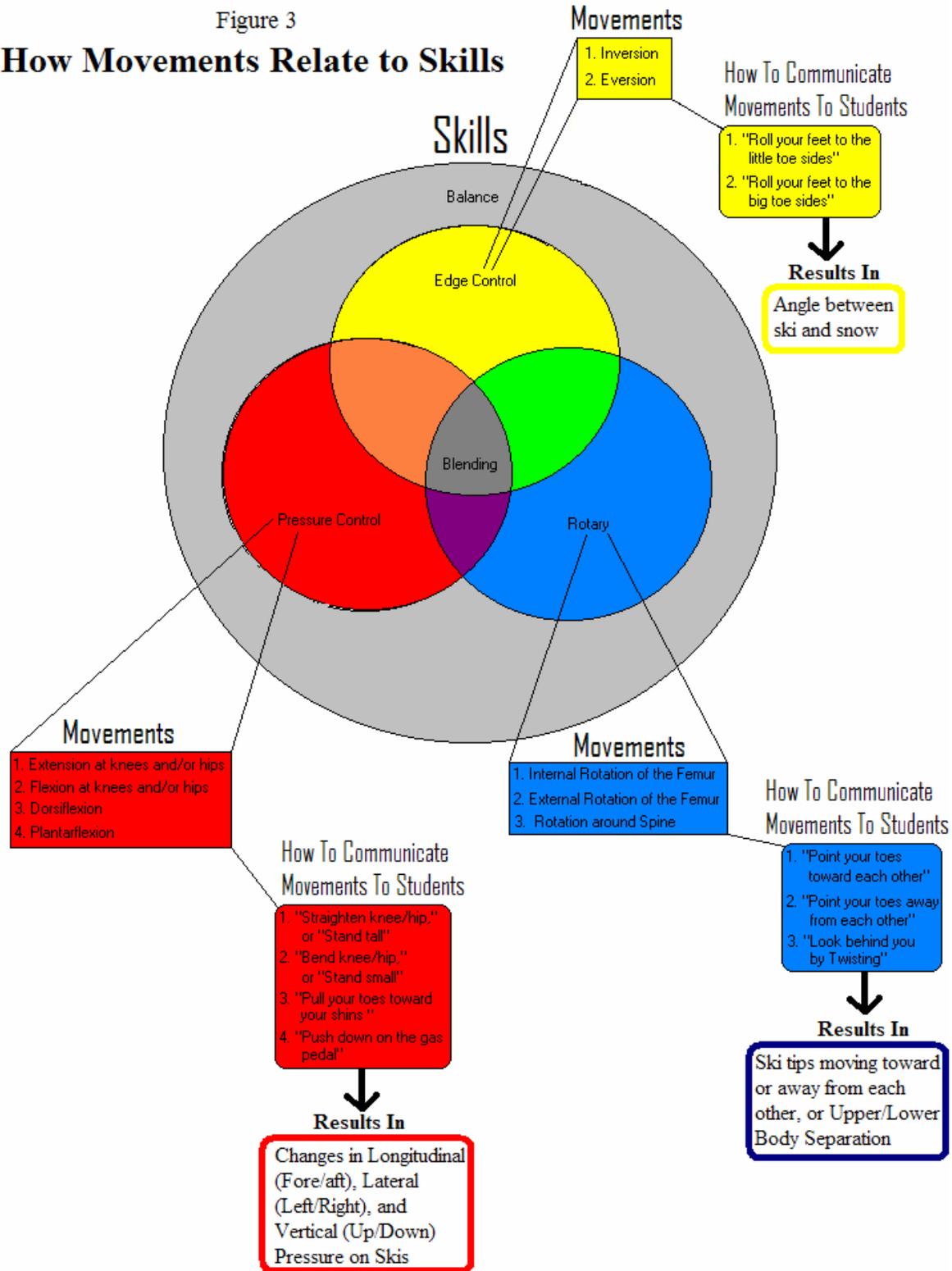


Fig. 3-The above diagram illustrates some of the movements that fall into their respective skills categories and gives examples of how one might communicate those movements to a student

## Learning: Teaching Style

Each of us invariably develops our own teaching style. It is important for us to be aware of how we teach (do you talk a lot, move a lot, stimulate conversation in your class, etc.) and attempt to adapt our teaching style to the learning styles of the students. When assessing how a student is going to understand what we present, there are several considerations:

**Student Needs-** Everyone has certain needs ranging from physical to cognitive. Abraham Maslow developed a schema for describing these needs. His model is a pyramid with the following needs from base to peak.

- **Physiologic**
- **Safety and Security**
- **Belonging**
- **Self-Esteem**
- **Self Actualization**

**Student Age-** Every age has a set of common experiences, this is one avenue we can use to relate to our students. For example, a 20 year old will be more likely to relate to the movements and sensations of in-line skating, where a 50 year old may relate better to roller-skating.

**Student Developmental Level-** Children can develop at different rates mentally, physically, and emotionally. It is important to recognize a student's limitations (someone 3 feet tall will not be able to absorb a 3 foot mogul OR a 3<sup>rd</sup> grader will not understand internal and external rotation of the femur) and teach to their abilities (a 3 foot tall person can absorb some moguls, and a 3<sup>rd</sup> grader can point their toes toward or away from each other).

**Student Personality Style-** Identifying a student's personality style can help you to understand their behaviors and effectively discover their motivation. Silberman describes eight personality categories:

- **Extroverted**
- **Introverted**
- **Sensing**
- **Intuitive**
- **Thinking**
- **Feeling**
- **Judging**
- **Perceiving**

**Student Learning Style-** People learn in different ways. The following are different models that may help you to identify a student's intelligence/learning styles, so you can adjust to best teach them:

**Multiple Intelligence Theory** developed by Howard Gardner:

- **Verbal-Linguistic**
- **Musical-Rhythmic**
- **Logical-Mathematical**
- **Spatial**
- **Bodily-Kinesthetic**
- **Interpersonal**
- **Intrapersonal**

**4MAT** developed by Bernice McCarthy:

- **Innovative-** They ask "Why?"
- **Analytic-** They ask "What?"
- **Active Experimenter-** They ask "How?"
- **Dynamic-** They ask "What if?"

Identifying a student's learning style can help to identify their sensory preference (**learning mode**).

**Student Sensory Preference (Learning Mode)**

- **Visual-** They like to watch
- **Auditory-** They like to have it explained or talk about it
- **Kinesthetic-** They like to try it

We should adjust our teaching style to best relate to, and communicate with, our students.

## Learning: Teaching Model

The Stepping Stones concept is exceptionally adaptable. It will work with almost any teaching model. A **Teaching Model** is an adaptable way to structure almost any lesson. While PSIA-C encourages instructors to explore many teaching models and believes each instructor should develop one that works best for them, it also feels obligated to provide new instructors with an easy to use, efficient model. The model PSIA-C has chosen to present, as a base-line teaching model is **STUMP**. STUMP is an acronym for the following: **S**et the Goal, **T**each to the Goal, **U**tilize Principles of Learning, **M**onitor and Adjust, and **P**rovide Closure.

1. **Set** the Goal
  - A. Introduce yourself
    1. Learn the student's names
    2. Have students learn each other's names
  - B. Assess the student (motivations, abilities, learning style, etc.)
    1. (See the list of **Safety** concerns on pages 3-4, and **Teaching Style** considerations on pages 10-11)
  - C. Agree on the goal (decide which pathway to lead your student down)
    1. This is often a negotiation of what is appropriate and feasible given the constraints of time, terrain, abilities, etc.
2. **Teach** to the Goal
  - A. Be sure that the movements and skills you are teaching are consistent with the goal that you agreed upon
3. **Utilize** Principles of Learning
  - A. Get the student excited about what they are about to learn (relate it to their motivation)
  - B. Tell the student how the movement/task relates to the goal (Anchoring)
  - C. Identify what type(s) of learner each student are, and adapt teaching style to best address each student
  - D. Introduce new movements statically first
  - E. Apply static movements to dynamic situations
  - F. Provide the movements and skills necessary to be successful in a task or maneuver before attempting the task or maneuver
  - G. Model by demonstrating and explaining the movement/maneuver/task
  - H. Focus on the most important movements and how to blend them to achieve the maneuver/task
  - I. Keep everyone active
4. **Monitor** and Adjust
  - A. Analyze the students movements (**Movement Analysis**)
  - B. Reinforce appropriate outcomes with specific and positive feedback
  - C. Adjust outcome by changing focus/maneuver/task
5. **Provide** Closure
  - A. Anchor what was learned back to the goal of the lesson (have student explain it to you)
  - B. Provide the student with movements and activities to practice
  - C. Preview what their next lesson would be about
  - D. Invite the students back

For more information on Learning and Teaching styles see:

[https://www.psia.org/psia\\_2002/education/core/learning\\_and\\_teaching\\_styles\\_doc.pdf](https://www.psia.org/psia_2002/education/core/learning_and_teaching_styles_doc.pdf)

[https://www.psia.org/psia\\_2002/education/core/the\\_teaching\\_model\\_doc.pdf](https://www.psia.org/psia_2002/education/core/the_teaching_model_doc.pdf)

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[https://www.psia.org/psia\\_2002/alpine\\_t.asp?mode=ss1](https://www.psia.org/psia_2002/alpine_t.asp?mode=ss1)

The Alpine Manual (1996)

Core Concepts (2001)

# Appendix A:

## The Level I National Certification Standards

### **CERTIFIED LEVEL I**

Certified Level I members demonstrate a solid foundation of information and experience necessary to be an effective ski teacher. The Certified Level I instructor possesses an understanding of *basic* skiing skills, teaching skills, and professional knowledge. It is not expected that Level I candidates will have *in-depth* knowledge and experience in each of the areas of competence listed in these Standards. It is expected, however, that candidates will be able to show *basic* competence and knowledge in all of these areas. In addition, it is expected that candidates will be able to demonstrate a *significant* level of competency with the skiing and teaching tasks listed specifically for assessment at a Level I event.

### **Category A: Skiing**

Level I certified teachers must be able to ski all green and groomed blue terrain demonstrating consistent balance and control of speed through turn shape. Demonstrations must display an "understandable picture" of the technical elements of Beginner/Novice zone skiing. The turn dynamics are limited by the speeds and terrain appropriate for Beginner/Novice zone skiing and tasks.

The instructor is able to...

1. **General Characteristics**
  - a. Consistently link turns with sustained rhythm
  - b. Maintain consistent speed by controlling the shape of a turn
  - c. Maintain a balanced stance throughout a series of turns
  - d. Demonstrate an appropriate blend of skills (with consideration for the snow conditions, equipment, terrain, etc.)
  - e. Ski a variety of turn sizes within a series of turns while maintaining speed control
2. **Balance** (Level I Beginner/Novice zone terrain, speed, and dynamics)
  - a. Maintain lateral and fore-aft balance through common tasks and demonstrations
  - b. Demonstrate the *visual cues to effective skiing* relative to balance in demonstrations and tasks common to Beginner/Novice zone skiers
3. **Rotary Movements** (Level I Beginner/Novice zone terrain, speed, and dynamics)
  - a. Demonstrate a gradual steering of the skis to assist turn shaping
  - b. Demonstrate the *visual cues to effective skiing* relative to terrain, speed and dynamics
4. **Edge Control Movements** (Level I Beginner/Novice zone terrain, speed, and dynamics)
  - a. Demonstrate a gradual increasing and decreasing of edge angle throughout a series of turns
  - b. Demonstrate use of ski design in Beginner/Novice zone level skiing tasks
  - c. Demonstrate the *visual cues to effective skiing* relative to edge control movements in demonstrations and tasks common to Beginner/Novice zone skiers

5. **Pressure Control Movements** (Level I Beginner/Novice zone terrain, speed, and dynamics)
  - a. Maintain ski snow contact with both skis
  - b. Demonstrate a shift of pressure to the outside ski throughout a series of turns
  - c. Demonstrate the *visual cues to effective skiing* relative to pressure control movements in demonstrations and tasks common to Beginner/Novice zone skiers

### **Category B: Teaching**

Level I Certified teachers demonstrate a solid foundation of information, and experience necessary to be an effective teacher of Beginner/Novice zone skiers. A basic understanding of how to manage the learning environment for different age and gender situations is required.

The instructor is able to

1. **Awareness, Understanding and Knowledge**
  - a. Understand the coach/student relationship and how to develop trust between them
  - b. Recall the components of the learning environment and discuss how to incorporate them into lessons that will create memorable experiences
  - c. Identify the components of good teaching
  - d. Categorize teaching, skiing, and guest service principles of ATS, relative to Beginner/Novice zone students
  - e. Understand student needs of specific groups (i.
  - f. , adults, children, women, seniors, beginners, etc.)
  - g. List considerations for managing the learning environment for children at different stages of development
2. **Application**
  - a. Teach the public through the Beginner/Novice zone
  - b. Demonstrate an ability to develop a relationship of trust between teacher and students
  - c. Identify learning styles and preferences and cite examples of how to use them in a lesson
  - d. Recognize the *stepping stones* concept and identify a pathway to learning based on the needs of students specific to the instructors home area
  - e. Handle a class based on group energy level, conditions, safety, and lesson content
  - f. Predict and meet the needs of specific groups (i.
  - g. , children, seniors, men)

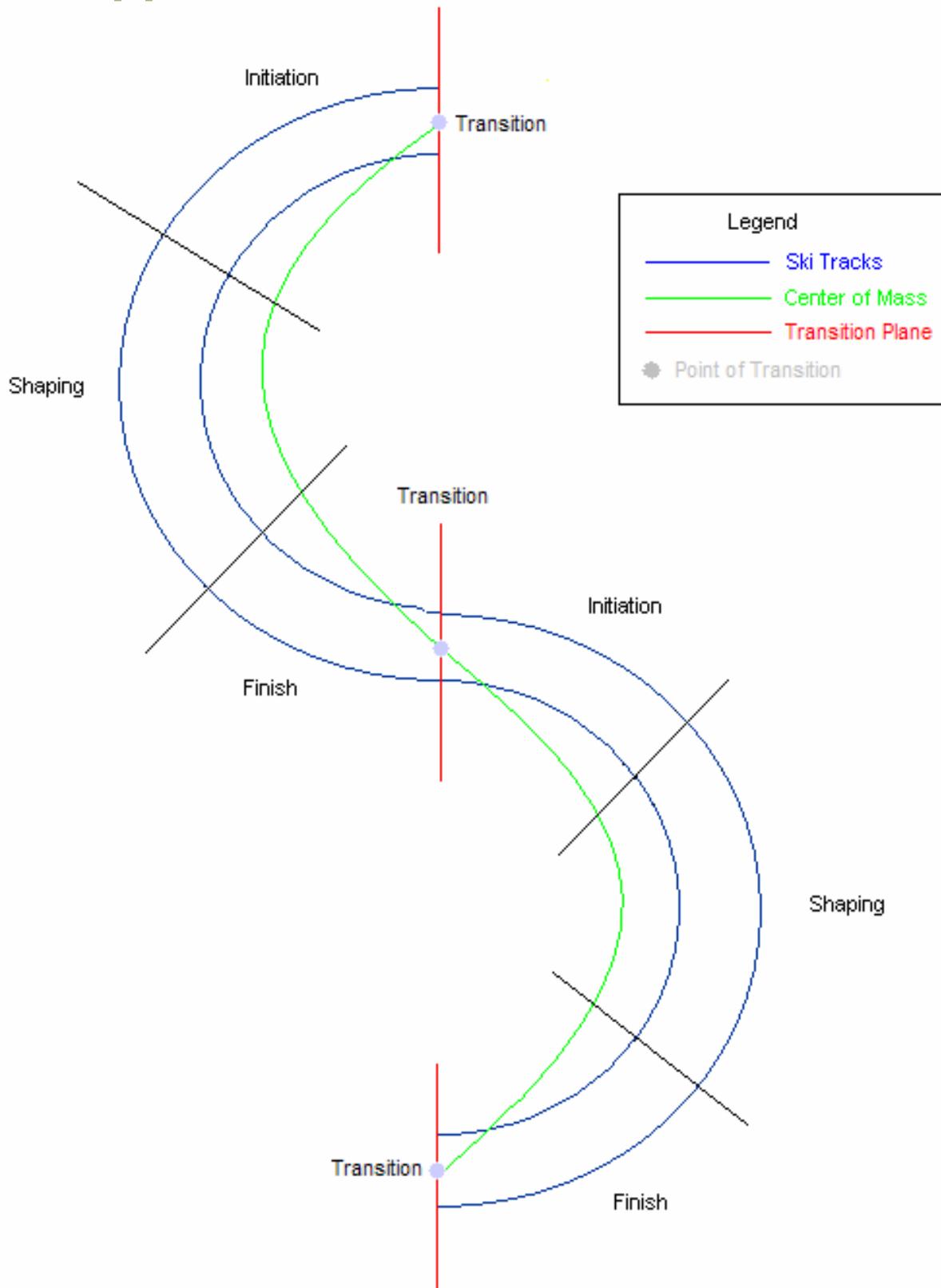
### **Category C: Professional Knowledge**

Professional knowledge requirements for Level I Certified teachers reflect a practical awareness of general terms and concepts, and an ability to use these concepts in basic lesson situations for Beginner/Novice zone students. Decision making and lesson content will most likely follow preplanned options, with consideration for different skill development emphasis.

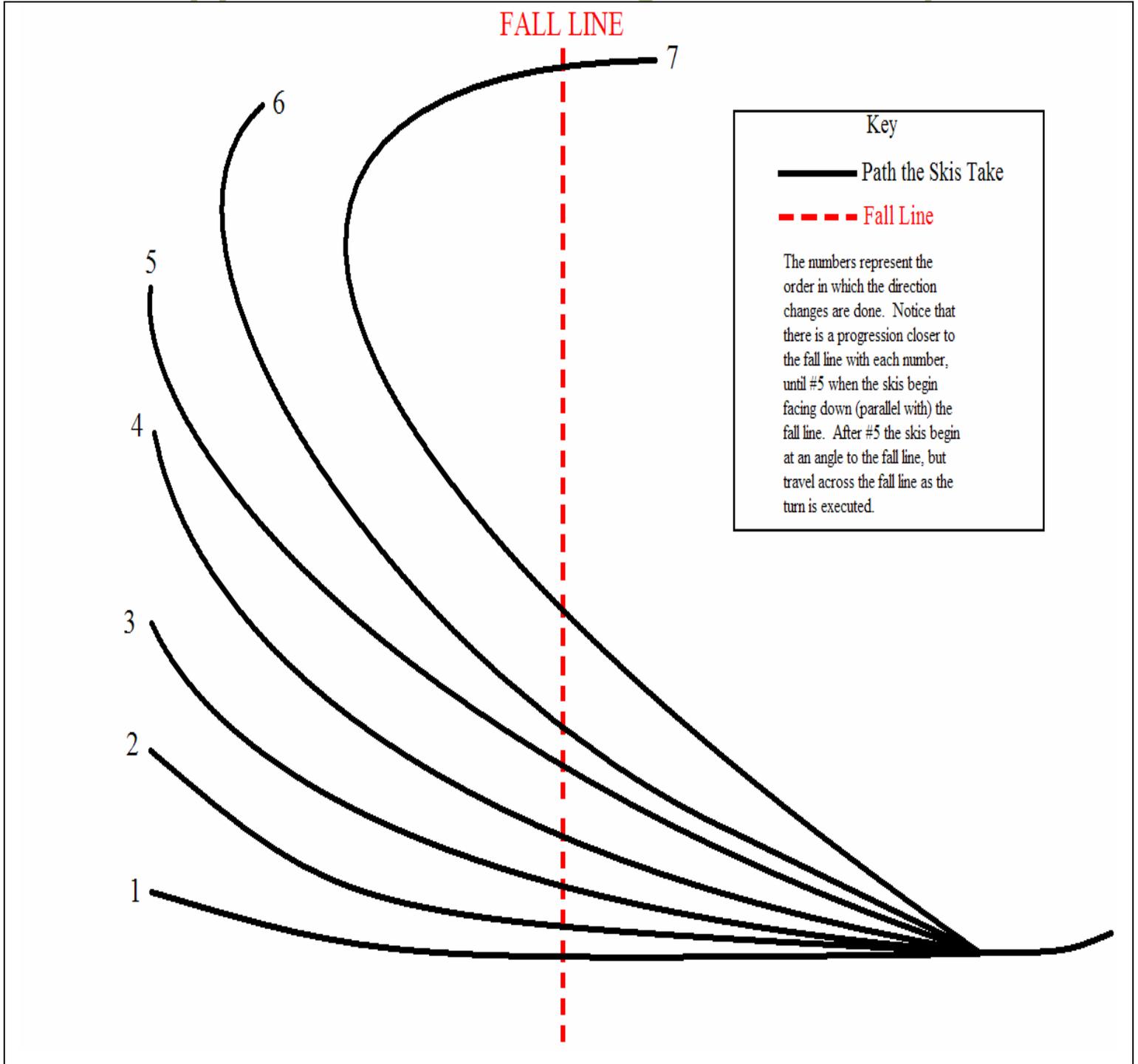
The instructor is able to...

1. **Terminology**
  - a. Define and explain basic skiing terminology as described in the *Alpine Technical Manual*
  - b. Define and explain basic terminology as described in the *Core Concepts Manual*
2. **Equipment**
  - a. Identify equipment needs for skiers through the Beginner/Novice zone
  - b. Categorize the basic options and benefits of modern ski designs
  - c. Identify common equipment safety issues
3. **Skills Concept**
  - a. Discuss the role of balance relative to the other skill categories and movements
  - b. Identify effective movements and skill development through the Beginner/Novice zone
  - c. Understand the concept of skill blending, and identify how different skill blends create different outcomes regarding ski performance for a Beginner/Novice zone skier
  - d. Teach a traditional skill blend for Beginner/Novice zone skiers (*wedge stepping stones*)
  - e. Develop Beginner/Novice zone skiers along a track to parallel skiing that is not based on the foundation of a wedge (*parallel stepping stones*)
  - f. Create an activity list for each skill category
4. **Movement Analysis**
  - a. Recognize general movement patterns relative to skill categories in Beginner/Novice zone skiers
  - b. Identify desired skill and movement outcomes in various types of Beginner/Novice zone skiing including beginner parallel and wedge turn progressions
  - c. List exercises and tasks which address a student's needs, the equipment being used, terrain options, etc.
5. **Personal Mastery**
  - a. Identify and develop a vision for personal growth as a snowsports teacher
  - b. Understand the pathways for personal and professional growth by identifying the resources available both inside and outside of PSIA-AASI
  - c. Plan short- and long-range schedules for training and certification goals

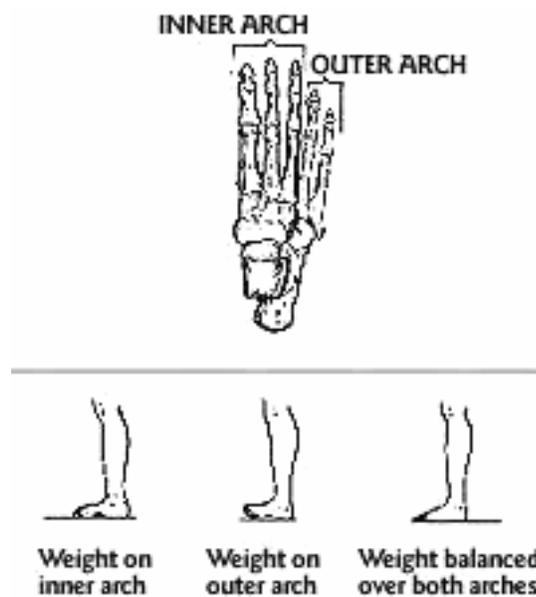
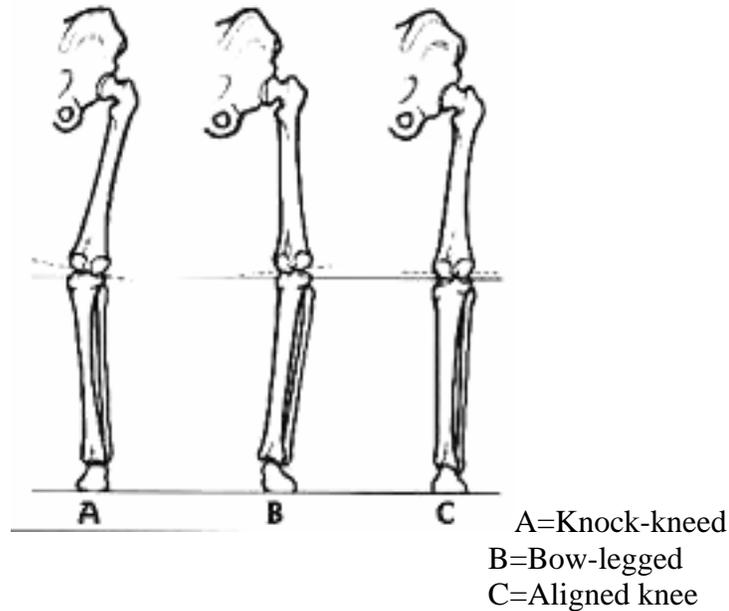
# Appendix B: Phases of the Turn



# Appendix C: Fan Progression Graphic



## Appendix D: Alignment and Anatomy Diagrams



The above graphics are reproduced from <http://www.valariekeaton.com/thch2.htm>

It is important to recognize that students who are improperly aligned may have difficulty achieving appropriate edge (stepping/rolling onto little-toe/big-toe edge) angles, and the instructor may have to modify his/her lesson to give the student the movement pool and skills necessary to safely navigate the mountain.

# Appendix E: Sample PSIA Stepping Stones Level I Pathways

As contemporary ski teaching professionals we need a comprehensive complement of options (**Stepping Stones**) to accommodate the varied needs of first time skiers. Those needs most likely lie on the spectrum between wedge and parallel pathways. The following sample pathways should serve to explore the spectrum. These pathways are meant to present both the instructor and the student with **Stepping Stones** based options that can be adapted to address the evolving needs of our students.

The following sample pathways will attempt to emphasize fundamental movements that:

- Are easy to learn and promote future learning
- Provide a movement base supporting adaptable skiing options
- Promote the functional application of efficient biomechanics
- Adapt to a variety of student/equipment/terrain/timeframe scenarios
- Are the same fundamental movements as those used by expert skiers
- Utilize the same or similar fundamental movements regardless of pathway
- Allow the instructor to move between pathways as needed throughout a lesson

Strive to make your pathways an evolving relationship that is enhanced and enriched by your own teaching and learning experiences.

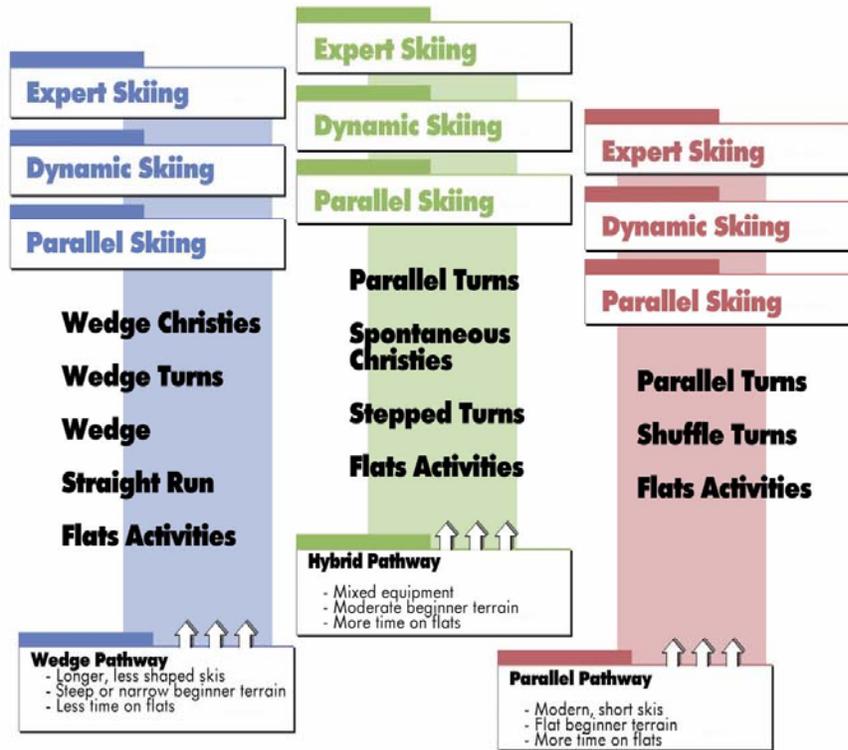
To facilitate use of the following pathways, each outline-heading item has a reference for the **Zone** and **potential station number** (i.e. *Beginner Zone 1*) that may be used with large groups and few instructors. (Clarification: The Zones are referenced to those in the PSIA Alpine Technical Manual pages 51-54, while the numbers refer to proposed stations for station teaching)

Figure 4 on the next page illustrates how to begin to use the following pathways.

The following pathways are organized to represent the Y-Model in Figure 5 (page 21). The following sample pathways are organized into sub-appendices (E-1 to E-5). Appendix E-1 contains flatwork that is common to most pathways, whether wedge based or not, and dovetails with each of the subsequent pathways (E-2 through E-4). Appendix E-5 contains information on how to teach lift use and can be used with any of the preceding pathways. As an instructor comes to the end of the flatwork, he/she must begin to choose which stones they will choose to continue a timely and quality learning experience for his/her student(s). Each of the pathways presented in E-2 through E-4 is an example of stones that an instructor may choose to teach students how to control speed and be able to ski a larger part of the ski area.

*Yet, be aware o pathway travelers, for the path is traveling too...*

Figure 4



- 1.**

**Choose the appropriate Learning Pathway which best fits your Student/Terrain Profile and teaching style.**
- 2.**

**Using the sample progressions in the study guide, create a lesson plan focused on appropriate skill level.**
- 3.**

**Incorporate Laterally Learned Tactical Options into your lessons.**

  - Pivot/Displace
  - Braking, Checking
  - Rise and Release
  - Guide/Shape
  - Gliding, Carving
  - Flex and Release

Figure 5

# Y Model: An Introduction to Stepping Stones



# Appendix E-1: A Pathway Through Flatwork

## I. INTRODUCTION TO THE SPORT OF SKIING *Beginner Zone 1*

### 1. Introduce your Class (at class meeting area)

- To you
  - Explain your role as a group facilitator
- To each other
- Learn their names
- Assess their motivations
  - Find out what they expect from the lesson and why they are taking a lesson
- Use the Teaching Model
- Welcome each student to the ski area

### 2. Introduce the Alpine Environment (at bottom of hill)

- Familiarize students with the base area
  - Bathroom locations
  - Food services
  - Snow Sports School
  - Ticket window
  - Rental area
- Skier's Responsibility Code/posted signs
- Trail maps
- Ski Patrol
- Lift Operators
- Other helpful employees

### 3. Introduce Equipment (Flats)

- Skis (this may be done just before skis are used for the first time)
  - Tip: widest part of ski to pull us into turns, this is why we want forward pressure
  - Waist: narrowest part of the ski, facilitates flotation and ease of edge change
  - Tail: second widest part of ski (unless truly parabolic)
  - Edges: facilitate gripping of the ski in the snow
  - Side cut: helps determine how small the arc radius of the ski is (how quickly the ski will turn)
  - Bases: allow the ski to slide on the snow
  - Wax

- Boots
  - Fit: it is important for the boots to be comfortable and fit snugly enough for the student to affect movements, not become cold, and have a good experience
  - Buckles/Power Straps: you can adjust how the boot fits (providing it is the right size to begin with)
  - Forward Lean: helps keep the ankles/knees bent and in an athletic position
  - Canting: can adjust lateral alignment of the students legs
- Bindings (this may be done just before skis are used for the first time)
  - Toe piece: holds toe of boot on the ski
  - Heel piece: holds heel of boot on the ski
  - Brakes: should descend automatically on removing the boot from the binding, and stop the ski from sliding down the hill
  - DIN: indexed number system that corresponds to spring tension of binding that determines the force required to get the boot to release from the binding (the larger the number, the more difficult to release)
- Poles
  - Grips: what you grab with your hand
  - Baskets: keep the pole from going too deeply into the snow
  - Shafts: connect grip to tip
  - Straps: keep your poles from falling down the hill if the student falls
  - Tips: what digs into the snow
- Clothing
  - Jacket: assess for appropriate warmth
  - Pants: assess for appropriate warmth
  - Base Layers: good way to get and stay warm
  - Gloves/mittens: assess for warmth/water-resistance
  - Hat: depending on temperature
  - Goggles
  - Sunscreen

## II. INTRODUCTION TO MOVEMENTS *Beginner Zone 1*

### 1. Flex and Extend for Fore/Aft Balance

WHAT: Flex and Extend at ankles, knees, hips, and spine

WHY: Learn fore/aft balance and range of motion at each joint (Balancing and Pressure Control Skills)

WHERE: Flats, in boots only

HOW: Alternately Flex and Extend at ankles, knees, hips, and spine to develop a sensation of shin-boot contact (Fundamental Movements: **Flex** and **Extend** at ankles, knees, hips, and spine)

- a. Begin standing upright with weight distributed evenly over both feet.
- b. Flex at ankles, knees, hips, and spine to develop shin-boot contact.
- c. This amount of flex facilitates tipping with the feet.
- d. Flex more to feel varying amounts of pressure against the tongue of the boot.
- e. Bounce in boots (alternately flex and extend).

- f. Jump up and down 3 times to achieve an athletic stance.
- g. Explore only flexing or extending at one joint at a time.

**SUMMARY:**

This exercise teaches students fore/aft balance: if they flex at one joint they will need to flex at others, and if they extend at one joint they will need to extend at others. The joints involved are the ankle, knee, hip, and spine.

**2. Rotate Feet**

**WHAT:** Rotate Feet

**WHY:** Learn to Rotate Legs and Guide Feet (Rotary Skills)

**WHERE:** Flats, in boots only

**HOW:** Shift weight to one leg and rotate the other leg, making an X in the snow with ski boot (Fundamental Movements: **Internal/External Rotation** of Feet/Femur)

- a. Begin with neutral stance width.
- b. Shift weight primarily to one leg.
- c. Rotate the lightened foot (toes/heels toward and away from each other).
- d. Pivot point is the middle of the foot.
- e. Leaves an “X” in the snow.
- f. When done to extremes, requires twisting of leg (internal/external rotation of femur).
- g. Experiment with putting weight on rotating foot.
- h. Switch feet to experience with each foot.

**SUMMARY:**

This activity allows students to begin learning rotary movements. The rotation of the foot is the key movement to emphasize, and continued foot rotation results in rotation of the femur.

**3. Tipping of the Feet From Edge to Edge**

**WHAT:** Lateral Tipping of the Feet

**WHY:** Develop awareness of edges (Edging Skills)

**WHERE:** Flats, in boots only

**HOW:** With feet parallel, roll to left edges and then right (Fundamental Movements: **Invert/Evert** Feet)

- a. Begin in athletic stance, with feet evenly weighted, parallel, and flat.
- b. The feet are rolled to one side. The stance is on the big-toe edge of one boot and the little-toe edge of the other boot. Balance is even on both feet, and the poles are spread wide to provide support.
- c. The feet are tipped as far as possible without a loss of balance.
- d. The feet are rolled back to a neutral/flat stance.
- e. The feet are rolled in the opposite direction, placing the weight on the opposite little-toe and big-toe edges. Continued tipping of the feet results in rotation of the femurs which produce greater ski edge angles.
- f. Tipping should be done slowly to ensure that boots maintain equal edge angles.

#### SUMMARY:

This activity allows students to begin learning edging movements. These movements are important as the student's skill level increases.

### **4. Balancing on the Little-Toe Edge**

WHAT: Balancing on the Little-Toe Edge

WHY: Learn to balance on the little-toe edge (Edging and Balancing Skills)

WHERE: Flats or gentle slope, in boots only

HOW: Tip to the Little-Toe Edge, pick up the other foot (Fundamental Movement: **Invert Feet**)

- a. Tip foot to little-toe edge.
- b. Pick up other foot by flexing the knee of that foot.
- c. Balance on the edge.
- d. Switch feet.
- e. Use poles to assist balancing at first.

#### SUMMARY:

This activity isolates an edging movement (inversion) in the context of balancing movements. Look to see that the student balances on one foot by picking up the lightened foot, not by extending off the weighted foot. An extension movement will require the ankle to extend and limit a student's ability to tip (invert) the foot. Also, look to be sure that the student tips to the little-toe edge by using the foot (inverting) as opposed to moving their entire upper body to get to their little toe (banking).

### **5. Stepping Boots Through an Arc**

WHAT: Stepping Boots Through an Arc

WHY: Begin to blend rotary and edging movements and learn stepping that will be used later (Edging, Rotary, and Pressure Control Skills)

WHERE: Flats or gentle slope, in boots only

HOW: Boot toes are guided one at a time to scribe an arc in the snow (Fundamental Movements: **Invert/Evert Feet, Internal/External Rotation** of Feet/Femurs)

- a. Begin in an athletic stance, with arms comfortably supported by poles.
- b. One boot is lifted and moved slightly away from the other (i.e. the left boot moves to the left). The boot is set down on its little-toe edge. The pole on the movement side is moved away from the body, maintaining the original distance from pole to hips. Small steps facilitate tipping of feet and maintain balance.
- c. The other boot toe is stepped parallel with the first. At least six steps should be performed in this alternating manner.
- d. The second pole is moved closed to maintain balance and a symmetrical arm position.
- e. Slow fluid stepping, with coordinated hand and foot movements, continues for a quarter turn in one direction. Reverse directions to practice the opposite turn. The leading foot should always be stepped onto its little-toe edge.

### SUMMARY:

This activity allows students to begin to blend edging movements with rotary movements. It also builds toward stepping movements they may experience later.

## **6. Walking the “S”-Line**

WHAT: Walking the “S”-Line

WHY: Simulates the stepping students may later use to step through turns (Edging and Balancing Skills)

WHERE: Flats or gentle slope, in boots only

HOW: Begin taking steps around an arc with the little-toe edge first, bringing the other foot to match; at transition alternate feet (Fundamental Movements: **Invert** Feet, **External Rotation** of Feet/Femur)

- a. Starting position: both feet are tipped or rolled uphill. The downhill foot is on its big-toe edge, the uphill on its little-toe edge.
- b. The downhill foot is lifted to become lightened, then it is tipped slightly toward its little-toe edge. The new weighted foot tips to follow the lead of the lightened foot.
- c. The downhill, lightened foot tips farther toward the little-toe, and the weighted foot rolls over so that the body balances on it.
- d. The downhill foot (lightened) is placed on the snow on its little-toe edge, maintaining the angle of tip; it now becomes the new weighted foot. The previous weighted foot is lifted (keeping it tipped) then set down to match the first foot.
- e. One foot steps after the other, always being placed on the correct edge, while following the “S” line.
- f. Try first on flats, then move to gentle slope.

### SUMMARY:

Walking and tipping the feet through the shape of a turn introduce the movements needed for stepping, tapping, and shuffle turns on skis. While sliding with skis on, these movements will create a direction change and an arc. In boots, stepping is required to move around the “S” line. The crucial movement in this exercise is the transition from one direction and set of edges to the other. The crucial order of movements is stepping to the little-toe edge first, and then bringing the other foot to match. Lifting the downhill foot and tipping it toward the little-toe edge practices the movements that will create parallel skiing. If, instead, the uphill foot is lifted and whether set on its big-toe edge or aimed into the turn, a converging position or wedge is formed. During each step around the curve, keep the inside foot tipped to the little-toe edge.

## **7. Side-Stepping Up and Downhill**

WHAT: Sidestepping Uphill and Downhill

WHY: Learn movements used to balance on gripping edges and climb uphill (Edging and lateral Balancing Skills)

WHERE: Gentle slope, in boots only

HOW: Roll feet uphill and take small lateral steps uphill on edges (Fundamental Movements: **Invert/Evert** Feet, **Adduction/Abduction** of legs)

- a. Students must begin facing across the hill (perpendicular to fall line).
- b. Tip little-toe edge uphill.
- c. Step uphill foot up the hill and onto it's little-toe edge.
- d. Bring downhill foot to match (on big-toe edge).
- e. Use poles to assist balance.
- f. Repeat several times.
- g. Switch sides.

**SUMMARY:**

Having student practice side-stepping up a gentle slope in boot makes the transition to side-stepping on skis very simple. This exercise gives students a way to climb the hill. It focuses on edging movements and explores abduction and adduction of the legs.

### **III. INTRODUCTION TO MOVEMENTS WITH SKIS *Beginner Zone 2***

**1. Repeat Each of the Steps in “II. INTRODUCTION TO MOVEMENTS” with one ski on (One Foot, then the Other)**

**2. Gliding on One Ski**

**WHAT:** Gliding on One Ski

**WHY:** Learn movements used to balance (Balancing Skills)

**WHERE:** Flats with run-out

**HOW:** Step with boot foot or use poles to push and attempt to balance on ski and glide for at least a ski length (Fundamental Movements: **Flex/Extend** ankles, knees, hips, and spine)

- a. Start from a neutral stance with one ski on.
- b. Review balancing on one ski (flat).
- c. Use poles or boot foot to push and generate momentum.
- d. Balance on ski as it glides.
- e. Switch feet.
- f. Repeat with both skis on.

**SUMMARY:**

This activity develops balancing movements and begins to give students a feel for what it is like to glide on skis while allowing them a brake in their boot foot. Look for students to keep their boot foot off the ground by flexing that knee and hip (not by extending the ankle of the ski foot as this will cause loss of shin-boot contact).

**3. Stepping Through Ovals**

**WHAT:** Stepping Through Ovals

**WHY:** Practices movements that may be used to turn (Edging, Rotary, and Balancing Skills)

**WHERE:** Flats

HOW: Step through oval with ski on inside foot. Step onto little-toe edge of ski with each step (Fundamental Movements: **Invert** foot, **External Rotation** of Feet/Femur)

- a. Take small steps with inside foot (ski foot) first (tips diverge).
- b. Step onto little-toe edge with each step.
- c. Bring other foot to match (parallel).

SUMMARY:

It is important that first step is with the inside foot. Stepping the following foot (boot foot) ahead of the lead foot (ski foot) will result in a wedge.

**4. Repeat Each of the Steps in “III. INTRODUCTION TO MOVEMENTS WITH SKIS” with Both Skis**

**5. Herringbone**

WHAT: Herringbone

WHY: Practices movements that may be used to climb uphill and skate (Edging, Rotary, and Pressure Control Skills)

WHERE: Flats and gentle slope

HOW: Move ski tips apart while keeping ski tails close together. Roll to big-toe edges. Take small alternating steps on to big-toe edges. (Fundamental Movements: **Evert** feet, **External Rotation** of Feet/Femurs, **Flex/Extend** leg)

- a. Take small steps with tips diverging.
- b. Step onto big-toe edge with each step.
- c. Alternate big-toe edge to big-toe edge.

SUMMARY:

This activity provides students with an additional means of climbing. It can also provide a base from which to learn skating in the future. It is especially appropriate for knock-kneed skiers who have may have trouble side stepping.

**(At this point, choose to go to either E-2, or E-3, or E-4)**

# Appendix E-2: A Wedge Pathway

## (From E-1: Pathway Through Flatwork)

### INTRODUCTION TO WEDGE PATHWAY

1. A primary consideration when teaching is availability of appropriate terrain and equipment.
2. Introductory direction changes are provided to the student by wedge turns using a small wedge as a platform for movements.
3. Basic movements are introduced in ski boots without skis and re-emphasized throughout the progression.
4. Students practice movements on flat terrain either stationary or by pushing with poles and then on a gentle incline.
5. Once again, explain that they will learn simple movements to control their skis.

### IV. ADDITIONAL FLATWORK *Beginner Zone 2*

#### 1. Static Wedge

WHAT: Static Wedge

WHY: Practices a platform that can be used to control speed with and turn (Rotary, Edging, and Balancing Skills)

WHERE: Flats

HOW: The tails of the skis may be displaced out, the tips of the skis may be displaced in, or the tips and tails may be displaced with a rotation through the middle of the foot. (Fundamental Movements: **Internal Rotation** of Feet/Femurs, **Abduction** of legs[in braking wedge], **Flex** ankles and legs)

- a. On flat terrain, have students practice getting into a wedge in different ways (tips in, tails out, rotate through foot).
- b. Use different techniques to facilitate this (hopping, stepping, guiding, ect.).
- c. Bring attention to the different outcomes by getting into a wedge in different ways (pushing tails out results in a bigger wedge because legs get further apart [abduction], whereas rotating through foot [internal rotation of femur] has no change in stance width and results in a smaller wedge).
- d. Have students practice a variety of different size wedges, and explain that larger wedges can result in slower speeds.
- e. Have students push themselves on the flats with their poles in wedges of various sizes to demonstrate how wedge size controls speed.
- f. Have students push themselves on the flats with their poles and practice changing between wedging and straight running.

### SUMMARY:

This exercise gives students a feel for the wedge and how to get in and out of it before using it while going down the hill. The key features of the wedge are that the tips are closer than the tails and the student is on opposing edges. While students can use larger wedges to stop, most of their skiing will be done out of a gliding wedge. Rotating through the foot is the best way to practice achieving the gliding wedge because there is no change in stance width, they are controlling the entire ski, and it reinforces the rotary movements they will use to turn.

## V. STRAIGHT RUN *Beginner Zone 3*

### 1. Straight Run

WHAT: Straight Run

WHY: Practices balancing on skis as they slide downhill (Balancing/Pressure Control Skills)

WHERE: Very shallow slope with run-out

HOW: Slide down the hill to run-out. Repeat exploring balancing movements. (Fundamental Movements: **Flex/Extend** ankles, knees, hips, and spine)

- a. Take small steps in a wedge to face down the hill (use poles for support).
- b. Slide straight down the hill in balanced stance.
- c. Repeat flexing and extending at the ankles, knees, and hips (notice what happens if too much flexion or extension happens at only one joint).
- d. Keep hands in front of body.
- e. Repeat slide while stepping from one foot to the other to develop one-footed balance and pressure control movements.
- f. Repeat stepping from one parallel track to another.
- g. At the run-out, try using the wedge to stop or turn.

### SUMMARY:

This exercise is a student's first experience with gravity providing propulsion. It is crucial that they learn to maintain balance while accelerating. These activities promote balancing movements to achieve that end.

## IV. GLIDING WEDGE *Beginner Zone 3*

### 1. Wedge Straight Run

WHAT: Gliding Wedge Straight Run

WHY: Practices wedge platform while sliding on skis (Balancing and Rotary Skills)

WHERE: Very shallow slope with run-out

HOW: Use gliding wedge in a straight run. Students may increase the size of the wedge (widen stance through abduction of legs) to stop at the end. (Fundamental Movements: **Internal Rotation** of Feet/Femurs, **Abduction** of legs [for breaking wedge at end], **Flex** ankles and legs)

- a. On gentle terrain with a run-out, use bullfighter turn to face down the fall line.
- b. Keeping skis in a gliding wedge, begin sliding down the hill.
- c. Experiment with flexion, extension, and fore/aft movements to balance in the wedge.
- d. Experiment with flattening one ski to begin to turn at the bottom of the hill.
- e. Experiment with using a larger wedge to stop at the bottom of the hill.
- f. Try starting in a straight run and guiding feet into a gliding wedge.

**SUMMARY:**

This exercise exposes students to using the wedge at speed, and shows them how it can be used to control their speed, and possibly direction. Emphasize the gliding wedge, as this will be the platform they use to turn later. Flattening only one ski by tipping foot toward little-toe edge may create a turn.

**2. Wedge Change-Ups**

**WHAT:** Wedge Change-Ups

**WHY:** Practices guiding feet in and out of wedge while moving (Rotary Skills)

**WHERE:** Very shallow slope with run-out

**HOW:** Repeat the wedge straight run, but this time attempt to go from gliding wedge to parallel skis at least twice. (Fundamental Movements: **Internal/External Rotation** of Feet/Femurs)

- a. Begin in balanced stance with skis parallel, guide skis into wedge, then guide them out.
- b. Attempt this without change in stance width (using internal and external rotation of femurs).
- c. Experiment with increasing stance width (abduction of legs) to develop wedge and decreasing stance width (adduction of legs) to achieve parallel skis.
- d. Increase the number of times students switch from wedge to parallel skis
- e. Play games to make it fun (red light-green light, etc.).

**SUMMARY:**

This exercise gets students comfortable moving in and out of a wedge at speed, and develops a greater ability to both slow down and speed up. This contributes to their balancing, pressure, edging, rotary and speed control skills.

**VI. WEDGE TURNS *Beginner Zone 4***

**1. Wedge J-Turns**

**WHAT:** Wedge J-Turns

**WHY:** Practices the bottom half of the turn: turning out of the fall line (Edging Skills)

**WHERE:** Shallow slope with run-out

**HOW:** From a wedge straight run in a balanced stance, practice tipping toward the little-toe edge of one ski. The bottom of a turn should develop. (Fundamental Movement: **Invert** inside foot)

- a. Begin in a wedge with a balanced stance and tip toward the little-toe edge with one foot (invert).
- b. Repeat tipping with the other foot.
- c. Alternate methods of accomplishing this direction change include rotating ski tips in the direction of the turn (internal and external rotation of femurs), looking in the direction of the turn (upper body rotation), and increasing the size of the wedge in one direction (abduction of one leg).
- d. While the alternate methods may need to be used for some students, begin by trying the tipping method first; and if it works, continue with it.
- e. See Appendix C for explanation of fan progression that can be used to make J-Turns.

**SUMMARY:**

This exercise introduces direction changes out of the wedge platform. Starting with the tipping method allows students to practice movements consistent with upper level skiing. Some students will have issues that make other methods more effective for them. These students should be allowed to use the most effective movements at their disposal.

**2. Wedge Garlands**

**WHAT:** Wedge Garlands

**WHY:** Practices the top half of the turn: turning into the fall line (Edging Skills)

**WHERE:** Shallow slope with run-out

**HOW:** In a wedge facing across the fall line, tip toward the little-toe edge of the downhill ski to begin sliding across and down the hill. Next, tip toward the little-toe edge of the uphill ski to slow down and move more across the hill. (Fundamental Movement: **Invert** foot)

- a. Start facing across the fall line in a wedge.
- b. Tip to the little-toe edge of the downhill ski to begin to move down and across the hill.
- c. Tip to the little-toe edge of the uphill ski to slow and move more across the hill.
- d. Repeat allowing hips to move slightly downhill (over skis) to continue releasing edges, and into the hill to continue engaging the edges.
- e. Begin facing across the hill and practice tipping downhill foot and following with hips until student ends up in wedge straight run (tips may be steered with internal/external rotation of femurs if necessary).
- f. Work “e.” into garland.

**SUMMARY:**

This exercise practices both the release and engagement of the edges that will be used in a wedge turn without forcing the students to cross the fall line and generate speed that may frighten them. The movements used begin with tipping the feet (inversion), progress through the legs (external rotation of femur), and result in the hips (center of mass) being pulled in the direction of tipping/turning. Alternate movements that may work include tipping to big-toe (eversion of feet), internal rotation of femur, and facing the direction of the turn (upper body rotation).

### 3. First Wedge Turns

WHAT: First Wedge Turns

WHY: Allows students to control speed while traveling downhill (Edging, Rotary, and Balancing Skills)

WHERE: Shallow slope

HOW: Using the releasing movements of the garlands and the engaging movements of the J-turn, the students are now ready to make a complete wedge turn. (Fundamental Movements: **Invert** inside foot, **External Rotation** of inside Foot/Femur, **Flex** inside ankle and leg)

- a. Begin facing across the hill and tip to the little-toe edge of the downhill foot.
- b. Continue tipping by allowing knee of the same leg to move toward the direction of the turn (externally rotating the femur).
- c. This should recruit the hips into the turn, helping to first flatten the ski and then engage the edges.
- d. Repeat in each direction.
- e. Link two turns by changing the foot that is tipping.
- f. Experiment with different turn shapes and how this effects speed control.

#### SUMMARY:

This exercise exposes students to moving through the fall line for the first time, and completing a whole turn. Students should explore how turn shape and wedge size effect speed control. They will find that larger wedges or making their more across the hill will help them go slower. This is the first time students utilize all four edges of their skis.

## VI. BEGINNING WEDGE CHRISTY *Beginner Zone/Intermediate Zone 5*

### 1. Variations of Wedge Turns

WHAT: Variations of Wedge Turns

WHY: Allows students options to control speed while traveling downhill (Edging, Rotary, and Pressure Control Skills)

WHERE: Shallow to easy moderate slope

HOW: In linked wedge turns, have students explore how different size wedges (bigger vs. smaller) can change their speed. Alternatively, have students explore how different turn shapes (more across the hill vs. more down the hill) effect their speed. (Fundamental Movements: **Invert** inside foot, **External Rotation** of inside Foot/Femur, **Abduction** of legs, **Flex/Extend** legs)

- a. Allow students to explore a large wedge (accomplished by abducting and internally rotating both legs) and lead them to understand that larger wedges cause them to go more slowly in their turns.
- b. Have students practice making turns more across the hill out of a small wedge to show another way to control speed (to accomplish this, students must change the duration, intensity, and rate with which they tip/guide the feet).
- c. A good exercise to promote turning across the hill uses visual aides such as cones or ski poles to set the shape of the turns.

- d. Promote a smaller wedge as the turning platform, as this is closer to parallel skiing, and requires less movement to release the downhill ski and allow the hips to move down the hill.
- e. As students become comfortable with speed control on green terrain, move them to easy blue terrain to increase their skill set.

**SUMMARY:**

This exploration of speed control begins to open more of the mountain to the students by allowing them to choose both where they go, and how quickly they get there. Have the students try to turn out of as narrow a wedge as is possible for them to facilitate foot tipping, downhill ski release, and hip movement down the hill consistent with parallel turns.

**2. Closing the Wedge**

**WHAT:** Closing the Wedge

**WHY:** Allows students to begin matching skis and moving toward parallel turns (Edging, Rotary, and Pressure Control Skills)

**WHERE:** Shallow to easy moderate slope

**HOW:** When and how long the skis remain parallel is dependent upon the duration, intensity, rate, and timing (D.I.R.T.) of the movements that are made.  
(Fundamental Movements: **Invert** inside foot, **External Rotation** of inside Foot/Femur, **Adduction** of inside leg, **Flex/Extend** inside ankle and leg)

- a. Practice moving between a wedge and parallel skis while moving across the fall line, here are three methods:
  - a. Starting in a wedge traverse, have students step the uphill ski onto it's little-toe edge (invert uphill foot and adduct same leg) and parallel with the downhill ski, then step ski back out.
  - b. Starting in a wedge traverse, begin tipping the uphill ski to it's little-toe edge (invert the foot) while tapping the tail on the snow and bringing skis parallel (adduct uphill leg), then step ski back out.
  - c. Starting in a wedge traverse, tip the uphill foot to the little-toe edge (invert the foot) and drag it parallel with the downhill ski (adduct and externally rotate uphill leg), then evert uphill foot and push skis back out (abduct leg).
- b. Begin the wedge traverse in "a." progressively more down the fall line with each repetition (in both directions), until students are beginning in the fall line and are completing the bottom half of a turn while matching their skis (J-turn with match).
- c. Introduce "b." into a single turn in each direction using Fan Progression (See Appendix C for Fan Progression).
- d. Link turns.
- e. Introduce matching garlands: Start in a wedge traverse and tip & step/ tip & tap/ tip & drag the downhill ski to it's little-toe edge (invert the foot). As speed develops and tips move toward the fall line, tip to the little-toe edge of the uphill ski and guide feet away from the fall line.
- f. Repeat in each direction.
- g. Introduce movements in "e." into the single turns in "c."
- h. Link turns performed in "g."

- i. Encourage students to try the tip to the little-toe edge of the downhill ski as the first movement to start the turn and to continue tipping/guiding that foot to shape the turns.
- j. Discourage moving back into a wedge between turns to ensure parallel turns.

**SUMMARY:**

Closing the wedge may first be accomplished at the bottom of the turn, resulting in a wedge Christie. However, it is the tipping of the downhill foot toward its little-toe edge (inversion) as the first movement into the turn, and the continued tipping/guiding throughout the turn that allows for skidding of the skis as they are parallel.

**REFERENCES:**

Additional information on Wedge Pathways can be found in references 1, 6, 24, and the 1996 level I study guide link in reference 7.

**(Riding the lifts should be introduced when appropriate. Information on this can be found in appendix E-5: Riding Lifts)**

# Appendix E-3: A Hybrid Pathway

## (From E-1: Pathway Through Flatwork)

### INTRODUCTION TO HYBRID PATHWAY

1. A primary consideration when teaching in the Hybrid Pathway is availability of appropriate terrain and equipment.
2. Basic movements are introduced in ski boots without skis and re-emphasized throughout the progression.
3. Students practice movements on flat terrain either stationary or by pushing with poles and then on a gentle incline.
4. Once again, explain that they will learn simple movements to control their skis.
5. This lesson plan may be modified as needed, depending upon your class size, issues of weather, snow conditions, terrain, your students' athletic ability, or other factors.

### IV. EDGING WITH FEET, STEPPING TO TURN, STRAIGHT RUN

#### Beginner Zone 3

#### 1. Gripping and Slipping: Sidestep and Sideslip

**WHAT:** Gripping and Slipping (sidestep and sideslip)

**WHY:** Learn engaging and releasing movements of edges (Edging Skills)

**WHERE:** First on flats, then across a shallow slope.

**HOW:** Using foot rolling movements to control ski's edge engagement and release.  
(Fundamental Movements: **Invert** and **Evert** feet)

- a. Begin standing perpendicular to the fall line with feet evenly weighted over the whole foot, skis parallel.
- b. To climb, the feet are rolled to one side by leading towards uphill little-toe first.
- c. While climbing use small steps with the stance focused on the little-toe edge of the lead foot and the big-toe edge of the following foot.
- d. The uphill foot (leading) and downhill foot (following) are rolled as far as needed to grip the snow for climbing up slope with small parallel steps.
- e. To sideslip, the downhill foot (leading) and uphill foot (following) are rolled downhill as far as needed to release edges and begin side slipping.
- f. The feet are rolled alternately towards each little-toe edge to explore the range needed to manage gripping or releasing of skis edges to maintain speed control while sideslipping.
- g. Alternate rolling downhill foot to release edges for slipping and uphill foot to grip edges for climbing or controlling speed in sideslip.

#### SUMMARY:

This exercise stresses lead with little-toe/follow with big-toe order of movement while allowing students to explore the range of foot motion needed to grip the snow with the edges or release the edges and begin to slip. They also learn to use friction of uphill little-toe edge to control speed.

## 2. Traverse, Stepping Ski Tips, Stepping to Stop: Garland

**WHAT:** Traverse and Stepping Ski Tips into Fall Line and Uphill to Stop

**WHY:** Learning to accelerate on edges, and step/guide skis to control speed; practices releasing movements used to begin a turn (Edging, Rotary, and Balancing Skills)

**WHERE:** Stand on flat or shallow slope. Angle to slope dictates speed.

**HOW:** Use foot movements to control ski's edge engagement and release while sliding. (Fundamental Movements: Alternately **Invert** feet and **Externally Rotate** Feet/Femurs, **Flex** ankle and leg)

- a. Feet are evenly weighted; rolled toward uphill to grip enough to not slip.
- b. Shuffle forward and roll downhill foot towards the little-toe to begin to slide.
- c. Step ski tips downhill by *rolling/tipping* downhill foot toward little-toe to release edges.
- d. Then roll the uphill foot towards the little-toe edge and step ski tips uphill to stop.
- e. Fundamental movement: step ski tip towards downhill little-toe edge to begin releasing edges, then step ski tip towards uphill little-toe edge to control speed and stop.
- f. Ski of following foot matches at the same angle to the snow as lead foot.

### SUMMARY:

This exercise allows students to begin to explore the range of motion needed to grip the snow with the edges, and to release the edges and step downhill while sliding forward.

It also provides the skier's first experience with acceleration as they step into the fall line. They then control speed by stepping the skis out of the fall line to stop.

## 3. Step Ski Tips Into Fall Line and Straight run

**WHAT:** Step Ski Tips Into Fall Line and Straight Run

**WHY:** Learn to guide skis into fall line and to explore gliding in a balanced stance (Balancing and Edging Skills)

**WHERE:** Shallow slope with flat or counter slope run out

**HOW:** Use foot movements to control edges, guide ski tips and maintain balanced stance. (Fundamental Movements: **Invert** downhill foot; **Flex/Extend** at ankles, knees, and hips to maintain balance)

- a. Stand across shallow slope with run out across flats.
- b. The feet are evenly weighted; the boots tipped towards the uphill little-toe.
- c. Roll downhill foot toward the little-toe edge. As ski tips are stepped downhill towards the fall line, the skier begins sliding in a straight run. (no tail out stem steps).
- d. Glide in a balanced stance exploring ankle flex and position of feet under hips.
- e. Elbows are ahead of spine with the hands loose and wide.
- f. Once in fall line, continue rolling the same foot towards the little-toe edge and step around uphill to stop. Repeat in both directions.
- g. Transition option: Once in fall line, roll the other foot towards its little-toe edge and step back uphill in original direction to stop. Repeat in each direction.

### SUMMARY:

This exercise allows students to begin to experience gliding straight downhill while in a parallel stance. This will also allow them to explore their stance in a dynamic situation. This exercise also reinforces order of movement (lead with little-toe/follow with big-toe). This exercise emphasizes stepping tips into the fall line to straight run, and stepping tips out of the fall line for speed control.

## **V. GLIDING WEDGE, CHANGE-UP, WEDGE TO STOP** *Beginner Zone 4*

### **1. Creating a Narrow Wedge by Guiding Ski Tips In/Out**

WHAT: Static Wedge, then Gliding Wedge

WHY: Practices a platform that can be used to turn from and control speed  
(Rotary, Edging, and Pressure Control Skills)

WHERE: Flat terrain, then shallow slope with flat run-out

HOW: Three Ways: a. Tips of the skis may be displaced in, b. tips and tails may be displaced with a rotation of the feet, c. the tails of the skis may be displaced out. (Fundamental Movements: **Internal Rotation** of Feet/Femurs to Guide Ski Tips In, **Invert** Feet, **External Rotation** of Feet/Femurs to Guide Ski Tips Out, **Flex** ankle to facilitate *tipping*)

- a. On flat terrain, have students practice getting into a wedge in different ways (tips in, tails out, rotate through foot).
- b. Use different movements to facilitate this (hopping, stepping, guiding, etc.).
- c. Bring attention to the different outcomes of getting into a wedge in different ways (pushing tails out results in a bigger wedge because legs get further apart [abduction], where as rotating through foot [internal rotation of femur] has no change in stance width and results in a smaller wedge).
- d. Roll/tip feet toward little-toes to flatten and release skis while guiding tips out.
- e. Alternate guiding tips in/out from wedge to parallel to wedge.
- f. Repeat on shallow terrain and practice changing between wedging and straight running.
- g. Experiment with flexion, extension, and fore/aft movements to balance in the wedge.

### SUMMARY:

This exercise gives students a feel for the wedge and how to get in and out of it first on flats, then while gliding down a slope. The key features of the wedge are that the tips are closer than the tails and the student is on opposing edges. Rotating through the foot is the best way to practice achieving the gliding wedge because there is no change in stance width, they are controlling the entire ski, and it reinforces the rotary movements they will use to turn. This exercise also allows students to explore the *rolling/tipping* movements needed to flatten the ski and release the edge.

## 2. Use a Wedge to Slow and Stop

**WHAT:** Wedge to Slow and Stop

**WHY:** Practices wedge while sliding on skis (Edging, Rotary, and Balancing Skills)

**WHERE:** Very shallow slope with run-out

**HOW:** Use gliding wedge across slope and in a straight run. Students may increase the size of the wedge (widen stance through abduction of legs) to stop. (Fundamental Movements: **Invert** and **Evert** feet, **Internal Rotation** of Feet/Femurs, **Abduction** of legs [for breaking wedge at end])

- a. Begin at an angle to the fall line in a narrow wedge.
- b. Explore *rolling* feet to flatten skis (inverting feet).
- c. Explore *rolling* feet to increase edge angle (everting feet).
- d. With skis in a gliding wedge, slide across the hill, stepping uphill to stop.
- e. Step tips into fall line.
- f. Create a larger wedge (everting feet) to stop on the flats.
- g. Explain how to use the wedge in lift lines or on chair lift unloading ramps.

### SUMMARY:

This exercise allows students to explore the range of *rolling* movements needed to increase edge grip. It will also develop tactical options should they need to use a stopping wedge. Students will continue to reinforce their ability to control speed as they practice *rolling* their feet to increase edge bite and slow to a stop.

## VI. EDGE RELEASE FOR TURNING, FIRST TURNS *Beginner Zone 5*

### 1. Practice Edge Release to Initiate Turns

**WHAT:** First Turns from a Gliding Wedge

**WHY:** Turning to change direction, control speed and turn to a stop (Rotary, Edging, and Pressure Control Skills)

**WHERE:** Flats, then shallow slope with flat run-out

**HOW:** From a narrow wedge, release and guide inside foot out of fall line. (Fundamental Movements: **Invert** Foot to Release Edge, **Internal/External Rotation** of Feet/Femurs to Guide Ski Tips through the turn, **Flex** downhill ankle and leg).

On Flats:

- a. With skis matched or in narrow wedge (feet under hips).
- b. Roll foot towards little-toe (invert) and feel muscle recruitment in the thigh twist the leg and turn ski tip against pole.
- c. Sidestep up shallow slope.

On Shallow Slope:

- a. Standing across slope, designate downhill foot/ski as lead foot/ski. (Lead foot/ski moves right to go right or left to go left).
- b. Step ski tips into the fall line and create a narrow gliding wedge.
- c. Roll designated lead foot toward little-toe edge to release/flatten lead ski.
- d. Guide lead ski's tip out to match skis and continue *rolling* that lead foot.

- e. Continue resulting turn to a stop by *guiding* both ski tips with feet (Internal/External Rotation of Femurs).
- f. If turn does not complete to stop, step tips around to stop.
- g. Repeat in other direction.
- h. Alternate lead foot to link shallow turns in fall line.

**SUMMARY:**

With outside of ski tip against pole or snow, *rolling* foot toward little-toe creates awareness of muscles twisting the leg, recruited by the rolling movement of the foot.

This promotes guiding skis through turns by focusing on the *rolling* movements of the inside/lead foot to flatten/release the lead ski and continue *rolling* as skis are guided through a turn. Students will first learn that they can control speed by turning out of the fall line to slow or stop. Students then learn that they can link turns by changing the lead foot.

**VIII. LINKING & SHAPING TURNS FOR SPEED CONTROL *Beginner Zone 6***

**1. Link shallow Turns – Foot focus, Practice, Mileage**

**WHAT:** Linked Turns in the Fall Line

**WHY:** Small changes in direction allow students to practice a movement many times in a short space; and small movements have a large effect on direction (Edging, Rotary, Pressure Control Skills)

**WHERE:** Shallow slope with run-out

**HOW:** Facing down the fall line, roll, release, and guide alternating feet toward little-toe edges. (Fundamental Movements: **Invert** inside foot, **External Rotation** of inside Foot/Femur, **Flex/Extend** ankles and legs)

- a. Begin in the fall line in a narrow wedge.
- b. Start each direction change by *rolling/releasing* new inside ski towards little-toe edge, *guiding* both ski tips into new turn.
- c. Lighten the *releasing* foot by *tapping* it as it is rolled.
- d. Continue *rolling, guiding, and lightening*, the inside foot throughout the change in direction.
- e. Matching of the skis may occur.

**SUMMARY:**

This exercise emphasizes *rolling* and *releasing* of the inside/downhill/lead foot (inversion of the foot) first to create linked direction changes. Keeping the ski tips near the fall line allows small *releasing* movements to get students in and out of the fall line, and keeps the hips (center of mass) moving down the hill.

**2. Vary turn Shape and Size, Practice Speed Control**

**WHAT:** Vary Turn Shape and Size

**WHY:** Allows students options to control speed while traveling downhill (Edging, Rotary, and Pressure Control Skills)

**WHERE:** Shallow to easy moderate slope

**HOW:** In linked turns, have students explore how different size wedges (bigger vs. smaller) can change their speed. Alternatively, have students explore how different turn shapes (more across the hill vs. more down the hill) effect their speed. (Fundamental Movements: **Invert** inside foot, **External Rotation** of inside Foot/Femur, **Abduction** of leg, **Flex/Extend** ankles and legs)

- a. Allow students to explore a large wedge (accomplished by abducting and internally rotating both legs) and lead them to understand that larger wedges cause them to go more slowly in their turns.
- b. Have students practice making turns more across the hill out of a small wedge to show another way to control speed (to accomplish this, students must change the duration, intensity, and rate that they are *tipping/guiding* their feet).
- c. A good exercise to promote turning across the hill uses visual aides such as cones or ski poles to set the shape of the turns.
- d. Promote a smaller wedge as the turning platform, as this is closer to parallel skiing, and requires less movement to release the downhill ski and allow the hips to move down the hill.
- e. As students become comfortable with speed control on green terrain, move them to easy blue terrain to increase their skill set.

**SUMMARY:**

This exploration of speed control begins to open more of the mountain to the students by allowing them to choose both where they go, and how quickly they get there. Have the students try to turn out of as narrow a wedge as is possible for them to facilitate foot *tipping*, downhill ski release, and hip movement down the hill consistent with parallel turns, while controlling speed with turn shape.

➔ The one-hour lesson may end here

Additional Activities for Longer, or Subsequent Lessons

## **IX. REFINING FUNDAMENTAL MOVEMENTS FOR PARALLEL TURNS**

### **1. Gripping-Slipping-Gripping: Forward Sideslips/Garland *Beginner Zone 7***

**WHAT:** Sideslipping

**WHY:** Learn movements used to balance on gripping edges and release those edges (Edging and lateral Balancing Skills)

**WHERE:** Shallow slope

**HOW:** Begin with feet rolled on uphill edges, roll downhill foot toward it's little-toe edge to release edges, then roll uphill foot toward it's little-toe edge to engage edges and control speed. (Fundamental Movements: **Invert/Evert** Feet)

- a. Begin facing across the hill (perpendicular to fall line), balancing on uphill edges.
- b. Traverse across the hill with weight on entire foot.
- c. The feet are rolled to one side by tipping towards one little-toe edge first. This puts the stance on the little-toe edge of lead foot and the big-toe edge of following

- foot.
- d. The uphill foot (leading) and downhill foot (following) are rolled as far as needed to grip and lead to a traverse.
  - e. The downhill foot (leading) and uphill foot (following) are rolled back downhill far enough to release edges and begin side slipping.
  - f. The feet are rolled alternately towards each little-toe edge to explore the range needed to manage gripping and releasing of ski edges in a traverse.
  - g. Repeat in opposite direction.

**SUMMARY:**

This exercise allows students to begin to explore the range of foot motion needed to release and engage edges while moving. They also learn to use friction of uphill little-toe edge to control speed (sideslipping).

**2. Turning Uphill to Stop From Shallow Traverse *Beginner Zone 7***

**WHAT:** Turning Uphill to Stop From Shallow Traverse

**WHY:** Practice the bottom half of a turn without gathering too much speed (Edging, Rotary, lateral Balancing, and Pressure Control Skills)

**WHERE:** Shallow slope

**HOW:** From a wedge, roll, release, and guide uphill ski up the hill. (Fundamental Movements: **Invert** uphill foot, **External Rotation** of uphill Foot/Femur, **Flex** uphill ankle and leg)

- a. From a narrow wedge traverse, begin *rolling* the inside/uphill foot to release the ski, and guide the tip uphill.
- b. Lighten the inside/uphill foot by *flexing* the leg or *tapping* the tail of the ski.
- c. While *tipping* and *lightening*, pull feet back to maintain shin/boot contact.
- d. Guide both tips uphill to stop.
- e. Repeat in each direction, and begin starting progressively closer to the fall line (fan progression).
- f. See Appendix C for explanation of how to use fan progression to make these direction changes.

**SUMMARY:**

This exercise will begin to promote a parallel relationship of the skis toward the end of the direction change. It gives students the opportunity to guide the skis to a stop without having to cross the fall line. Further, students may begin to experience moving from a wedge to a parallel relationship with their skis.

**3. Releasing and Engaging Movements for Parallel Initiations *Beginner Zone 7***

**WHAT:** Parallel Garland

**WHY:** Practice the top half of a turn without gathering too much speed (Edging and Pressure Control Skills)

**WHERE:** Shallow slope

HOW: Beginning with skis parallel, roll, release, and guide downhill ski toward it's little-toe edge to generate speed. As speed builds, roll uphill ski toward it's little-toe edge to control speed. (Fundamental Movements: **Invert** inside Foot, **Flex** inside ankle and leg)

- a. From a parallel platform in a traverse, begin *rolling* and *guiding* the skis toward their downhill edges to release them.
- b. As the student accelerates and moves down the hill, begin *rolling* and *guiding* the skis toward their uphill edges to engage the edges and control the speed.
- c. Repeat several times.
- d. Repeat beginning increasingly close to the fall line.
- e. Repeat in each direction.

SUMMARY:

This exercise allows students an opportunity to practice *releasing* movements out of a parallel platform. Students should strive to maintain a parallel relationship between their skis and their edge angles at all times.

#### 4. Parallel Turn Entries Crossing the Fall-line *Beginner Zone 8*

WHAT: Parallel Turn Entries Crossing the Fall-line

WHY: Practice a whole turn with parallel skis (Edging, Rotary, and Pressure Control Skills)

WHERE: Shallow slope

HOW: With skis parallel, roll, release, lighten and guide downhill ski toward it's little-toe edge. As speed builds, continue *tipping* and *lightening* the same foot onto it's little-toe edge and *guiding* it in the direction of the turn. (Fundamental Movements: **Invert** downhill Foot, **External Rotation** of inside Foot/Femur, **Flex** inside ankle and leg)

- a. Beginning in a steep traverse near the fall line, start *rolling* to release the downhill/inside ski (inversion of foot while *lightening* and *flexing* inside leg).
- b. Continue *rolling*, *lightening*, and *guiding* the inside ski across the fall line and through the turn.
- c. Pull feet back to maintain shin/boot contact.
- d. Guide both ski tips up the hill to stop.
- e. Repeat in both directions.
- f. Repeat beginning progressively less close to the fall line.

SUMMARY:

This exercise allows students to make a parallel turn and cross the fall line for the first time. *Pulling* the feet back creates flexion at the ankle and facilitates articulation in the form of *tipping* at the ankle. *Lightening* of the downhill/inside foot promotes movement of the hips (center of mass) into the turn. Students should have the skills to keep both skis parallel and produce parallel edge angles through this exercise.

## 5. Linked Parallel Turns, Refining and Shaping *Beginner Zone/Intermediate Zone 8*

WHAT: Linked Parallel Turns, Refining and Shaping

WHY: Practice linking parallel turns and controlling speed (Edging, Rotary, and Pressure Control Skills)

WHERE: Shallow terrain close to fall line, progress to rounder shape on more pitch

HOW: With skis parallel, roll, release, lighten and guide downhill ski toward its little-toe edge. As speed builds, continue *tipping* and *lightening* the same foot onto its little-toe edge and *guiding* it in the direction of the turn. Alternate feet at transition. (Fundamental Movements: **Invert** inside Foot, **External Rotation** of inside Foot/Femur, **Flex** inside ankle and leg)

- a. Link two parallel turns by alternating the *lightening*, *rolling*, and *releasing* of the downhill ski, followed by the *guiding* of the skis through the turn.
- b. As the downhill/inside foot is rolled, released, and guided, be sure to lighten the same foot.
- c. Progressive *rolling* (inversion), *releasing*, *guiding* (leg rotation), and *lightening* (weight transfer/leg flexion) allow students to create rounded turns.
- d. Vary duration, intensity, rate, and timing of these movements to change turn size and shape.

### SUMMARY:

The student is now making linked parallel turns, and needs mileage and time to experiment to be able to discover how to change the size and shape of their turns. Releasing the downhill ski is essential to beginning a turn with parallel skis, while guiding equally edged skis is the key to finishing turns with parallel skis.

### REFERENCES:

Additional information on Hybrid Pathways can be found in reference 23. Additional information on Stepping Stones can be found in references 1, 2, and 6. All references are listed at the end of the study guide in the references section.

**(Riding the lifts should be introduced when appropriate. Information on this can be found in appendix E-5: Riding Lifts)**

# Appendix E-4: A Parallel Pathway

(From E-1: Pathway Through Flatwork)

## INTRODUCTION TO PARALLEL PATHWAY

- A primary consideration when teaching in the Parallel Pathway is availability of appropriate terrain and equipment.
- Basic movements are introduced in ski boots without skis and re-emphasized throughout the progression.
- Students practice movements on flat terrain either stationary or by pushing with poles and then on a gentle incline.
- Once again, explain that they will learn simple movements to control their skis.
- Introductory direction changes are provided to the student by stepping the ski tips, shuffling the skis, and lightening/tipping the inside ski to drag it on its little-toe edge.

## IV. FIRST TURNS *Beginner Zone 3*

### 1. Traverse to Stepping Tips to Turn and Stop

WHAT: Traverse to Stepping Tips to Turn and Stop

WHY: Learn to control speed and stop (Edging and Rotary Skills)

WHERE: Shallow slope with run-out

HOW: Students will change direction and stop on a slight incline using this stepping method learned in “Stepping Boots Through an Arc”. (Fundamental Movements: **Invert** uphill Foot, **Internal/External Rotation** of Feet/Femurs)

- a. Begin in a stable stance with the weight equally balanced on both feet, and both edges rolled uphill.
- b. Look uphill to be sure other skiers are not coming down.
- c. Traverse across the hill by starting at slight angle to fall line or using poles to provide propulsion, and riding edges.
- d. Stepping uphill should begin after starting to slide forward. The tip of one ski is stepped away from the other, just as in “Stepping Boots Through an Arc.” The first ski to move (uphill ski) is stepped in the direction of the turn and onto its little-toe edge.
- e. As the lightened foot and ski are placed on the snow, balance is transferred onto that foot. The previous weighted foot is stepped parallel to match the ski that moved first.
- f. The leading foot is again stepped onto its little-toe edge.
- g. Then the following foot is stepped to a parallel match. Smaller and frequent steps yield solid balance and result in a shallow turn.
- h. See Appendix C for explanation of how to use fan progression to facilitate these changes in direction.

### SUMMARY:

This activity is important because it teaches the student how to grip the snow with their edges, control speed, and stop. Since students in the Parallel Pathway do not have the wedge as a tool to stop, their ability to accomplish this activity is paramount to their progression. An alternative (though much less desirable) method of stopping is to fall, and students should be made aware that this is an option if all else fails.

## **2. Bullfighter Stepping Turns**

WHAT: Bullfighter Turns

WHY: To introduce direction change and speed control (Edging and Rotary Skills)

WHERE: On a gentle slope, just above a flat run-out.

HOW: Use small stepping movements to practice direction change. The first step to change direction should always begin with the inside foot. (Fundamental Movements: **Invert** foot, **External/Internal Rotation** of Feet/Femurs)

- a. Begin standing with the skis across the slope, the poles are placed directly downhill from the boots. A firm pole placement creates support.
- b. The downhill ski is tipped to the little-toe edge at a slight diverging angle from the other ski.
- c. The outside ski is stepped to the big-toe side to match the inside ski.
- d. Alternate steps; repeat until the skier faces the other direction.
- e. The poles are shifted to the other side of the body, and placed firmly in the snow.
- f. Repeat the stepping in the opposite direction.
- g. Practice the direction changes until the students are comfortable and can step quickly enough that they do not need support from the poles.

### SUMMARY:

This exercise allows students to position themselves in the fall line without traveling down the hill. The students should be comfortable stepping out of the fall line prior to this, in case they fail to hold themselves from moving. The first step should be toward the little-toe edge of the downhill foot and results in a divergent relationship of the skis.

## **3. Releasing Garlands**

WHAT: Releasing Garlands

WHY: Learn to release edges and initiate a turn (Edging, Rotary, and Pressure Control Skills)

WHERE: Shallow slope

HOW: From a traverse take first step uphill to little-toe edge, bring other ski to match. As the skier slows, take steps downhill toward little-toe edge and bring other ski parallel to match. When accelerating, again take steps uphill. (Fundamental Movements: **Invert** Feet, **Internal/External Rotation** of Feet/Femurs)

- a. From a traverse, the tips are alternately stepped up into the slope until the skier slows sufficiently. The uphill foot leads the stepping, always landing on its little-toe edge.
- b. The downhill foot takes the first step down the hill, and is tipped towards its

little-toe edge. This is the beginning of a RELEASE the outside foot follows in small steps, landing parallel to the inside ski.

- c. For students that have difficulty with this, alternatives to tipping&stepping include tipping&tapping the tail of the ski, tipping&shuffling (See “6. Shuffle Turns” below), or dragging the edge (See “9. Edge Drag Garland” below) may be used.

#### SUMMARY:

Multi-stepping garlands across the slope can be very helpful as practice and a non-threatening way to descend a steeper hill. This activity increases confidence with movements toward the fall line. The steps, both toward and out of the fall line, should be small and quick. The importance of stepping downhill from a traverse, is that it approximates releasing movements that begin a turn. This RELEASING is a key to parallel skiing. It is helpful to point out a spot on the other side of the slope to aim for as the traverse begins. Don't be afraid to try the other methods listed in “c.” above if students have difficulty with the stepping.

#### **4. Stepping Turns Through the Fall Line**

WHAT: Stepping Turns Through Fall Line

WHY: Learn to control speed by making one full turn (Edging, Rotary, and Pressure Control Skills)

WHERE: Shallow slope with run-out

HOW: Using the skills developed in “3. Releasing Garland,” have the students take small steps to aim their skis down the fall line and continue stepping in the same direction out of the fall line as learned in “1. Traverse to Stepping Tips to Turn and Stop.” (Fundamental Movements: **Invert** downhill Foot, **External/Internal Rotation** of Feet/Femurs, **Flex/Extend** legs)

- a. From a stationary traverse position, have students take small steps downhill toward little-toe edge of the downhill ski first.
- b. With each step, bring other ski to match.
- c. Continue to make small quick steps through the fall line to a stop.
- d. Repeat in other direction.
- e. Link two turns by switching which foot is tipped and stepped to it's little-toe edge.
- f. The key when linking two turns is to go from stepping up the hill to stepping down the hill (to new little-toe edge), a.k.a RELEASING.
- g. For students who have difficulty with tipping&stepping, consider using tipping&tapping the tail of the ski, tipping&shuffling (See “6. Shuffle Turns” below), or Edge Drag (See “10. Edge Drag to Parallel Arc” below).
- h. See Appendix C for explanation of how to use fan progression to facilitate these stepping turns.

### SUMMARY:

Emphasize that numerous, small steps will maintain control, while fewer steps, larger steps will lead to a loss of balance and greater speed. Continued tipping is the key to both releasing movements and engaging movements. When transitioning between turns, the student must not only release the edges, but also allow the center of mass to travel down the hill. Consider other methods if stepping proves difficult for students.

## **5. Shuffling: Static and Dynamic**

WHAT: Shuffling: Static and Dynamic

WHY: Learn to control speed and balance hips over feet while keeping both feet on the ground (Edging, Rotary, and Balancing Skills)

WHERE: Flats and shallow slope

HOW: Make small, quick shuffling movements and add tipping to the little-toe edge. (Fundamental Movements: **Invert** Foot, **External/Internal Rotation** of Feet/Femurs, **Flex/Extend** joints of leg)

- a. Start from a balanced position, using poles to balance.
- b. Shuffle feet back and forth with small movements while tipping to the little-toe edge of one foot on the flats.
- c. Add movement across the hill while shuffling and tipping to the little-toe edge.
- d. Starting in the fall line, tip and shuffle out of the fall line to a stop.
- e. Shuffle and tip through garlands; Increase the steepness of approach to the fall line before shuffling back up the slope.
- f. A fan progression may be used with this exercise, see Appendix C for an explanation of how to use a fan progression.

### SUMMARY:

Tipping and shuffling is one of many alternatives to tipping & stepping through turns. The shuffling has the advantage of not requiring transferring weight between feet with each step. Shuffling promotes balance and can be an effective way of keeping students centered on their skis. Consider using this activity with students who have difficulty staying centered on their skis.

## **6. Shuffle Turns**

WHAT: Shuffling Turns

WHY: Learn to control speed and balance in a turn while keeping both feet on the ground (Edging, Rotary, and Balancing Skills)

WHERE: Shallow slope

HOW: Make small, quick shuffling movements and add tipping to the little-toe edge. (Fundamental Movements: **Invert** Foot, **External/Internal Rotation** of Feet/Femurs, **Flex/Extend** joints of leg)

- a. With the skis pointed down the fall line, a pole push starts the skier sliding.
- b. The feet are alternately shuffled with small movements forward and backward. The foot in the direction of the turn starts to tip toward the little-toe edge.
- c. The tipping increases, starting to turn the skis while they remain parallel.

- d. Repeated shuffling and tipping continue the turn.
- e. At this point some students will have entered a skidded parallel turn and may stop shuffling. Tipping continues.
- g. Another pole push may be needed to continue sliding.
- h. Continue tipping (and shuffling, if desired) until the student feel the skis skidding to a stop.
- i. Move to slightly steeper terrain and repeat.
- j. Link two turns by switching the foot that is tipped to it's little-toe edge.
- k. A fan progression may be used with this drill, see Appendix C for an explanation of the fan progression.

**SUMMARY:**

This activity is one of many alternatives to tipping and stepping through turns. The shuffling has the advantage of not requiring transferring weight between feet with each step. Shuffling promotes balance and can be an effective way of keeping students centered on their skis. Consider using this activity with students who have difficulty staying centered on their skis.

**7. Pole Push to Edge Drag**

**WHAT:** Pole Push to Edge Drag

**WHY:** Learn to control speed by skidding and keeping both skis on the snow (Edging, Rotary, and Balancing Skills)

**WHERE:** Flats

**HOW:** Lightening and tipping the uphill (inside) foot to it's little-toe edge will engage the edges of both skis if the center of mass moves into the turn. This will create a direction change as the edges brush along the surface of the snow. (Fundamental Movements: **Invert** inside Foot, **Flex** inside leg, **External Rotation** of inside leg, possibly **Adduct** inside leg)

- a. On the flats or in a shallow traverse, a pole push starts the skier sliding.
- b. The downhill ski is flat. The uphill foot lightens and starts to tip to the little-toe edge.
- c. The uphill foot remains light and continues tipping until the downhill ski develops a slight edge because the hips move slightly into the turn.
- d. The skis skid in a gradual turn.
- e. Another pole push keeps the skier moving.
- f. Drag the inverted foot towards the downhill ski to tighten the turn arc (This lets the hips move more into the turn).

**SUMMARY:**

The Edge Drag introduces a skidded direction change with completely controlled skidding. Notice how the downhill ski is pulled on edge by the tipping action of the uphill (inside) ski. Skidding may be controlled with or without steering or twisting the downhill foot.

## 8. Edge Drag Around a Circle

WHAT: Edge Drag Around a Circle

WHY: Learn to control speed by skidding and keeping both skis on the snow (Edging, Rotary, and Balancing Skills)

WHERE: Flats or very shallow slope

HOW: Push with poles and/or shuffle to reach the high point of the circle. Before descending a slight slope, the outside ski is flattened on the snow, while the inside ski is tipped so its little-toe edge drags against the snow. (Fundamental Movements: **Invert** inside Foot, **Flex** inside leg, **External Rotation** of inside leg, possibly **Adduct** inside leg)

- a. The inside ski tips toward the little-toe edge while the outside ski starts flat.
- b. Push off with the poles or slide with the slope, depending on the terrain.
- c. Tipping the inside ski to a greater edge angle while lightening it, increases turning and pulls outside ski on slight edge as hips move into turn.
- g. Pushing with the poles propels the skier through the bottom of the arc.

### SUMMARY:

This exercise reinforces the Edge Drag and begins to allow students to experience using skidding in the bottom half of the turn on a slope, with gravity providing propulsion. The tipping inside ski brings the flattened outside ski around the circle as the hips move into the turn. After a few laps, a berm or lip develops (in soft snow), defining the edge of the circle. The lip can be a very helpful tool. Have students tip the inside boot toward the berm and keep the little-toe edge of that ski in contact with the berm. This encourages strong tipping of the inside foot.

## 9. Edge Drag Garland

WHAT: Edge Drag Garland

WHY: Learn to control speed by releasing and engaging edges and keeping both Skis on the snow (Edging, Rotary, Pressure Control, and Balancing Skills)

WHERE: Shallow slope

HOW: Push with poles and/or shuffle skis. Before descending a slight slope, the outside ski is flattened on the snow, while the inside ski is tipped so its little-toe edge drags against the snow. (Fundamental Movements: **Invert** inside Foot, **Flex** inside leg, **External Rotation** of inside leg, possibly **Adduct** inside leg)

- a. Have students stand with skis across the hill.
- b. More weight should be on the downhill foot.
- c. The downhill ski is the accelerator the uphill ski is the brake.
- d. Flattening the downhill foot by rolling it toward the little-toe edge will cause it to release and slide: the accelerator.
- e. Tipping the uphill ski to a greater edge angle by rolling it toward the little-toe edge will cause it to grip and engage more: the brake.
- f. Downhill ski is flattened until it starts to slip. It will move downhill and slightly forward as uphill (brake) foot is pulled by the hips moving down the hill. The uphill foot glides alongside the accelerator foot.

- g. Additional tipping of the brake foot to little-toe edge, accompanied by drawing it closer to the downhill foot (adduction of uphill leg) will bring the hips up the hill and turn the downhill ski gradually out of the fall line.
- h. Flattening the accelerator (downhill ski) starts the skis slipping. (RELEASE)
- i. Tipping and drawing in the brake foot created a shallow turn and slows or stops slipping.
- j. The actions can be performed together to yield a steady descent, or they can be alternated to start and stop.
- k. With forward motion, the start and stop can connect to make Edge Drag garlands. Have the students experiment with the interaction between the acceleration foot and the brake foot.
- l. A refinement involves lightening the brake foot while it tips. This action will shorten the turn radius and bring the skier to a stop more quickly.

**SUMMARY:**

The edge drag is a versatile exercise that coordinates tipping actions of both feet. It introduces releasing and produces side slip with control of downhill motion and ski direction. Most importantly, it provides the transition from stepping and shuffling to actual parallel skiing. The edge drag gives the student turning ability and speed control with the skis parallel, and soon evolves to become a parallel skid in the last third of a turn.

**10. Edge Drag to Parallel Arc**

**WHAT:** Edge Drag to Parallel Arc

**WHY:** Learn to make a full turn by releasing and engaging edges and keeping both skis on the snow (Edging, Rotary, and Balancing Skills)

**WHERE:** Shallow slope with run-out

**HOW:** The downhill foot is tipped toward it's little-toe edge causing RELEASE and acceleration. As the skis enter the fall line, the downhill foot continues to be tipped onto it's little-toe edge causing ENGAGEMENT and deceleration. (Fundamental Movements: **Invert** inside Foot, **Flex** inside leg, **External Rotation** of inside leg, possibly **Adduct** inside leg)

- a. Start in a shallow traverse, with balance primarily on the downhill foot.
- b. The uphill ski is firmly on its little-toe edge.
- c. The downhill ski is flattened first, the accelerator. As it starts to move downhill, it is continuing to be tipped towards it's little-toe edge through the fall line.
- d. The uphill foot is pulled along as the skis glide forward and into an arc, and becomes the new downhill foot which bears most of the weight.
- e. Tipping to release the edges is what starts the skis turning.
- f. Repeat in each direction.
- g. Link two turns by alternating the foot that is tipped to it's little-toe edge.
- h. Link a series of turns.
- i. Coordination of the accelerator foot (downhill) flattening and the braking (uphill) foot tipping varies the size and shape of the resulting parallel arc.

### SUMMARY:

This activity can serve as a progression from tipping with stepping, tapping, or shuffling to parallel turns, or as alternative to any of the above. Continued adduction of the inside leg recruits the center of mass to move toward the turn. Eventually, the student should work toward not using adduction so as to maintain stance width throughout the turn.

## **V. PATHWAY FROM A WEDGE *Beginner Zone/ Intermediate Zone 4*** (Use IF you get a student that has already learned to ski in a wedge)

### **1. Introduction to Little-Toe Edges**

WHAT: Introduction to Little-Toe Edges

WHY: Develop awareness of, and ability to, balance on little-toe edge: used to facilitate parallel turns (Edging and Balancing Skills)

WHERE: Flats and shallow slope

HOW: Tip to little-toe edges. Balance on little-toe edges by flexing lightened leg. (Fundamental Movements: **Invert** Foot, **Flex** leg)

- a. Tip to little-toe edges of one foot, then the other to the point the hips move in the tipping direction.
- b. Balance on one little-toe edge and then the other.
- c. Practice stepping, shuffling, tapping, and/or edge dragging to little-toe edges through ovals.
- d. Practice stepping, shuffling, tapping, and/or edge dragging to little-toe edges through the S-line.
- e. In a wedge traverse, tap the uphill ski while tipping it to its little-toe edge.
- f. Repeat in opposite direction.

### SUMMARY:

Many students will have had previous lessons. They may be familiar with the wedge and an emphasis on the big-toe edges. Balancing with the skis parallel and using the little-toe edges may be difficult for these students. Although the Parallel Pathway does not teach a wedge, the movements are very effective at eliminating the wedge and bringing skiers to parallel. The idea is to have them reduce outside leg steering and increase uphill ski tipping and steering. Once the student can transfer balance and use the little-toe edges, they are ready for the wedge to the edge-drag move progression.

### **2. Brushing to Edge Drag with One Ski**

WHAT: Brushing to Edge Drag with One Ski

WHY: Develop awareness of, and Ability to, move from a wedge to parallel position (Edging and Balancing Skills)

WHERE: Shallow slope

HOW: Remove downhill ski. Lighten and tip uphill ski to little-toe edge. (Fundamental Movements: **Invert** inside Foot, **Flex** inside leg, **Adduct** inside leg)

- a. Take off downhill ski.
- b. The poles can be used to help balance.

- c. The weighted foot (downhill) is firmly placed in the snow for support and balance. The back or tail of the lightened (uphill) ski is moved up the slope to simulate the wedge position.
- d. The lightened foot is drawn toward the weighted foot with a light brushing/dragging action on the snow. As the ski starts to move closer, the focus is on tipping the lightened foot toward the little-toe edge. The contact of the little-toe edge should be sensed against the snow.
- e. Introduce all varieties of moving the lightened (uphill) foot while tipping: lifting, gliding over the snow, brushing the snow, tapping the snow with the tail of the ski, and scraping the snow.

**SUMMARY:**

It is helpful for the wedge skier to practice the actions of the uphill/lightened foot, while the downhill/weighted ski is removed. This activity simulates movements that can be used to eliminate a wedge. This activity can be performed on the flats or a gentle slope.

**3. Edge Drag from a Wedge Traverse**

**WHAT:** Edge Drag from Wedge Traverse

**WHY:** Develop ability to move from a wedge to parallel position (Edging and Balancing Skills)

**WHERE:** Shallow slope

**HOW:** From a wedge traverse lighten and tip the uphill foot to transfer weight to the downhill foot and start the CM moving to the inside of the turn, resulting in a parallel finish. (Fundamental Movements: **Invert** inside Foot, **Flex** inside leg, **Adduct** inside leg)

- a. In a wedge traverse, balance is on the weighted foot. The uphill foot /lightened foot is rolled toward its little-toe edge so it is flat on the snow.
- b. The lightened ski continues tipping toward the little-toe and is drawn in toward the weighted foot (adduction) as the ski glides over the snow.
- c. Tipping gets easier as the foot is brought closer to the weighted foot.
- d. The lightened foot may be tipped even more aggressively, to edge it more than the weighted foot.
- e. The skis turn with minimal effort. This is an introduction to the edge-drag move.

**SUMMARY:**

The goal of this activity is to establish active inside foot tipping for a wedge skier. The wedge skier will go through a transition from active downhill leg steering to effective downhill leg balancing, and from opposing inside ski edges to corresponding ski engagement through tipping actions. Balance may be impaired if the actions start with the downhill foot. Tipping movements of the lightened (uphill) foot pull the hips in the direction of the turn. Sensations from the foot convey how the ski is behaving and enable the skier to adjust the foot.

#### 4. Edge Drag from a Wedge Turn to Parallel Turns

WHAT: Edge Drag from Wedge Turn

WHY: Develop ability to move from a wedge to parallel position in a turn (Edging, Rotary, and Balancing Skills)

WHERE: Shallow slope

HOW: Combine movements of Edge Drag into one full turn by tipping to the little-toe edge of the downhill ski and continuing to tip that ski to engage that edge as the fall line is entered. (Fundamental Movements: **Invert** inside Foot, **Flex** inside leg, **External Rotation** of inside leg, **Adduct** inside leg)

- a. The skis, pointing approximately forty-five degrees toward the fall line, begin to slide forward.
- b. The tail of the uphill ski is lightened and pulled toward the weighted (downhill) foot. At the same time, the lightened foot begins tipping toward the little-toe.
- c. Once the skis are parallel and balance is totally on the weighted foot, continue the tipping action of the lightened foot. The uphill foot (lightened) is kept close enough to the snow to feel the little-toe edge grazing the surface.
- d. The weighted (downhill) ski engages automatically through the continued tipping action of the lightened foot and movement of hips into the turn. The arc is maintained by increased tipping action of the lightened foot.
- e. Use a fan progression to make a full turn in each direction using this activity, See Appendix C for explanation of fan progression.
- f. Link two turns using this activity by switching the foot being tipped to its little-toe edge and allowing the hips to continue moving down the hill.

#### SUMMARY:

The Edge Drag allows the student to control the radius of the turn by adjusting the duration, intensity, and rate of movements. Your students can practice the Edge Drag movements in a fan progression, or linked together in garlands or turns. It's a crucial step toward parallel skiing. To become consistent parallel skiers, the students must use foot movements that keep the body's center of mass inside the turn arc/both skis during a parallel turn. Eventually, by adjusting the duration, intensity, rate, and timing (D.I.R.T.) of these movements, the students will not need to start from the wedge position.

#### REFERENCES:

The above pathway was adapted from reference 4 and 5, and reproduced with the author's permission. Additional information on Parallel Pathways can be found in the Stepping Stones link in reference 6, and in references 1, 22, and 24. All references are listed at the end of the study guide in the reference section.

**(Riding the lifts should be introduced when appropriate. Information on this can be found in appendix E-5: Riding Lifts)**

# Appendix E-5: Riding Lifts

(From E-2, E-3, or E-4)

## I. ROPE TOW *Beginner Zone*

### 1. Safety Precautions and Procedures for lift Use (at bottom of lift)

- Remove and tuck poles under outside armpit
- Step laterally into track, skis matched pointing straight uphill
- Flex ankles, knees, slightly at waist, stand on whole foot
- SLOWLY grasp/squeeze rope as it slides through gloves
- In preparation to let go of rope, look ahead for designated spot
- Take large quick steps with ski furthest from rope and let go of rope
- Keep stepping away from rope until both skis are pointed across the slope
- Slide away from rope and stop

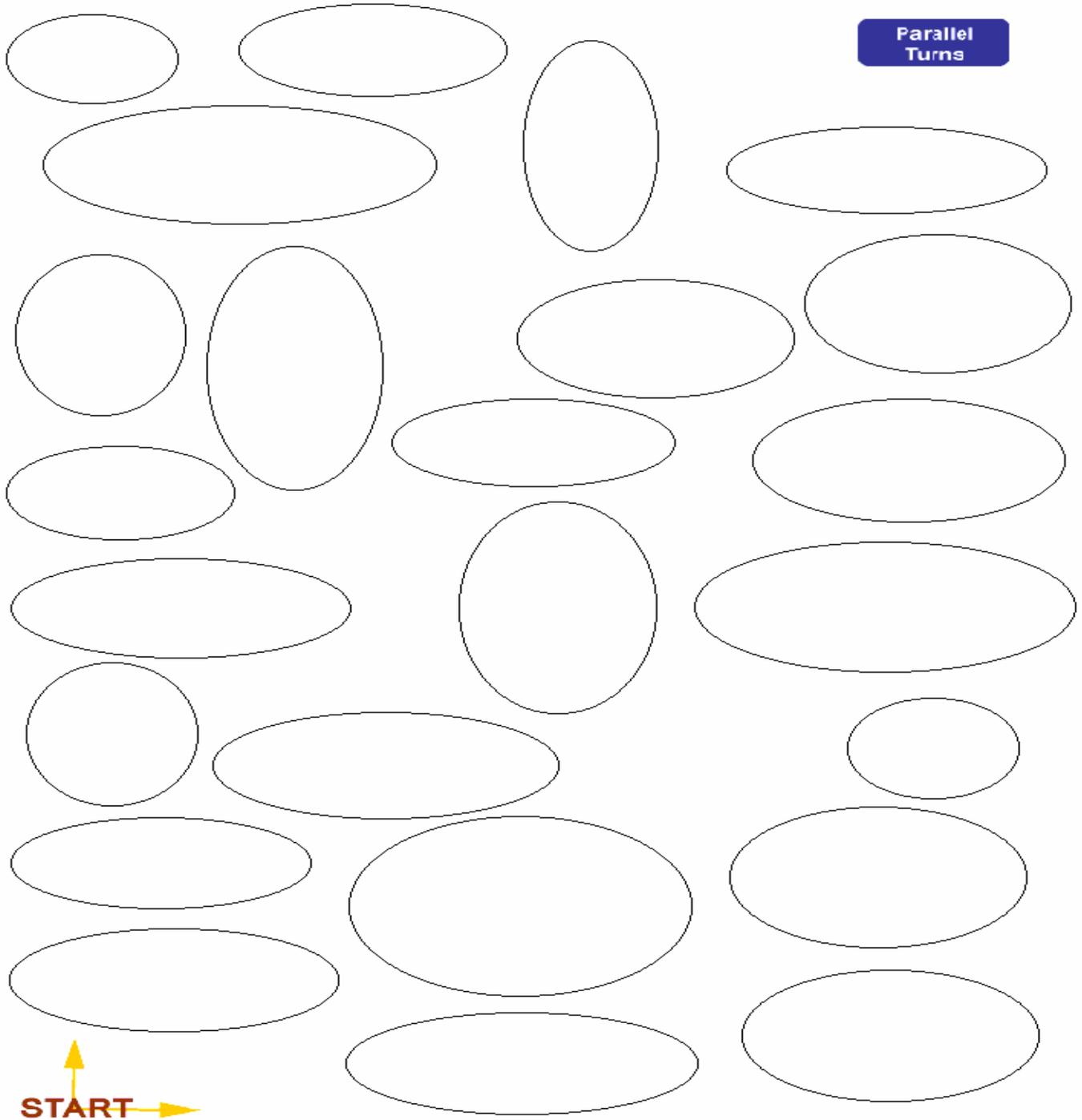
## II. CHAIRLIFT *Beginner Zone*

### 1. Safety Precautions and Procedures for Lift Use (at bottom of lift)

- Explain lift line eddicate (no skipping, alternate in line, etc.)
- Look to see what type of chair (bar in the middle vs. bars on the outside) to determine which hand will be used to grab the chair
- Remove poles and place in hand that will not be used to grab chair
- As chair passes, slide forward and follow it
- Turn to face the chair as it comes and reach to grab the bar with the free hand
- Sit down as chair approaches
- After chair gets away from the ground, drop any safety bar
- Look ahead to the top of chairlift and put safety bar up before getting there
- As the exit ramp is approached, keep ski tips up
- When feet are entirely over snow area of ramp that is flat or sloping away from the chair, stand up and slide away from the chair
- Turn and get out of the way of the people behind you
- If you fall, attempt to get out of the way of the people behind you as quickly as possible

# Appendix F: (Blank) Stepping Stones

Please use the following blank Stepping Stones to develop your own pathway



# References

The References also serve as suggested reading for more in depth information on a variety of subjects mentioned throughout this document

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20. <http://www.valariekeaton.com/thch2.htm>
21. <http://www.psia-c.org/Education/PSIACLevel1Portfolio.pdf>
22. <http://www.harbskisystems.com/>
23. For more detail on these Hybrid Pathway activities, and more, please request a copy of the more comprehensive document from Roger Kane at [arc2arc@charter.net](mailto:arc2arc@charter.net)
24. [http://www.psia.org/psia\\_2002/education\\_t.asp?mode=interactive](http://www.psia.org/psia_2002/education_t.asp?mode=interactive)

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