PSIA EASTERN DIVISION

Alpine Study Guide Intro

This Study Guide is a reference aid to Snow Sports Teaching Professionals. It is divided into six subject areas – the same six subject areas used for the National Professional Knowledge Level II and III exams (on-line written exams.) The Study Guide provides sample articles about these six subject areas, followed by a few questions to stimulate and challenge the reader. Listed within each section will be additional references for reading materials and visual media that will deepen the reader's knowledge of the subject and quite likely answer the previously posed questions. This Study Guide does not contain all the knowledge needed to pass an exam, however it is designed to direct candidates to where much of the information can be found.

It should be noted that some of the material presented in each section may be dated and refer to concepts we no longer use. However these articles are still beneficial and have valuable information that would be useful in preparing for a certification exam.

For information on the exam process and the National Certification Standards, please refer to the Alpine Exam Guide. Best wishes pursuing your goals and kudos for accelerating your professional development.

PSIA-E Vision and Mission Statement:

PSIA-E Vision Statement: PSIA-E works to inspire life-long passion for snowsports.

PSIA-E Mission Statement: To provide professional development opportunities that continuously improve member fulfillment and guest satisfaction in order to strengthen the snowsports industry.

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Movement Analysis

This subject area pertains to the movement of skier's bodies, their equipment, and the snow. This encompasses cause and effect relationships along with descriptive and prescriptive advice for performance change.

Conditions: Tactics, Technique

This subject area pertains to understanding what to do with the body, with the skis, with the snow, and with the conditions. This encompasses stages in a skiers technical development and what technique changes will advance a skiers skill. How skill blend and tactical choices (radius, speed, terrain) affects performance in different conditions and terrain.

Science of Skiing: Biomechanics, Equipment, Physics

This subject area pertains to facts related to body parts, equipment design, and how the laws of physics, forces and motion relate to alpine skiing and the human body.

Industry: Customer Service, Safety, Risk Management, History

This subject area pertains to a broad base of circumstantial knowledge pertaining to the job duties of a person involved in snow sports instruction.

The Resort Guest

Your resort is in the business of creating memorable experiences. Those experiences are shaped by interactions with resort staff members. From the moment a hopeful resort enthusiast picks up a phone or logs onto the web to make a reservation, until the gear is packed and the trip home has begun, hundreds of interactions with staff members contribute to the overall impression of the resort. As a ski coach you have the longest interaction (face time) with the guest, more than any other person or any other department. We need to be able to assist the guest with all questions about the resort. Snowsports teachers, through the relationships they build with students, have the power to enhance the resort experience exponentially. Important qualities for instructors in the modern world of ski teaching include:

- Understanding and responding to guest expectations
- Providing value to the guest through skill development
- An understanding of their responsibilities to the ski industry, their home resort and their guest.

Be sure you **Know the Code**: You're Responsibility Code provides safety tips while on the slopes. Smart Style is a terrain park specific safety program that you should check out before using terrain parks.

Four Main Points of Smart Style

- MAKE A PLAN
  - Every time you use Freestyle Terrain, make a plan for each feature you want to use.
  - Your speed, approach and takeoff will directly affect your maneuver and landing.
- LOOK BEFORE YOU LEAP
  - Before getting into freestyle terrain observe all signage and warnings
  - Scope around the jumps first not over them
  - Use your first run as a warm up run and to familiarize yourself with the terrain
  - Be aware that the features change constantly due to weather, usage, grooming and time of day
  - Do not jump blindly and use a spotter when necessary
- EASY STYLE IT
  - Know your limits and ski/ride within your ability level
  - Look for small progression parks or features to begin with and work your way up
  - Freestyle skills require maintaining control on the ground and in the air
  - Do not attempt any features unless you have sufficient ability and experience to do so safely
  - Inverted aerials increase your risk of injury and are not recommended
- RESPECT GETS RESPECT
  - Respect the terrain and others
  - One person on a feature at a time
  - Wait your turn and call your start
  - Always clear the landing area quickly
  - Respect all signs and stay off closed terrain and features

Recommended Articles

Fresh Start: Is this the New Golden Age of Snowsports Instruction
by Peter Kray, 32 Degrees, Winter 2011
Crossing the Line
by Peter Oliver, Ski Area Management, March 2011
Creating Skiers
by Ron LeMaster, Ski Area Management, May 2011
An Overview of PSIA and PSIA-E
Compiled and edited from several sources

Additional Reference Materials

In addition to the articles included in this section to prepare members for this key area, there are several recommended reading publications.

- 2010 PSIA/AASI Core Concepts for Snowsports Instructors Manual
- PSIA Alpine Technical Manual: Skiing and Teaching Skills 2nd Edition (2002)
- PSIA Adaptive Manual
- Making First Tracks
- Take Customer Service to the Next Level
- by Michael Patmas, M.D., 32 Degrees, Fall 2010
- Professionalism – What does it mean to you?
- By John Armstrong, 32 Degrees, Spring 2009

Suggested PSIA-E Continuing Education Clinics

- Safe Coaching – One day on snow
- At Your Service – One day indoor
- Free Ride Clinic – Two days on snow
- History Comes Alive – Two days on snow
- ART – Alpine Resort Trainer – Two days on snow
- Snowsports School Management Seminar – Two days, on snow and indoor options

Sample Exam Study Questions.

1. One way to make your ski lesson a more enjoyable and valuable experience for your guest is to:
    a. Challenge your student with terrain that is slightly above their level.
    b. Move quickly through skill-drills to get them to their desired trail.
    c. Check to see if the student has equipment and clothing that fits and is appropriate for the conditions.
    d. Suggest alternatives to skiing when the customer feels unsuccessful.

2. A skier who is on a trail and is merging onto a new trail must:
    a. Slow down, look uphill and yield before going onto the new trail.
    b. Be careful but does not have to yield.
    c. Continue to ski and move quickly onto the new trail to get into the flow of skiers.
    d. Come to a complete stop, look up hill then proceed if clear.

3. The benefit to the customer with a *Stepping Stones* approach to learning to ski is that:
    a. Stepping Stones gets the student to a desirable outcome through a linear progression
    b. Stepping Stones methods allow the instructor to design a pathway to learning that can be customized to a student's needs and desires
    c. Stepping Stones allows the instructor to take more time on all the skills needed for skiing
    d. Stepping Stones will get each student skiing parallel much faster

4. Customers at a ski resort like to feel like an "insider." Which of the choices below is ***not*** a way to make your customers feel like an insider?
    a. Telling them where there is a great happy hour special
    b. Showing them the secret good parking spot
    c. Calling your favorite restaurant to make a reservation for them
    d. Telling them which resort policies you disagree with

5. Approximately how much does the sun's ultraviolet radiation increase for every 1,000 feet of elevation gain?
    a. 12-15 percent
    b. No increase
    c. 1-2 percent
    d. 4-5 percent

6. When coaching risk awareness, it is important to remember that young children need:
    a. Frequent bathroom breaks
    b. Concrete experience and to experience risks directly
    c. Specific boundaries and close supervision
    d. Logical explanations of risks and consequences

Specific Populations: Children, Seniors, Special Needs

This subject area pertains to the understanding necessary to make specific modifications to meet the learning needs of specific populations. This encompasses understanding the physiology, psychology, and emotional development of these specific populations.

Appreciating Diversity

One way to stay excited about developing your teaching skill is to learn about a special population or learn to teach another snowsport. Diversification will provide new perspectives on learning, coaching, and performance. Through diversification, you will become more valuable to your alpine, Nordic, or snowboard school in addition to providing yourself with an antidote for getting stuck in a rut. Following are guidelines for some of these special populations however each student should be assessed individually.

Women

Recent industry publications are targeting women as the decision-makers in the family when it comes to vacations. If "mom" isn't crazy about winter sports, she's not going to agree to hang around for long, shopping or reading, while hubby and the kids have all the fun. Helping make women passionate about snowsports is critical to keeping the family coming back for more.

Most programs now include clinics specifically for women. Some women feel more comfortable learning new skills with and from other women. There's a different atmosphere in a group of women than in a mixed group. In a group of women, it can be easier to ask questions and focus on learning, so progress is quicker.

It sometimes is amazing to see the support and camaraderie that women can provide in a group. The atmosphere stays just as competitive, just as intense, yet the competition is within, not between, individuals. The intensity goes toward pushing each other as far as possible without sacrificing self-worth by comparing one's own goals or progress with those of others.

Seniors

Everyone's getting older. It's inevitable. Yet, growth in snowsports participation among seniors is disproportionately small compared to the population at large. Aging snowsports enthusiasts are heading to other activities, such as golf, at a rapid and, from some perspectives, an alarming rate. Happily, the ones who stay are realizing that they can continue to enjoy the mountain environment far into their later years.

Seniors groups are springing up all over the country. With names like "Silver Wings" and "Prime Time," the focus is on enjoying the thrill of winter sports and the mountain environment. Their purpose also includes a social component as they look for ways to meet and interact with others now that they don't have jobs to go to and their children have reached adulthood and are busy with their own lives and families.

While elders are less energetic and slower at showing improvement than younger groups, teaching them has its own rewards. These are people who have learned to savor life, to appreciate a gorgeous day and beautiful scenery, to revel in seemingly minor accomplishments, to draw from the energy of their younger instructor—and to make every run count.

PSIA-AASI members age too. As we age, we discover tricks to help us "keep up" longer. Sharing these insights with other aging participants can be gratifying and exciting both for older professionals and for younger ones seeking wisdom from their senior peers and mentors.

Adaptive
For any winter sport professional that wants to gain a sense of what really matters, coaching in an adaptive program may fill the bill. To coach students with special physical or mental needs, a pro must look for what each student can do, instead of what they can't. This can often be a monumental challenge that forces you to change your own definition of success.

Adaptive teaching doesn't mean lowering expectations, but realizing that success has many facets and that finding a path to success for each student is the ultimate challenge. Helping someone with one leg learn to be independent with outriggers, or a paraplegic learn to negotiate the mountain on a sled, can open up a whole new world of possibilities for growth and appreciation of the sport—and of life—for you as well as the student.

Children
Nationally, children represent 50 to 60 percent of all lessons taught. What better place to leave a legacy than with a group of kids who come back year after year and ask specifically for you? Children are exciting to coach: they are energetic, learn quickly, and push themselves willingly.

The main challenge in teaching children is to keep them safe and learning while having more fun than they dreamed possible. This can be the easiest task for you on some days, and the most difficult on others.

The best thing about coaching children is that they have a unique way of reminding you of why you came to the mountains in the first place. If it isn't fun, it isn't worth doing. This forces the teacher to connect the drills and teaching activities with the fun they were designed to produce…something we all lose sight of from time to time.
Learning to tap into your imagination to capture the attention of a group of young children will help you bring the same creativity to all aspects of your coaching.

What you need to know:
- How to motivate children.
- Ages and stages of development.
- Physical capabilities for different age groups.
- Recognizing limitations in equipment.
- How to involve the parents in the process.

Overview of Childhood Development
As you begin your journey as a ski instructor, it is important to gain knowledge about the growth and development of human beings as it relates to skiing. With more experience, you will need to gain more understanding of how this development can affect what and how you teach, and as a master teacher, you will rely on developmental information to help you truly individualize instruction for any student you encounter.

To help you organize your thoughts regarding developmental issues, we refer to the information as "The C.A.P. Model." The acronym merely helps you to remember the three basic categories [Cognitive, Affective, Physical], which make up human development as it relates to skiing. One goal as we teach skiing is to help children understand how to behave and move in desirable ways. The level at which a child understands, behaves and moves depends on growth and development.

The C.A.P. MODEL [Cognitive, Affective, Physical]

Your ability to communicate skiing information to children (*cognitive*) depends on:

- How children process information.
- How children express themselves.
- How children reason.

Young children understand the world in concrete or experience based terms. This means they comprehend only what they *can* see or touch, or *have* seen or touched before. Abstract thinking begins to develop by age eleven or twelve.

Concepts such as cause and effect, time and space, and distance and speed, are developed over time. A child's understanding of these ideas can affect their understanding of communication attempts.

The ability to process information grows with the child. Very young children may not be able to attend to putting on skis while receiving stimuli from another source. Very young children may have difficulty sequencing more than one or two tasks, while older children may be able to sequence three or more. Processing of cause and effect, and rules and their consequences, develops with age.

Motivation to ski (*affective*) depends on:

- How children relate to their peers.
- How children relate to adults.
- How children think about themselves.

Egocentricity, the principle that the child is the center of the universe, affects children's behavior. Young children often think they are the cause of any ongoing event. They also have difficulty putting themselves into "someone else's shoes." Older children show egocentricity by thinking that others are always watching them, even when it is obvious they can't be. This causes everything from shyness to cockiness.

Younger children are anxious to *fit into* the group and please others. Older children are more concerned with their position *within* the group. They are more readily influenced by their peers. Younger children are usually not competitive; playing alone is enough. Older children may be competitive, and have their self-worth tied to their accomplishments.

Development of appropriate skiing movements (*physical*) depends on:

- How children's bodies are proportioned.
- The amounts of strength children possess.
- Spatial awareness.
- Whether a child has developed the ability to use parts of the body separately.

Young children's heads and trunks are large in proportion to their limbs. By 8 or 9 years the proportions approximate that of adults. As a result of a higher center of mass, a small child may have a "back" stance with a reliance on heel pressure.

Younger children move the whole body as a unit. The development of fine motor skills is apparent by ages 9-12. Separation of upper and lower body and left and right sides of the body occurs over time as the child grows. The muscles of a young child function as if more loosely attached than those of an adult, affording less strength, yet greater flexibility.

Recommended Articles

Teaching the Aging Population Handbook
PSIA Rocky Mountain Division/AASI
What Women Want
by Krista Crabtree, 32 Degrees, Spring 2011

Additional Reference Materials

In addition to the articles included in this section to prepare members for this key area, there are several recommended reading publications.

- PSIA-E Exam Guide – Teaching Children and Youth Module
- PSIA-AASI Children's Specialist Standards
- 2010 PSIA/AASI Core Concepts for Snowsports Instructors Manual
- Visual Cues to Ideal vs. Real Children's Skiing Movement Guide
- PSIA-AASI Children's Instruction Manual
- PSIA-AASI Children's Instruction Handbook
- PSIA Adaptive Manual

Suggested PSIA-E Continuing Education Clinics

- Children's Specialist 1 – Two days on snow
- Children's Specialist 2 – Two days on snow
- Intro to Kids Zone – Two days on snow
- Advanced Kids Zone – Two days on snow
- Teaching Women – Two days on snow
- Adult Development and Aging – Two days on snow
- Varying Student Populations, One day indoor
- Mainstreaming Tactics – Two days on snow
- Dealing with Autism Spectrum Disorder –Two days on snow
- A Conversation with Fear – One day indoor
- Senior Seminar – Two days on snow

Sample Exam Study Questions

1. A child's concept of who they are is shaped largely by:
    a. the development and use of language
    b. social interactions
    c. interactions with their natural environment
    d. the interests of their peers

2. The average woman has a wider pelvis, which puts the upper leg bone at a greater angle to the vertical. This is called the:
    a. vertical angle
    b. horizontal angle
    c. Q angle
    d. P angle

3. Women have greater mobility in the hip socket than men. Greater flexibility requires more strength to control and stabilize the body. Given this mobility females may tend to:
    a. swing arms too much
    b. sit back
    c. use too much hip rotation when turning
    d. none of the above

4. When a person wants to take a lesson above their skill level so they can stay with their friends, which of Maslow's hierarchy of needs is driving the request?
    a. physiological needs
    b. self actualization
    c. self esteem
    d. belonging

5. Kinesthetic senses are received through:
    a. eyes & ears
    b. ears & muscles
    c. muscles & joints
    d. muscles & joints & skin

6. When determining the level of activity for your ski lesson with an aging skier, which of the following would be the most important area of consideration?
    a. Age
    b. Skiing speed
    c. Pacing of the lesson
    d. Agility

Teaching / Learning Theory

This subject area pertains to “methods of teaching” and the understanding of the psychology of learning. This encompasses methods of moving skiers, communicating information, managing emotions, motivating people, understanding the student, choice of terrain, and formatting lesson plans.

The Learning Experience

New teachers are often worried about what they are going to do in a lesson or clinic, rather than what their students will do. As a result, important clues that could help the teacher succeed are lost. In the first few moments of a lesson, students often reveal their true motivation for embarking on the learning experience, allude to fears or apprehensions, and share insights that can help the teacher determine how they will learn best. This may include everything from their hobbies to family life and previous lessons. All this can be missed if the teacher is not vigilant in actively listening and staying attentive to this important information.

In fact, listening to your students describe precisely what they are looking for, how they learn best, and what experiences they have had in the past will begin to develop an atmosphere in which they work with you to develop a course of action. By getting the learners to talk about their experiences, they will begin to form a trusting partnership. As you question them, and listen actively to their responses, they become part of determining the direction of the clinic. Suddenly, you are no longer there to provide the action plan; you are simply there to provide direction, as they get involved in their own plan of exploration and discovery.

There are four elements that, when artfully combined, create the magical environment where a connection is made between the teacher, the guest, and the mountain environment. The effective uses of these elements combine to create a complete and satisfying learning experience.

Developing Trust:

Trust is the cornerstone of the new guest’s successful experience. If at any time the instructor/ student relationship is compromised the guest may leave the sport never to return.

A competent instructor is skilled at

- Developing a trusting relationship.
- Understanding their students and how they learn.
- Questioning and listening effectively.
- Creating an environment that puts guests at ease.
- Observing student behaviors to determine underlying emotions.

Assessing Movements:

Because the teaching/learning environment is fluid by nature, and circumstances change as learning proceeds, teachers must be able to accurately assess student performance and adjust goals as the lesson progresses.

A competent instructor is skilled at

- Understanding efficient and effective movements of beginning skiers and riders.

Working the Learning Environment:
An artful instructor is able to work the learning environment effectively so that the student/teacher bond of trust remains intact.

A competent instructor is skilled at
- Using available terrain effectively.
- Using a variety of activities with new participants that will help establish a comfortable, fun environment.
- Developing and using fun skiing formats
- Providing information and suggestions for the use of alternative snow tools.

Closing the Loop:
Effective communication is the final element in the learning loop. As with the other three elements, the ability to communicate well can make or break a learning experience. It can provide direction, reinforce a positive change, and redirect unproductive movements or actions. An effective communicator also understands information on teaching and learning styles.

A competent instructor is skilled at
- Providing effective feedback.
- Effectively debriefing a student at the end of a lesson.

A Simple Plan for Delivering an Effective Lesson

Introduction (Goal Setting)
- Introduce yourself.
- Open a dialogue with your student so that you create the feeling that learning is easy and fun.
- Ask questions so you learn about your student and what (s)he wants from you.
- Watch your student so you can discern his/her skill level (and what (s)he needs the most).
- Plan what to do to reach an achievable goal, one that satisfies what your student wants and what you can offer.

Body (The Progression)
- Speak concisely in simple language. Ask, “Am I being clear?”
- Show clearly what to do. Make sure your student can see you.
- Point out parts of the body they should look at. Ask, “Could you see that?”
- Let the student do it.
- Give necessary logistics (follow you? follow another student? where to stop, etc.).

Give Feedback
- Be specific. Check for reaction. End on a positive note.
- Repeat or progress to the next step based on your student’s performance and attitude.

Summary
- Review and reinforce what is gained from the lesson.
- Give practice tips.
- Tell your students what they could learn in a future lesson and if appropriate, when you are available.

Recommended Articles

Supersonic Lessons
by Eric Chandler, 32 Degrees, Fall 2009
Tailor Your Teaching
by Sue Kramer, 32 Degrees, Winter 2010

Additional Reference Materials

In addition to the articles included in this section to prepare members for this key area, there are several recommended reading publications.

- 2010 PSIA/AASI Core Concepts for Snowsports Instructors Manual
- PSIA Alpine Technical Manual: Skiing and Teaching Skills 2nd Edition (2002)
- PSIA Alpine Cues to Effective and Ineffective Teaching
- Making First Tracks
- The Teaching Dimension by Joan Heaton
  - Styles of Teaching
  - The Many Faces of Feedback
  - How do People Learn – That is the Question
  - Delivery System Skills
  - Instructional Segment
  - The Professional Touch
- Skiing Right, by Horst Abraham
- Skiing and Teaching Methods, Canadian Ski Instructors' Alliance (CSIA) 1999

Suggested PSIA-E Educational Clinics:

- Foundations of Teaching – Two days on snow
- Communication Station – One day indoor
- Varying Student Populations – One day indoor
- Teaching Women – Two days on snow
- Level II Teaching Seminar – Two days on snow
- Level III Exam Clinic Part 2 - Teaching – Two days on snow
- A Conversation with Fear – One day indoor
- Teaching – Fundamentals – One day on snow
- Teaching – Accomplished – One day on snow

Sample Exam Study Questions

1. Which of the following is not in McCarthy's classification scheme?
   a. Analytic Learner
   b. Dynamic Learner
   c. Active Experimenter
   d. Receptive Learner

2. When establishing rapport with students which basic questions can be used to assess the student?
   a. Open Questions
   b. Generative Questions
   c. Closed Questions
   d. All of the above

3. In the Instructor Behavior of the Teaching Model which of the following is not directly associated with the Teaching Cycle.

a. Introduce and develop trust
b. Exploring learning styles and preferences
c. Check for understanding
d. Debrief the learning segment

4. Which association of Learning Styles is not connected?

a. Cognitive-Thinker
b. Visual-Watcher
c. Kinesthetic- Doer
d. Experimental- Doer

5. When Debriefing the Student at the end of a lesson an instructor should:

a. Review goals and objectives
b. Encourage sharing stories of success
c. Invite students to explore areas for further development
d. All of the above

6. Sally took an all-day group lesson on Saturday and signed up for a private lesson, first thing on Sunday morning. The Pro asks Sally on their first chairlift ride, “What did you work on yesterday in your class?” This is an example of which type of question:

a. Closed
b. Open
c. Generative
d. Interpretive

Movement Analysis

This subject area pertains to the movement of skier's bodies, their equipment, and the snow. This encompasses cause and effect relationships along with descriptive and prescriptive advice for performance change.

Assessment

Movement assessment is the process of assessing a student's ability – the movement patterns and skill blending – and identifying the cause and effect relationships. The instructor analyzes the separate components of the student's body movements, their equipment and the interaction with the snow to determine the focus of the lesson and identify the steps that will produce the desired results - also known as movement analysis.

For most instructors or coaches, the process of observation and analysis seems to require the mental compilation of a catalog of errors and corresponding corrections. This approach tends to make the job of assessing movement overly abstract and rigid. What is missing from such an approach is the recognition that all of the movement possibilities of skiing operate on something like a sliding scale of relative usefulness. From this perspective, the same movement or combination of movements that provide a positive outcome in one skiing situation might also produce a negative result in a very different situation. The ability to choose appropriate movements for a specific situation or task is the synthesis of technique and tactics. Movement Analysis requires the instructor or coach to put their technical understanding into a tactical context in order to be truly effective.

Basic Guidelines

The instructor's tools to achieve this would include:

Visual Cues	Skier Zones	Movement Analysis Filter
Skills Concept	Stepping Stones	
Skiing Concept	Movement Matrix	

Recommended Articles

Movement Assessment Filter – Rocky Mountain Division

Visual Cues to Effective Skiing

Visual Cues

Additional Reference Materials

In addition to the articles included in this section to prepare members for this key area, there are several recommended reading publications.

- 2010 PSIA/AASI Core Concepts for Snowsports Instructors Manual
- PSIA Alpine Technical Manual: Skiing and Teaching Skills 2nd Edition (2002)
- PSIA Alpine Cues to Effective and Ineffective Teaching
- PSIA Movement Matrix; www.thesnowpros.org
- Have You Lost Your Direction, by Michael Rogan; 32 Degrees, Fall 2009

Suggested PSIA-E Continuing Education Clinics

- Movement Analysis – Two Days on Snow
- Advanced Movement Analysis – Two Days on Snow
- Skiing - B-Pro-ficient – One Day on Snow
- Level III Exam Clinic (with or without video) – 2 Days on Snow

Sample Exam Study Questions

1. A key factor to improving a student's performance is:
   a. The ability to assess body movements
   b. The ability to analyze body movements
   c. The ability to give appropriate feedback
   d. All of the above

2. The expression of how skills combine and come to life is:
   a. The Skiing Concepts
   b. The Skills Concept
   c. Visual Cues
   d. Phases of the turn

3. When assessing a student's skiing ability, it is important to consider:
   a. the stance and how they enter the turn
   b. the turn shape
   c. the application of skills
   d. all of the above

4. Effective carving of the skis is attained when:
   a. the skis move in the direction they are pointed
   b. the tails of the skis take a wider path than the tips
   c. the skis move sideways down the hill
   d. the tails and the tips of the skis follow the same arc

5. Chattering of skis during the completion phase of a turn is most likely attributed to:
   a. dull edges on the persons skis
   b. stance that is too narrow
   c. the ski being tipped too high on edge
   d. ineffective pressure control management

6. When skiing in powder conditions it is appropriate to:
   a. sit back more on the tails of the skis
   b. tip the skis more on edge at the completion phase of the turn
   c. guide the skis completely through lower leg movements
   d. keep pressure management at a minimum because powder is soft

Conditions: Tactics, Technique

This subject area pertains to understanding what to do with the body, with the skis, with the snow, and with the conditions. Instructors should have an understanding of a skier's technical development and what technique changes will advance a skier's skill. How skill blend and tactical choices (radius, speed, terrain) affects performance in different conditions and terrain.

Recommended Articles

How to Make a Mountain Out of A Molehill
by Sue Spencer, Professional Skier, Fall 1995

When Skiing Ice, A Light Touch Will Keep You Vertical
by Jeb Boyd and Matt Boyd, 32 Degrees, Winter 2009

Additional Reference Materials

In addition to the articles included in this section to prepare members for this key area, there are several recommended reading publications.

- 2010 PSIA/AASI Core Concepts for Snowsports Instructors Manual
- PSIA Alpine Technical Manual: Skiing and Teaching Skills 2nd Edition (2002)
- PSIA Alpine Cues to Effective and Ineffective Teaching
- PSIA Tactics for All Mountain Skiing
- PSIA Park & Pipe Instructors Guide
- Effective Ski Coaching, by Tom Reynolds
- Can't Handle the Pressure, Try Redistributing the Load
  by Matt Boyd; 32 Degrees, Winter 2009

Suggested PSIA-E Continuing Education Clinics

- Mogul Series – Two days on snow
- Off Piste – Two days on snow
- Trees and Steeps – Two days on snow
- Skiing Focus: Some Like it Hot – One day on snow
- Master Series Skiing – Two days on snow
- Spring Academy – Four days on snow
- Moguls Series – Two days on snow
- Tactics and Techniques – Two days on snow

Sample Exam Study Questions

1. On steep terrain that has recently received a significant snowfall of fresh and dry powder, the most effective and efficient type of turn would be:
   a. Hop Turns
   b. Pivot Slip Turns
   c. Dynamic Short Radius Turns
   d. Medium Radius Turns

2. A skier who applies the edges of their skis quickly and abruptly on very hard pack or icy conditions will get sustained carving throughout their turn.

True or False

3. In the Skills Concept, the two skills that you would emphasize more over the others in both Powder and Bump skiing are:

a. Edging and Balance
b. Pressure and Edging
c. Rotary and Pressure
d. Balance and Pressure

4. Name four factors that may help achieve desired tactical results:

a. Balance, edging, rotary, pressure
b. Terrain, rotary, balance, pitch
c. Duration, intensity, rate, timing
d. Stance, edge control, equipment, counter

5. This drill is not considered an intermediate drill for learning edging movements:

a. Skate without poles across flat terrain
b. Thousand-step turns
c. Sideslips and hockey stops
d. Javelin turns

6. When making terrain choices that enhance learning, which statement is NOT true?

a. You can only go as far as the weakest member of your group.
b. If you are questioning the choice, err on the side of caution.
c. Difficult tasks should be done in difficult terrain.
d. You can keep more advanced students challenged with a more difficult task, but you can't make a bump run less bumpy.

Science of Skiing: Biomechanics, Equipment, Physics

This subject area pertains to facts related to body parts, equipment design, and how the laws of physics, forces and motion relate to alpine skiing and the human body.

Snow Sports Professionals with a solid understanding of biomechanics, equipment, and physics as it pertains to snow sports, can help customers learn what they want to know. They can provide advice and activities that makes sense. It is advice that is physically possible and specific to how the human body moves. They can describe how the skis/snowboard interact with the snow, and how equipment set-up and equipment changes will affect performance. They can create and modify activities that cause and highlight performance changes.

This is a subject area that all too often can get overly complicated. Our level of understanding is what allows us to keep it simple if need be. Clear advice that is delivered at the right time, and at the level of depth the customer can benefit from is the goal.

Recommended Articles

Biomechanics and the Understanding Of
by Juris Vagners, Spring 1992 Northern Rocky Mountain Newsletter

Choices, Choices
by Mike Porter, 32 Degrees, Fall 2009

Additional Reference Materials

In addition to the articles included in this section to prepare members for this key area, there are several recommended reading publications.

- 2010 PSIA/AASI Core Concepts for Snowsports Instructors Manual
- PSIA Alpine Technical Manual: Skiing and Teaching Skills 2nd Edition (2002)
- PSIA Alpine Cues to Effective and Ineffective Skiing
- PSIA Tactics for All Mountain Skiing
- PSIA Park & Pipe Instructors Guide
-The Skier's Edge, by Ron LeMaster
- The Essential Guide to Skiing: 201 Things Every Skier Must Know, by Ron LeMaster
- Ultimate Skiing, by Ron LeMaster
- Technical Skills for Alpine Skiing, by Ellen Post Foster
- Rocker goes Richer, by Peter Kray; 32 Degrees, Fall 2010
- Rocker Your World, by Jim Schanzenbaker, 32 Degrees, Spring 2011

Suggested Continuing Education Clinics

- Science of Skiing – Two days on snow
- Biomechanics – Two days on snow
- Anatomy – One day indoor
- Exercise Physiology – Two days on snow
- Exercise Physiology – One day indoor
- Movement Analysis – Two days on snow
- Advanced Movement Analysis – Two days on snow

Sample Exam Study Questions

1. To help your students have a smoother experience in choppy conditions, teach them how to:

   a. increase their edge angle earlier in the turn
   b. extend more into the turn
   c. flex and extend to absorb terrain
   d. increase edge angle at the end of the turn

2. If an intermediate student is struggling to get rid of a wedge or stem at the start of their turns (so that they can make parallel turns), the ***least*** effective teaching approach would be to use exercises that teach them to:

   a. increase the amount of inside leg steering
   b. release their edges from the last turn before applying other skills to start the next turn
   c. extend vertically to lighten their skis at the start of the turn
   d. transfer pressure to the new outside ski and move their body towards the new turn

3. Increasing the amount of edge angle *without* adding more rotary forces to the skis will:

   a. Slow you down
   b. Add more skidding
   c. Increase your speed
   d. Maintain the same speed

4. In the skills concept, the blending of skills with beginning skiers is primarily:

   a. focused on edging and balance
   b. focused on turning using pressure control movements
   c. focused on balance and rotary movements
   d. focused on pressure control movements and balance

5. On intermediate terrain (Blue Square) moguls, an efficient skier will always:

   a. Ski the “zipper-line”
   b. Ski over the tops of the moguls
   c. Allow the skis to skid
   d. Change tactics as appropriate

6. There are three planes of movement we use to describe human movement. Which of these is not one of them:

   a. Frontal
   b. Sagittal
   c. Horizontal/Transverse
   d. Vertical

Study Questions Answer Key

Industry: Customer Service, Safety, Risk Management, History

1. One way to make your ski lesson a more enjoyable and valuable experience for your guest is to:
Alpine Technical Manual – Page 56 – Correct answer is C

2. A skier who is on a trail and is merging onto a new trail must:
Alpine Technical Manual – Page 56 – Correct answer is A

3. The benefit to the customer with a *Stepping Stones* approach to learning to ski is that:
Alpine Technical Manual – Page 35 – Correct answer is B

4. Customers at a ski resort like to feel like an "insider." Which of the choices below is ***not*** a way to make your customers feel like an insider?
Core Concepts Manual - Page 62 – Correct answer is D

5. Approximately how much does the sun's ultraviolet radiation increase for every 1,000 feet of elevation gain?
Core Concepts Manual – Page 67 - Correct answer is D

6. When coaching risk awareness, it is important to remember that young children need…
Core Concepts Manual – Page 64 – Correct answer is C

Specific Populations

1. A child's concept of who they are is shaped largely by:
Children's Instruction Manual, p. 14 – Correct answer is B

2. The average woman has a wider pelvis, which puts the upper leg bone at a greater angle to the vertical. This is called the:
Core Concepts Manual, Page 22 – Correct answer is C

3. Women have greater mobility in the hip socket than men. Greater flexibility requires more strength to control and stabilize the body. Given this mobility females may tend to:
Core Concepts Manual, Page 22 – Correct answer is C

4. When a person wants to take a lesson above their skill level so they can stay with their friends, which of Maslow's hierarchy of needs is driving the request?
Children's manual page 97 – Correct answer is D

5. Kinesthetic senses are received through:
Children's manual page 105 – Correct answer is D

6. When determining the level of activity for your ski lesson with an aging skier, which of the following would be the most important area of consideration?
Core Concepts Manual, Page 82 – Correct answer is C

Teaching / Learning Theory Sample Exam Study Questions

1. Which of the following is not in McCarthy's classification scheme?
Core Concepts Manual – Page 14 - Correct answer is D

2. When establishing rapport with students which basic questions can be used to assess the student?
Core Concepts Manual – Page 27 - Correct answer is D

3. In the Instructor Behavior of the Teaching Model which of the following is not directly associated with the Teaching Cycle.
Alpine Technical Manual – Page 47- Correct answer is B

4. Which association of Learning Styles is not connected?
Alpine Technical Manual – Page 49 - The correct answer is C

5. When Debriefing the Student at the end of a lesson an instructor should:
Alpine Technical Manual – Page 50 - The correct answer is D

6. Sally took an all-day group lesson on Saturday and signed up for a private lesson, first thing on Sunday morning. The Pro asks Sally on their first chairlift ride, "What did you work on yesterday in your class?" This is an example of which type of question:
Core Concepts Manual - Page 27 – Correct answer is B

Movement Analysis

1. A key factor to improving a student's performance is:
Core Concepts Manual – page 24 - answer is D

2. The expression of how skills combine and come to life is:
Alpine Technical Manual, pg 9 – answer is B

3. When assessing a student's skiing ability, it is important to consider:
Alpine Technical Manual, pg 30 – answer is D

4. Effective carving of the skis is attained when:
Alpine Technical Manual – Page 26 – Correct answer is D

5. Chattering of skis during the completion phase of a turn is most likely attributed to:
Alpine Technical Manual – Page 16 – Correct answer is D

6. When skiing in powder conditions it is appropriate to:
Alpine Technical Manual – Page 19 – Correct answer is C

Conditions: Tactics, Technique

1. On steep terrain that has recently received a significant snowfall of fresh and dry powder, the most effective and efficient type of turn would be:
Tactics for All Mountain Skiing – Page 45 – Correct answer is D

2. A skier who applies the edges of their skis quickly and abruptly on very hard pack or icy conditions will get sustained carving throughout their turn.
Tactics for All Mountain Skiing – Page 72 - Correct answer: False

3. In the Skills Concept, the two skills that you would emphasize more over the others in both Powder and Bump skiing are:
Tactics for All Mountain Skiing – Page 23 - Correct answer is C

4. Name four factors that may help achieve desired tactical results:
Alpine Technical Manual, Page 18 – Correct answer is C

5. This drill is not considered an intermediate drill for learning edging movements:
Alpine Technical Manual, Page 58 – Correct answer is D

6. When making terrain choices that enhance learning, which statement is NOT true?
Core Concepts, Page 65 – Correct answer is C

Science of Skiing

1. To help your students have a smoother experience in choppy conditions, teach them how to:
Tactics for All Mountain Skiing – Page 14 - Correct answer is C

2. If an intermediate student is struggling to get rid of a wedge or stem at the start of their turns (so that they can make parallel turns), the ***least*** effective teaching approach would be to use exercises that teach them to:
Alpine Technical Manual – Page 46 - Correct answer is C

3. Increasing the amount of edge angle *without* adding more rotary forces to the skis will:
Alpine Technical Manual – Page 17 – Correct answer is C

4. In the skills concept, the blending of skills with beginning skiers is primarily:
Alpine Technical Manual – Page 18 – Correct answer is C

5. On intermediate terrain (Blue Square) moguls, an efficient skier will always:
Alpine Technical Manual – Page 18 – Correct answer is D

6. There are three planes of movement we use to describe human movement. Which of these is not one of them:
Alpine Technical Manual – Page 64 – Correct answer is D