***Exercises (intermediate/advanced level)***

Exercises help to develop or refine movements; they can be physical task or a mental focus. They break a movement in smaller pieces or add tasks to create new sensations.

**1- Progressions**- Do a move statically, and then in a traverse, half of a turn, whole turn, then link turns. A fan exercise is uphill christies from flat to steeper traverses. Garlands are repeating a move in a traverse. Do in both directions.

**2- Extreme and opposite movements-** Skiers can be very unaware of how they are moving; sometimes they will make the opposite move that you ask them to make. To increase their awareness and break old movement patterns, have them practice the opposite move, or an extreme version of the desired move so they can feel the difference.

**3- Challenge**- Once the moves can be made on gentle slopes; gradually progress to steeper slopes, higher speeds, and different snow conditions. Make small then bigger turns. Each step will challenge the new movement, and old habits will often return.

There are four basic movements: fore/aft, up/down, lateral, and rotary. These moves affect the edging, pressure, and rotary movements of the ski. Exercises can be organized around these movements; or they can be organized in order of the formula or way they are applied: **S**tance, **W**eight transfer, **I**nside lead, **F**lexing ankles, and **T**ipping (S.W.I.F.T.)

**Skiing stance**

The skiing stance changes throughout the turn as skiers move fore and aft, and up and down. Practice the starting stance by; statically comparing standing tall to a skiing stance which often called an athletic stance. Do this by flexing slightly lower over the middle of the ski with the hands out in front so the forearms parallel to the ground and elbows in front of the body. Return to a tall position and then repeat the skiing stance. The ankles, knees, hips, waist, and back all flex smoothly so the chest stays over the center of the skis.

Demonstrate in front of students standing perpendicular to them so they can see the side view. Then watch them from the side and provide feedback. It is common to see people flexing their knees too fast, too much, or too soon relative to their ankles which puts them back on the tails of their skis where most people ski. Some skiers will stand too low and have their feet wider than their hips; others will be tall with their feet together.

**Weight transfer**

1. Do a progression with weight on the downhill ski; static, traverse

2- Thousand Steps

3- Retract the new inside ski at cross over, but keep it on the snow

4- Extend the new outside leg after releasing the edges (early weight transfer)

5- Ski straight down a gentle slope with speed in a small wedge, then add quick weight transfers to automatically create parallel turns.

6- Converging, diverging, parallel step turns

**Inside lead**

Also called: parallel position, strong inside half, counter, active anticipation

1- Do a progression (static, traverse, fan, link turns) advancing the inside half: foot, knee, hip, shoulder hand

2- Shuffle feet back and forth through turns.

3- Do uphill christies or link turns with:

 - Poles horizontal

 - No poles hands as if using poles

 - No poles arms crossed

 - No poles hands on hips

 - No poles hands on thighs

 - No poles arms in front with palms together

 - Grab the outside thigh with the inside hand (face the force)

 - No poles hands together behind the back

 - Poles on shoulders (cross style)

4- Garlands advancing the uphill half (turn finish,) repeat advancing the downhill half (turn start)

5- Compare turns with rotation to creating progressive lead

6- Compare a lot of quick early lead to progressive lead

7- Connect poles around hips

**Flex ankles**

Lack of ankle flex is common and causes additional rotation and banking

1- Statically stand in a skiing stance and flex forward at the ankles. Be sure the skiing stance is maintained. No extra movement at the waist or knees. Check the boots to be sure they are not too stiff. Loosen the power strap and top buckles for the following exercises:

2- In a traverse:

 - Repeatedly flex ankles way fore/aft (weight on downhill ski with inside lead)

 - Flex ankles just a little forward and back (no extra: knee, waist, or back)

 - Flex ankles way forward and back to center (in ski stance, stop when centered)

 - Flex ankles just a little forward and aft

 - Flex ankles forward and back to center

3- Do fan exercises with progressive ankle flexing and lead. This is where skiers add extra moves: watch for rotation, leaning in, backing up especially at the ankles or waist and back, dropping down quickly at the knees or with the ankles and knees. Have them do an excessive amount of the problem move and then compare it to proper amount.

4- Focus on the bottom of feet; try moving weight from the arch to the ball of the feet

5- Raise the toes to help produce the flex

6- Focus on the hips, move from above arches to behind heels, to in front of the balls of the feet

7- When you steepen the traverse and add more speed, watch for unwanted movements back, down, or inside

8. Add a pole touch at the end of the fan exercise, for short radius christies

9- Link the turns with progressive ankle flex. Watch for problems as rhythm triggers old movement patterns

10- Focus on making a move like pushing on a gas pedal to start a turn; then letting off to finish.

11- Compare progressive flexing ankles: to turns with ankle flex that ends quick or starts late

12- Compare turns flexing the ankles versus the just the knees. Flexing just the knees or flexing the knees too soon, too quick, or too much is a common problem.

13- Link the ankle flex with other sensations to reinforce it. Connect the flexing with rounding the upper back

14- Gradually buckle the boots and tighten the power strap to return their normal sensations. Watch for the ankle flex to disappear. They may also have been making their upper buckles and power strap too tight, or the boots are too stiff

15- Challenge the ankle flexing with more speed or steepness

16- Side slip straight down the hill

17- Falling leaf

**Tip (angulation)**

Hip angulation for GS turns: the progression- fan then linked turns

1- Statically stand in a skiing stance with inside lead. Practice flexing the ankles and tipping (flex and tip.) Use a ski pole, wall, or partner for support. Then in motion -

2- Hold poles horizontal; progressively tip the poles and shoulders to the outside

3- Slide downhill hand from the hip to the knee (combine with ankle flex for the “flex and tip” drill.)

4- Put hand on knee and continuously increase pressure on outside knee

5- Put hand on hip and progressively push the hip inside the turn

6- Cross- put poles on shoulders with hands or arms on top of poles; compare to arms by sides

7- Outside hand pushes the inside knee inside the turn

8- Focus on internal tasks such as touch the downhill rib to the hip, raise the inside hip, raise the inside shoulder, drop the downhill shoulder, or tip the head to the outside of the turn(back vs hip)

9- Progressively angulate until the tip of the downhill pole touches the snow and increase pressure on the pole tip until the end of the turn

10- Hold poles like pointers with arms horizontal; progressively angulate until the downhill pole touches the snow. Watch for angulation that is too soon or too quick.

11 -Ski below the student pulling on the end of their poles to help them create angles

12- Extend poles like outriggers to touch the ground and match the slope angle

13- Turn on the outside ski only, then the inside ski only, and then ski on just one ski.

14- Finish edging later( more completed turns) closer to the next crossover point. More vertical movement by progressively flexing the knees is necessary to keep COM moving downhill

Knee angulation task for small turns:

1- Side slip edge sets with pole touches vary the tempo; focus on ankles, knees or toes.

2- Moon turns – lock the downhill edge and ski across the hill.

3- Edge lock – start in a wedge then simultaneously lock one edge then the other. These can start from a wedge turn for wedge locks.

4- Crab walk – step from edge lock to edge lock in a wedge.

5- Hop turns – hop from edge set to edge set with the skis parallel.

6- Weeble wobble – roll from inside to outside edges in a straight run.

7- Hockey stops

8- Partner pull – lead skier pulls the follower using poles; rear skier makes small turns.

9- Railroad track turns.

10- Make hard pole touches.

11- Hold poles below the grips.

12- Tuck turns

13- Edge the inside ski first; compare to edging both simultaneously.

**Rotary movements (turning feet active and passive)**

1**-** Statically lift one ski and turn it

2- Traverse steering both feet uphill

3- Do a fan exercise with steering movements

4- Steer the start of a GS turn (Stivot)

5- Straight run then pivot to side slip, slide straight downhill to show weight is centered

6- Linked pivot slips weight on downhill ski when release, keep facing downhill

7- Hold poles as a window frame vertical in each hand, focus on fixed target below.

8- Linked hockey stops

9- Link steered turns

**Vertical Movements**

1) Static move up and down while centered over the middle of the ski

2) Traverse with moving up and down while staying centered

3) Fan moving down and staying centered

4) Link turns with a lot of up and down staying centered

5) Pivot slips with a lot of down and up, maintain straight path to show centered

5) Leapers and almost leapers

6) Compare extension to retraction turn

7) Retract both legs at the fall line

8) Finish edging well after apex, use progressive knee flex to keep COM moving

Task for small turns-

1- Statically jump with hard verse soft landings.

2- Make small turns with a lot of smooth down and up, and then make a quick down with a hard stopping of the down motion.

3- Hop turns with hard then soft landings.

4- Bounce through the turns.

5- Quick down motion with strong steering and hard edge sets and in mogul drills

**Rhythm and symmetry (holistic tasks when linking turns)**

1- Change the rate or amount of pole swing

2- Make soft pole touches

3- Just the swing with no pole touch

4- Just touch one pole

5- Put both poles in one hand but make normal pole touch motions with the empty hand.

7- Synchronized skiing; then ski turning opposite to the leader

8- Ski from large to small turns and back

9- Ski three small, then three medium turns, keep repeating the pattern.