



Welcome to the
Mountaineers
Tacoma Branch

Cross Country Ski Class



Agenda

- Course Schedule & Graduation Requirements
- Introductions: Students and Instructors
- Skis, Bindings, Boots & Poles
- Clothing and Equipment
- 10 Essentials
- Cold Weather Hazards
- Field Trip Details
- Winter Driving



Instructors

Course Leader: Richard Babunovic 425-890-1372

Instructors: Marilyn Thompson

Don Thompson

Jody Delbridge

Mark Kerr

Lisa Elliott

Rebecca Allen

Vera Ellich

Kathryn Krueger

Taylor Courier



Introductions

- Name
- Skiing Experience
- Reason for Taking This Class
- Something Fun or Unique About You



Course Schedule

- Lecture 1 Thursday, Jan. 8
- Field Trip 1 Saturday, Jan. 17
- Lecture 2 (Zoom) Thursday, Jan. 22
- Field Trip 2 Saturday, Jan. 31
- Field Trip 3 Saturday, Feb. 7

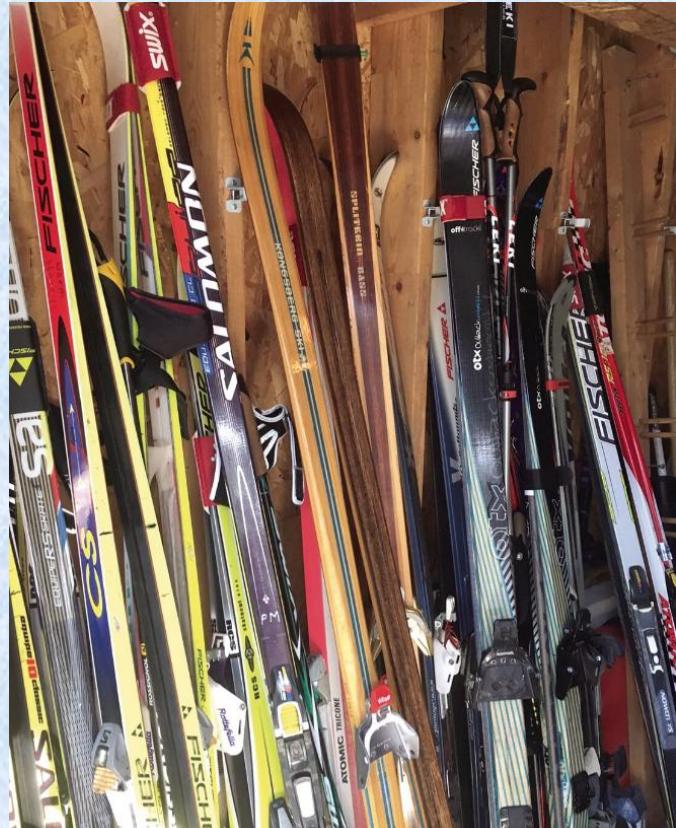
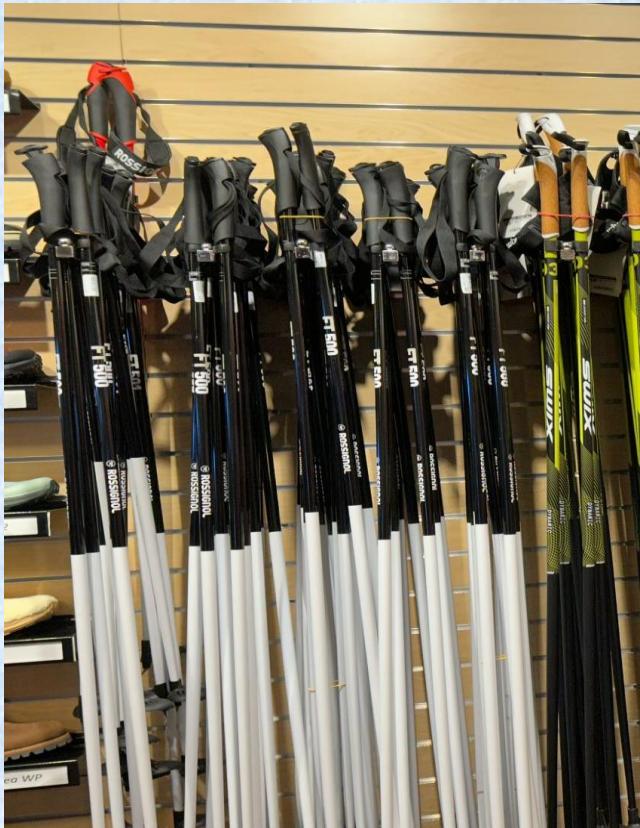


Graduation Requirements

- Attend Lectures and 3 Field Trips
- One Mountaineer Ski Trip
- Low Impact Recreation Course



Equipment



Skis

SKATE SKIS: wide groomed skate track



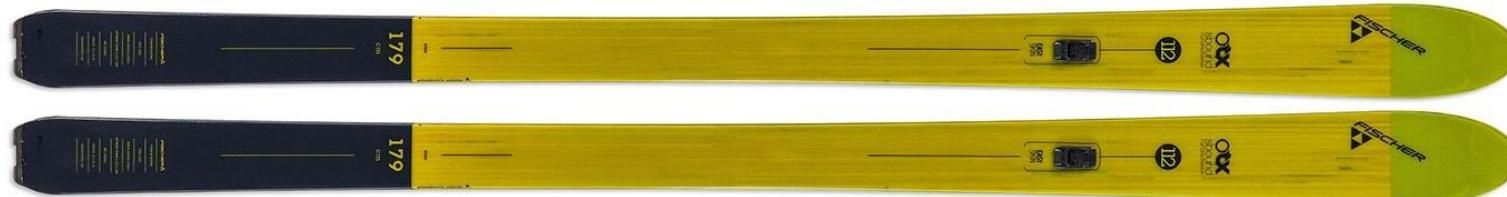
CLASSIC SKIS: classic tracks



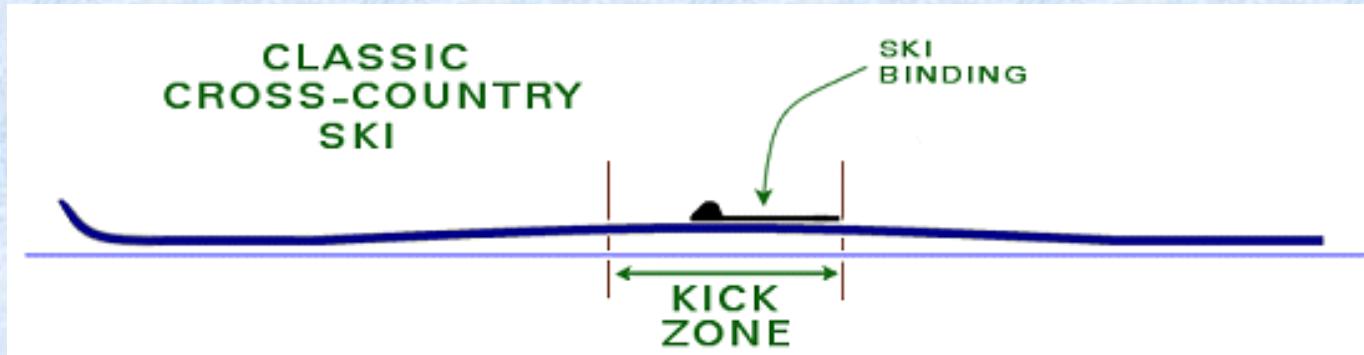
NORDIC TOURING SKIS:



BACKCOUNTRY SKIS: off groomed terrain, deep snow



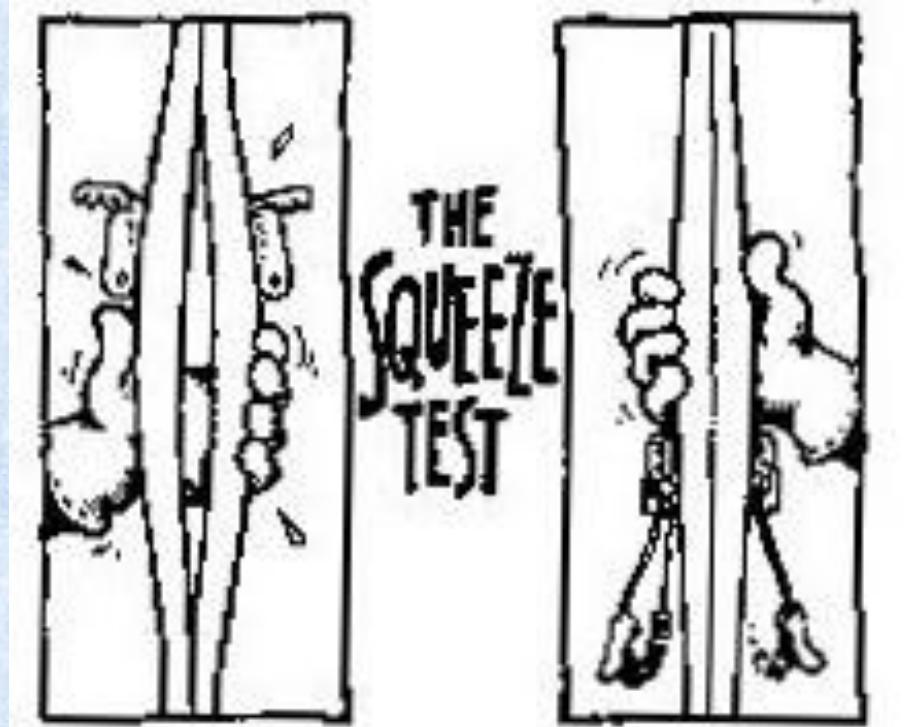
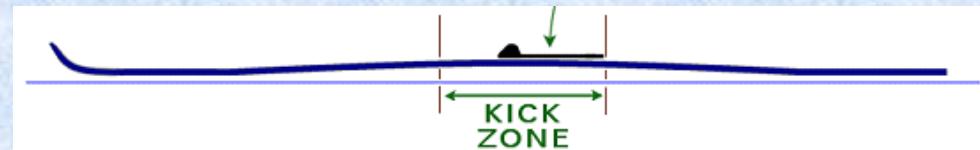
Ski Camber



- The Resistance To Flattening the Kick Zone
- Ski Selection Based on Your Weight (*With Your Pack On*)
- Kick Zone Needs To Be On The Snow With All of Your Weight On One Ski

Ski Camber

- Medium
- Stiff
- Xtra Stiff



More

Less

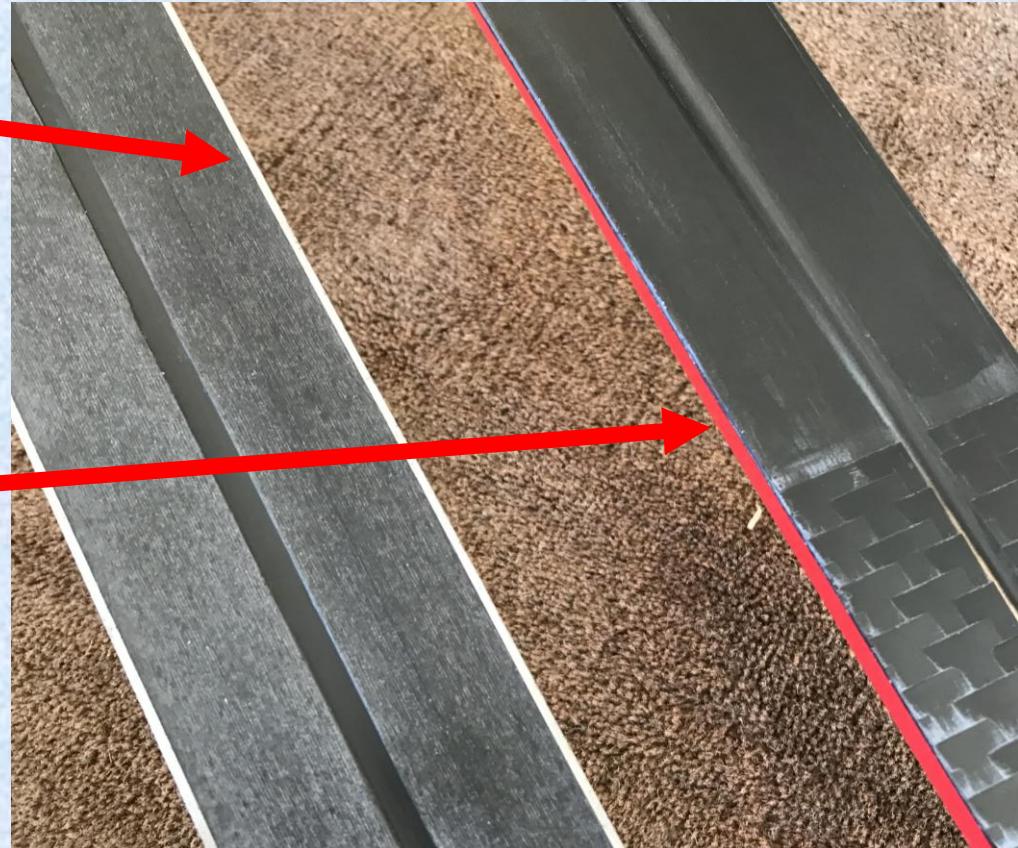
Skis

Metal Edge

- Ungroomed
- Icy Conditions
- Heavier

Non-Metal Edge

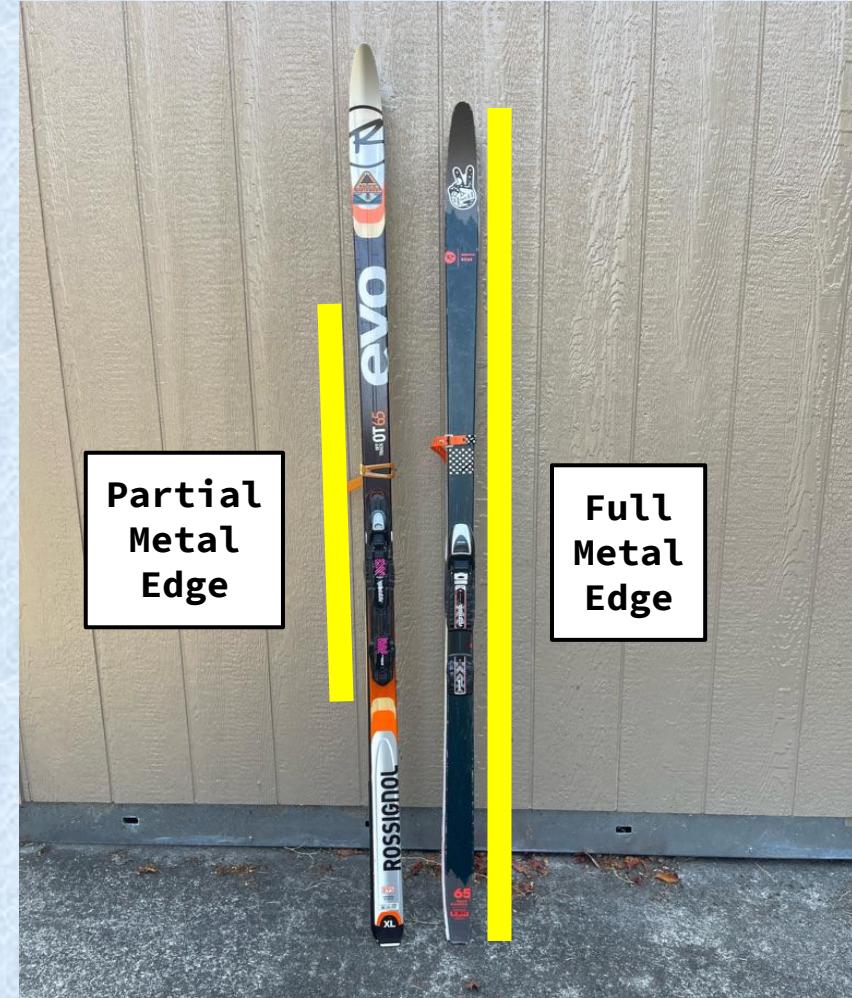
- Lighter
- Less Control



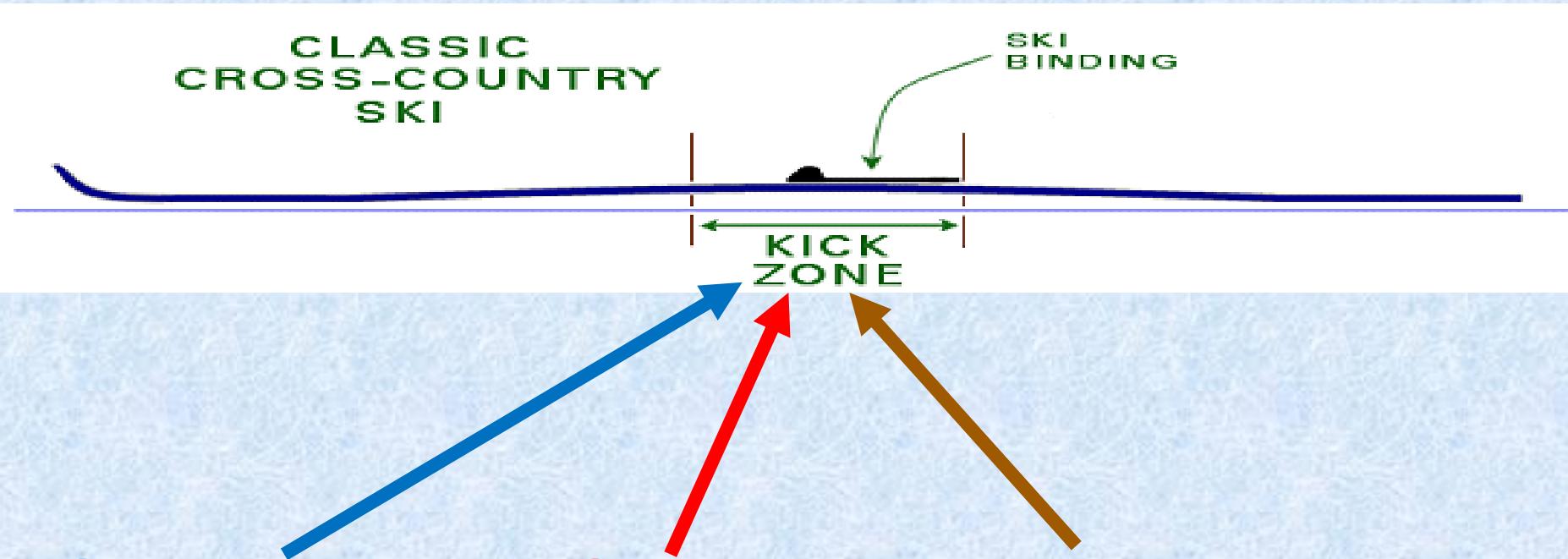
Metal Edge Skis

More Control In

- Roughly Groomed Trails
- Logging Roads
- Icy Conditions
- Deeper snow



Skis

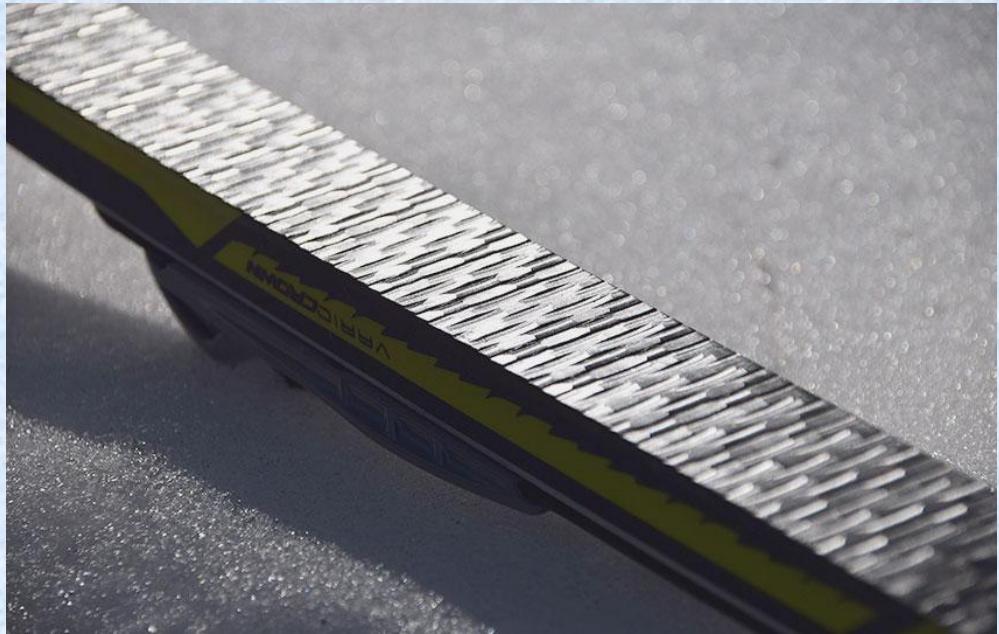


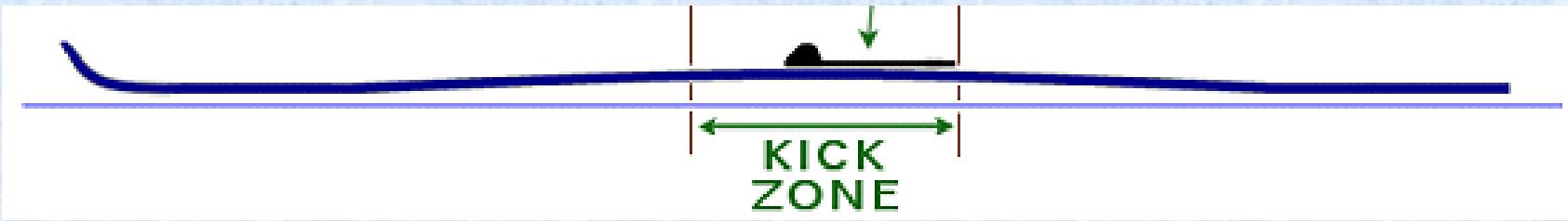
Scales or Skins or Kick Wax



Scales

- Least Maintenance
- Less Glide

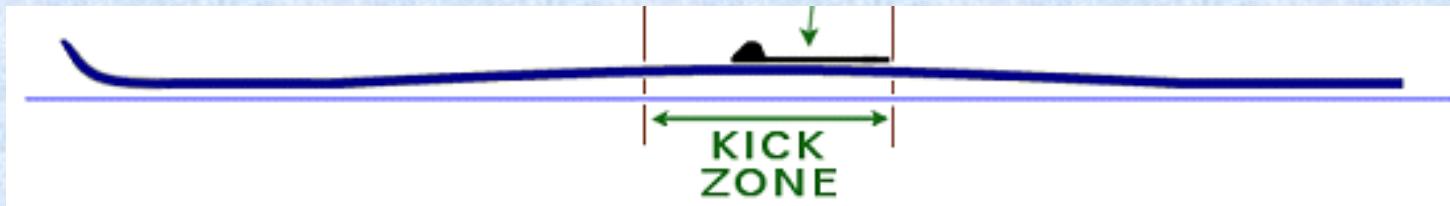




Skins

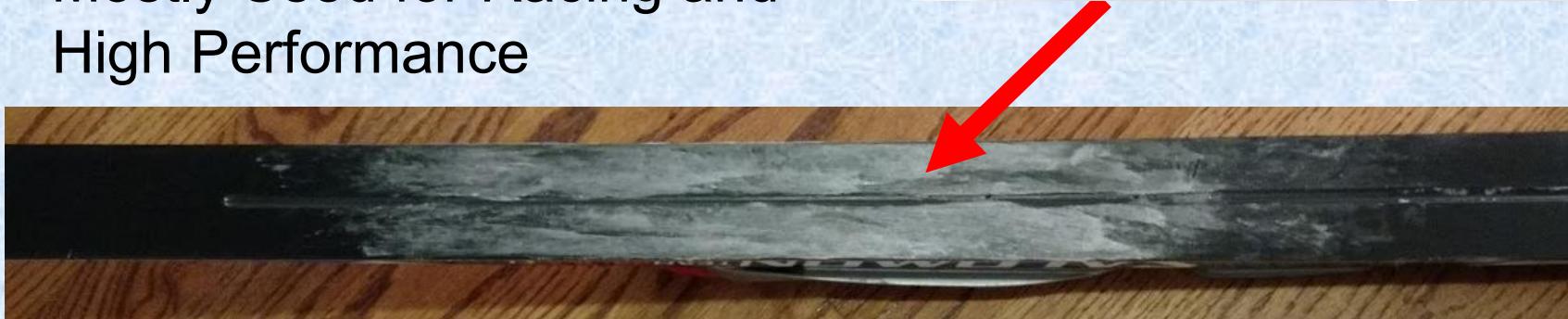
- More Expensive
- More Glide
- Need to Replace Periodically
- Poor In Icy Conditions





Kick (Grip) Wax

- Most Labor Intensive
- Wax Color Depends on Snow Temperature
- Mostly Used for Racing and High Performance



Grip Wax or Kick Wax



Glide Wax

- Apply Each Time You Ski
- Tips, Tails and Scales



Prevent Glop

- Glide Wax



- Skin Care



Hot Waxing



Ski Length is Based On

- Ski
 - Make
 - Model
- Your Weight

Fischer Adventure 62 Crown Xtralite

179 CM: 143-196 pounds

189 CM: 175-231 pounds

199 CM: greater than 220 pounds

Fisher Twin Skin Superlite EF

179 CM: 110-130 pounds

199 CM: 164-198 pounds

204 CM: 186-198 and over pounds

Rossignol Delta Sport R-Skin

184 CM: 99-132 pounds

189 CM: 110-143 pounds

196 CM: 132-165 pounds

201 CM: 143-176 pounds

206 CM: 176-209 pounds

Boots



Boots

- Classic
- BC Touring
- Sturdier
- Skate
- Lighter



Classic XC Ski Boot

- Try on Several Brands and Sizes
- Now Lined So Only Need Thin to Medium Weight Socks



Backcountry Touring Boots

- More Ankle Support
- Stiffer To Help Turning
- Thicker For More Warmth



Boots



NN (3 Pin)



NNN



NNN-BC



SNS Profil



SNS Pilot

Bindings

75MM



3-PIN



NNN



NNN

NNN BC



SNS



SNS PROFIL



SNS PILOT

NIS

PROLINK

NNN

TURNAMIC



Poles

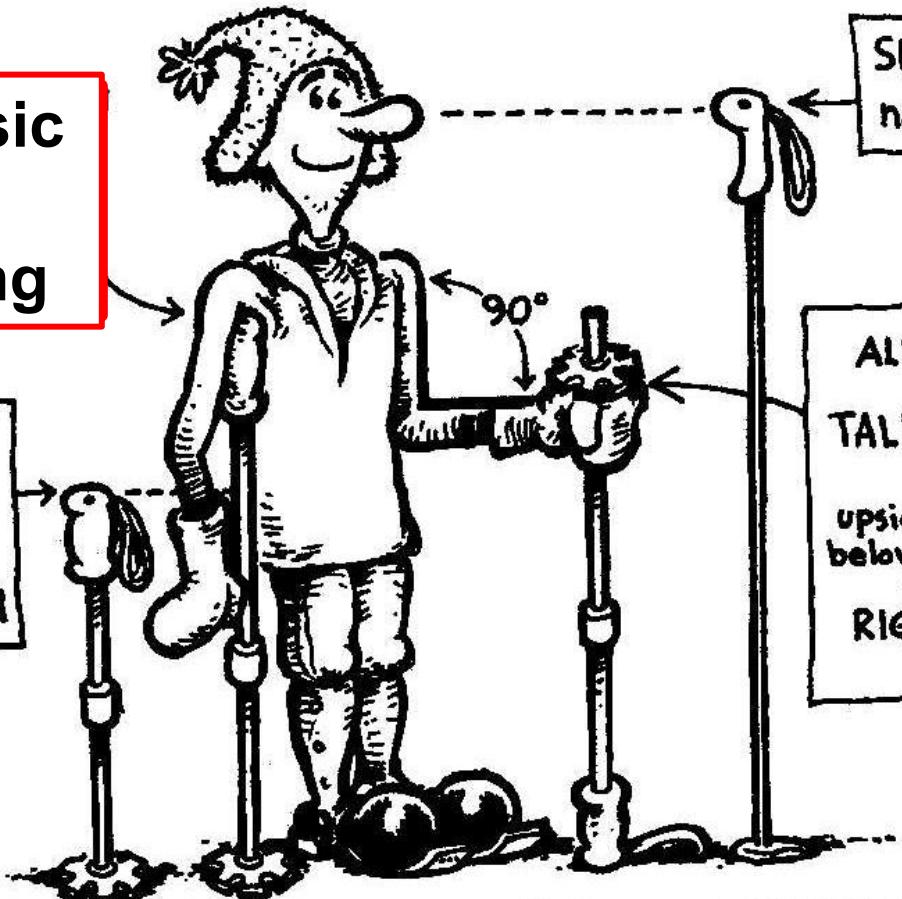
Length

- Track skiing ~30cm Shorter Than Skier Height (typically in 5cm increments)
- Ungroomed Adjustable w/ Large Basket

Body length without boots (Ft/ inches)	Pole length (cm) Classic
5' 0.00"	122,50
5' 1.02"	125,00
5' 2.00"	127,50
5' 2.99"	130,00
5' 3.97"	132,50
5' 4.96"	135,00
5' 5.94"	137,50
5' 6.92"	140,00
5' 7.91"	142,50
5' 8.89"	145,00
5' 9.88"	147,50
5' 10.86"	150,00
5' 11.85"	152,50
6' 0.83"	155,00
6' 1.81"	157,50
6' 2.80"	160,00
6' 3.78"	162,50
6' 4.77"	165,00
6' 5.75"	167,50
6' 6.74"	170,00

Classic XC Skiing

(Really!)
LOW STANCE
TELE-TURN
at
BELLY BUTTON



SKATING
at
nose height

ALPINE TURNS
or
TALL TELE-STANCE
hold
upside down pole
below the basket
with a
RIGHT ANGLE
ELBOW

The GENERAL RULES of POLE HEIGHTS

Pole Strap Styles



Where to Rent or Buy

- **Seattle REI**
- **Ascent Outdoors - Ballard**
- **Pro Ski and Mountain Service - North Bend**
- **Enumclaw Ski & Mountain Sports**
- **White Pass Nordic Center**
- **Whittaker Mountaineering Store**
- **Mountain To Sound Outfitters**
- **Seattle Ski and Snow Board**
- **Seattle Ski and Snowboard (rentals)**
- **Stevens Pass Nordic Center (rentals)**
- **Summit at Snoqualmie Nordic Center (rentals)**
- **Online: Winthrop Mtn. Sports, Cascade Outdoor Store, Webcyclery & Webskis, Backcountry.com**

Clothing & Other Equipment



Cold Weather Hazards



Hypothermia - Symptoms

- 1st Stage: Body Temperature Below 95°F (35°C)
 - Shivering
 - Increased: Heart Rate, Breathing Rate and Blood Pressure
- 2nd Stage: As the Temperature Drops Further
 - Decreased: Pulse, Breathing Rate and Blood Pressure
 - May Experience Stumbles, Mumbles, and Fumbles
- 3rd Stage: Core Temperatures Less Than 89.9°F (32.2°C)
 - Shivering Stops and Oxygen Consumption Begins to Drop
 - The Victim May Be in a Stupor
 - The Heart Rhythm May Become Irregular

Hypothermia - Prevention

- Replace What You Lose
 - Drink Plenty of Liquids (Urine Should be Clear)
 - Eat Often (Fuel for Your Furnace)
- Dress for the Weather
 - Layers of Loose Clothing
 - Wear a Hat or Headband That Fully Covers Your Ears
 - Wear Mittens Rather Than Gloves
 - Wear Socks and Sock Liners That Fit Well

Dehydration - Symptoms

- Can Accelerate Hypothermia, Frostbite and Fatigue
- Mild to Moderate Dehydration
 - Dry, Sticky Mouth
 - Sleepiness or Tiredness
 - Dry Skin
 - Headache
- Severe Dehydration
 - Extreme Thirst
 - Irritability and Confusion
 - Sunken Eyes
 - Dry Skin That Doesn't Bounce Back When You Pinch It

Dehydration - Prevention

- Drink Before You Start and Replace What You Lose Through
 - Exhalation
 - Perspiration
 - Urination
- Match Your Drink to the Duration of Your Activity
 - Water Is Ok for Exercising For Up To 1 Hour
 - Add Electrolytes and Carbohydrates After an Hour
- Hydrate With Room-Temperature Beverages
 - Cold Liquids Are Absorbed Quicker
 - Warm Drinks Are Better
 - When You're Exercising In Cold Temperatures
 - At Keeping Your Internal Temperature Optimal

Frostbite - Symptoms

Frost Nip

- Irritates the Skin, But No Permanent Damage
- Causes Redness, Prickling and a Cold Feeling Followed by Numbness
- Can Be Treated With First-aid

Superficial Frostbite

- If Your Skin Feels Warm, a Sign of Serious Skin Involvement
- A Fluid-filled Blister May Appear 24-36 Hours After Rewarming the Skin

Deep Frostbite

- You May Experience Numbness
- Joints or Muscles May No Longer Work
- Large Blisters Form 24 - 48 Hours After Rewarming
- Afterward, the Area Turns Black and Hard as the Tissue Dies

Frostbite - Prevention

- Dress in Several Layers of Loose, Warm Clothing
- Wear a Hat or Headband That Fully Covers Your Ears
- Wear Mittens Instead of Gloves
- Wear Socks and Sock Liners That Fit Well
- Make Sure Snow Cannot Get Inside Your Boots or Clothing
- Stay Hydrated and Eat Often



NWS Windchill Chart



Temperature (°F)

Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5 mph	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10 mph	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15 mph	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20 mph	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25 mph	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30 mph	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35 mph	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40 mph	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45 mph	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50 mph	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55 mph	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60 mph	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times



30 minutes



10 minutes



5 minutes

Raynaud's Syndrome

- A Condition Where Your Body Excessively Restricts Blood Flow to the Hands and Feet In Response to Cold
- You Might Have It If Your Fingers and Toes Are Constantly Cold or Prone to Frostbite
- It Can Sometimes be Very Disabling
- If You Think You Might Have This, Get Checked Out by Your Doctor
- Certain Over-the-counter Cold Medicines and Beta Blockers (to Treat High Blood Pressure and Heart Disease) Can Aggravate This
- Your Doctor May Be Able to Prescribe Something to Help

Field Trips 1 & 2

- Jan. 17 and 31, Starting at 9:00 a.m.
- Crystal Springs Snow Park Exit 62 on I-90 East of the Pass
- Snow Park Pass Required - \$120 for season
- Car Pool from North Bend Park and Ride
 - Meet at 8:00 a.m.
 - Corner of E North Bend Way and E Park St
- Look for Trip Check List in Class Info Document

What to Bring on Field Trips

Backpack & Rain Cover



Extra Hat & Gloves



Sit Pad



Warm Coat & Rain Jacket



Skis, Boots & Poles



Lunch



High Energy Snacks



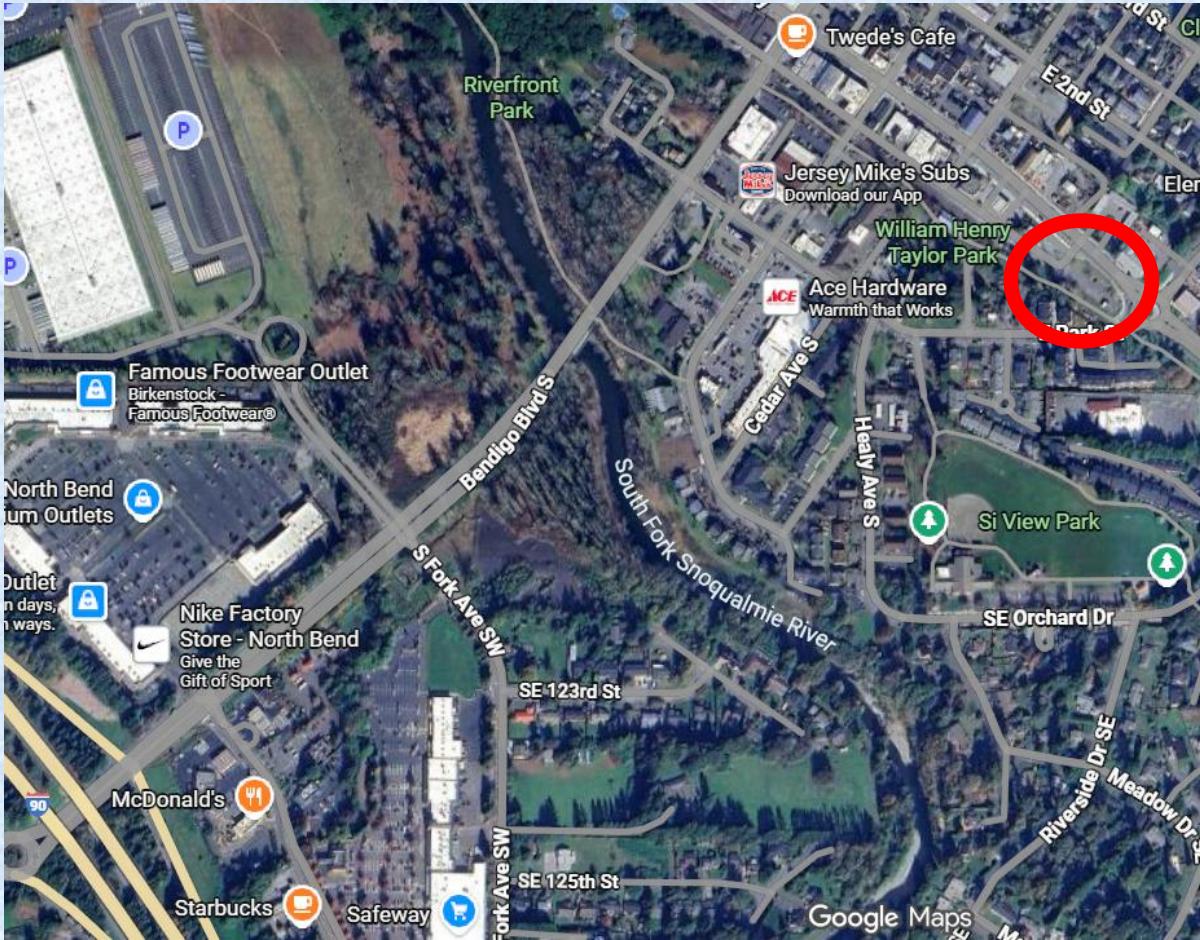
Water, Electrolyte, Hot Drink (opt.)



Sun Screen & Sun Glasses

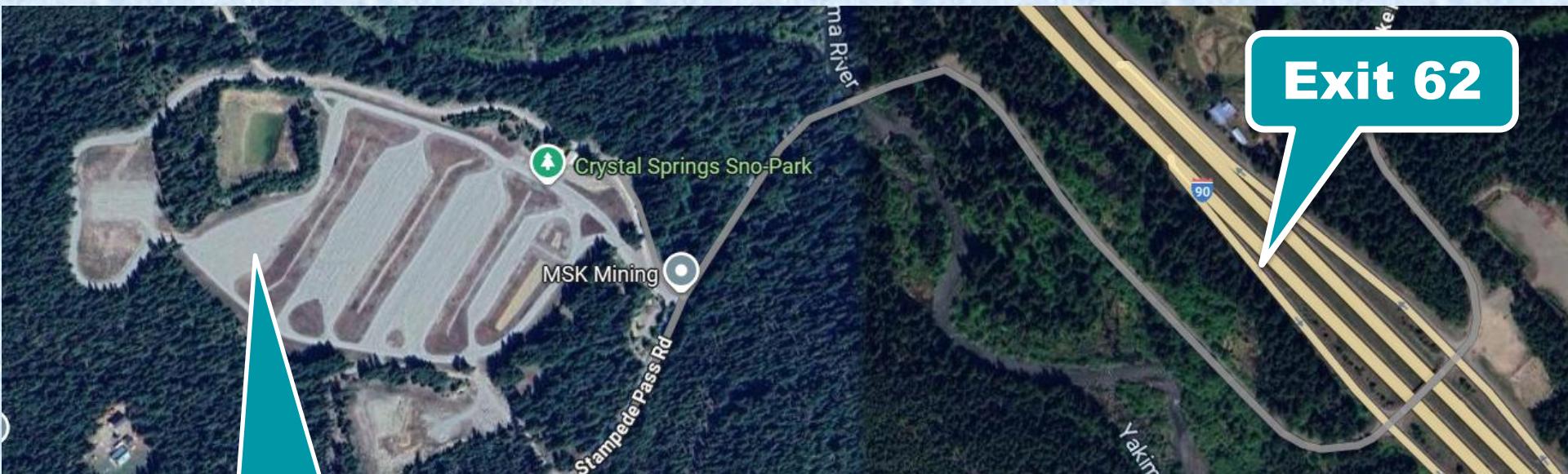


North Bend Park and Ride



Field Trips 1 & 2

Crystal Springs Sno-Park



**Meeting
Place**

Exit 62

Field Trip 3

- Feb. 7 White Pass Nordic Center
- 2.5 Hour Drive from Tacoma
- Car Pools Will Be Arranged Beforehand
- Consider Staying in Packwood the Night Before



White Pass Nordic Center

