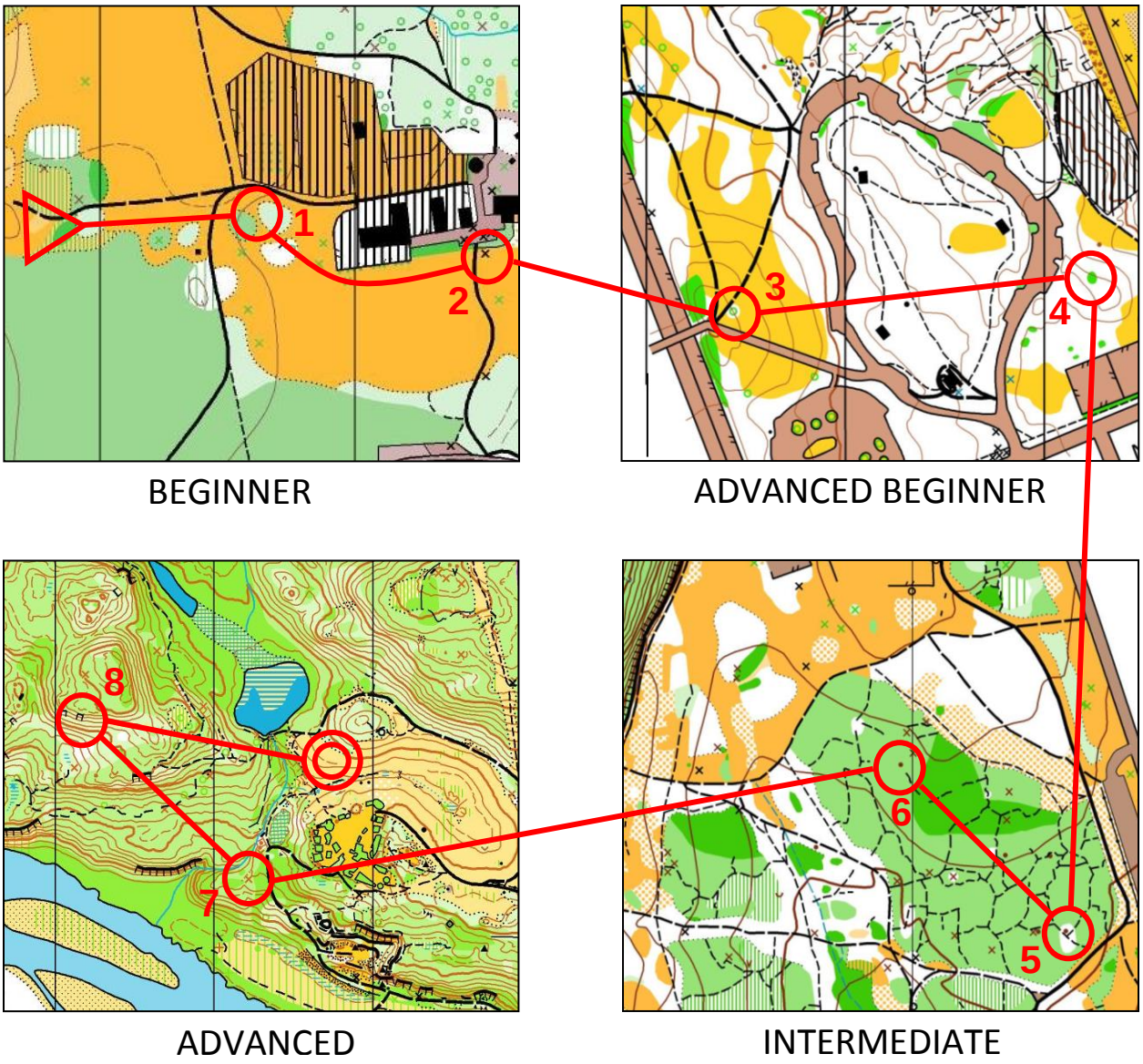


BEGINNER

ADVANCED BEGINNER

ADVANCED

INTERMEDIATE

Orienteering Coach's Handbook:

A Guide to Growing Successful Navigators

Washington Interscholastic Orienteering League

On the surface, orienteering is simple:

Use a detailed topographic map to find this  in a park.

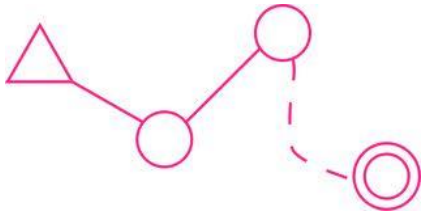
Repeat until you've found all of them on your course, in order.

It doesn't matter whether you're hiking or running, or even what age you are. You're out there chasing goals, discovering a lot about the park and outdoor navigation, and figuring out how to rely on yourself to make better decisions in less time. These skills are valuable for life.

This Orienteering Coach's Handbook helps you share that discovery and growth process with others, along with the joy of this amazing adventure sport.

See you in the park!

Bob Forgrave
President, Cascade Orienteering Club



Contents

2014, February 10 by Bob Forgrave. With special thanks for review and contributions from Eileen Breseman, Michael Schuh, Jim Siscel, Richard Staudt, Rick Breseman, Alex Frank, and Kathy Forgrave.

Reprinted 2013, December 10.

Why Orienteer?

"Why are we doing this?" This often irreverent question from newcomers is perhaps the most important question a coach can answer. And surprisingly, the best answers for those students are less about navigation and more about what they want out of life. What does success look like to your students?

1. **Exploring is fun**. Our sport immerses us in the best parks and forests around us. And because we're not following each other, every one of us gets to be an explorer. If we manage our sport correctly, leaving each meet location cleaner than before we arrived, we are even allowed the privilege of off-trail freedom in parks that agree to this. Few people can leave this experience and not be impressed at the beauty, variety, and value of our natural areas and the need to protect them for others to explore too.

2. **Orienteers are great company**. Orienteering is one of the few sports where elite participants and novices participate in the same events, and it's not unusual to see up to three generations of a family participating together. Because the main challenge is the course, not each other, it's also not uncommon to see competitors sharing observations and techniques with one another after the event to make each other stronger. As a result, orienteers build community quickly, often across international borders. Even the map and course symbols are international standards, so you can orienteer successfully in places where you don't even speak the language!

3. **Orienteering builds great leaders**. Deep down, most people would like to have an impact on the things they care about and see their ideas embraced by other people. But before other people have confidence in you, you've got to have confidence in yourself. That confidence comes from setting and achieving increasingly important goals, and learning how much you can rely on your own planning, judgment, and ability to follow-through, even when things get tough.

   Orienteering will always be challenging—the type of challenge just changes over time. First, it's about struggling to read a map and not get lost. Then it's about trying to achieve consistency in completing a course cleanly, shaving off precious minutes and seconds by fine-tuning techniques. Go to an unfamiliar terrain, and you get to learn all over again. Through it all, you practice the skills of focusing on the most important information, making split-second decisions, and then following through to achieve a goal. These skills are valuable everywhere.

How the Youth Orienteering League Works.

The concept

Students are each given a map with a marked course. Using their own skills and a compass, if needed, they navigate from one control point to another. At the finish, they are given a printout that shows how long it took them to find each control marker.

The individual scores for the fastest three students from a school who successfully complete a course are added together for a team score. Over the season, the courses get more challenging as students master navigational skills.

Participation levels

Washington Interscholastic Orienteering League (WIOL) meets have four levels of competition. At each level, there is also a non-competitive recreational course. Competition is solo and counts for league points and awards; recreational courses can be done solo or with others:

1. **Course #1. WIOL Elementary course**, for students up through 6th grade. Also Recreational Beginner course.
2. **Course #2. Middle School course**, for students in 6th through 9th grades. Also Recreational Advanced Beginner course.
3. **Courses #3 and 4. Junior Varsity (JV) course**. Also Recreational Intermediate course.
4. **Courses #5 and 6. Varsity High School course**. Also Recreational Short Advanced course.

Schedule

A couple of recreational meets in September and October are ideal training experiences before the WIOL season. Students can walk or run courses together in a real meet, focusing on learning navigation instead of competitive performance. This takes a lot of the pressure off them later.

The WIOL Season runs from early November to mid-February. The first half of the competitive season generally consists of parks that require courses to be set on-trail. These four meets provide the foundation for newcomers to develop basic skills and returning orienteers to refresh their skills before they head off-trail. The last four meets include increasing amounts of advanced navigation within each participation level. By the championship, students are well-prepared for a positive national meet experience (U.S. Interscholastics Orienteering Championships), if they choose to go.

Coach Responsibilities

For a positive youth experience, make sure that your students have the basic skills to complete courses successfully and solo at their participation level. It is highly useful to have an experienced orienteer help students with course feedback over the season. Just ask the WIOL Director (wiol@cascadeoc.org) to match your school with a volunteer Orienteering Mentor. Finally, when done, make sure VERY student has all downloaded at the Finish—ask to see the results printout!—so the meet staff doesn't spend hours after the meet, searching the woods for someone lost who isn't even there.

Four Basic Concepts Every Orienteer Should Know

You wouldn't send a new driver out on the road solo without explaining the steering wheel and the brake! And you shouldn't send a new orienteer out on a solo course without a basic understanding of these four concepts. *NOTE: For ease of coaching, the rest of this guide is written directly to students.*

1. Orienting the Map.

This concept is so important, the sport is named after it. Look around you for features so significant they are likely to be on a map (trails, buildings, etc.). You can also use North on your compass.

Then turn your map so what you see on the map matches what you see on the ground. For example, a trail that veers off to the left on the ground should veer off to the left on your map.

It's like having a bird's-eye view of the land you're walking on. And as you turn, your view also turns, so you need to move around a map that is always lined up North-South. This means that, if you're walking south, your map will be upside-down to you to keep that bird's-eye view accurate.

Found it! Before punching in at a control, ALWAYS verify the control number. It takes just a second, but can avoid a course-disqualifying mispunch.

2. Thumbing.

Thumbing can keep you from getting lost. And if you get lost anyway, it will be in a much smaller area, so you don't spend as much time lost! To begin thumbing, fold your map so that only three controls are visible—your last one, your next one, and the one after that. Now, as you pass features that you are absolutely positive about, follow your progress by pinching them under your thumb. Look for expected features along the way that you can "collect" on the way to your next control. It's like a scavenger hunt!

Joining orienteering from cross country? Thumbing and speed control are essential, so you don't blow past critical navigation features at high speed.

In practice, this is one of the most powerful techniques in orienteering. It keeps you focused on the detailed map features around you--just look at what's near your thumb. And when you get lost, you already know that you're somewhere near your thumb, so you're lost on a smaller area of the map. Translation: more time punching controls and less time walking around bewildered.

3. Controlling Your Speed.

When orienteering, think of your speed in terms of a stoplight. "Green light" is for when you know exactly where you are and all the features along your route are completely expected—run freely! "Yellow light" means you're pretty sure where you are,

but there's something about the terrain that can get you lost if you're not careful. Or maybe you're just approaching a control and need more accuracy; it's a good time to slow down and jog or walk until you're certain again. "Red light" means there's something unexpected about the features around you, so STOP and verify your location—traveling when you're lost just gets you lost in a wider area!

4. Relocation.

Lost? STOP! Think. Look around you and consciously tell yourself what distinctive features you see. Orient the map (Hint: This may be a good time to verify North on your compass again). Find your last known location (Hint #2: If you've been thumbing, it's probably near your thumb.) Starting with your tentative location, match terrain features on the map with what you see around you. As a last resort, you can also retrace your steps to your last known location.

Building on the Basics: The Big Picture

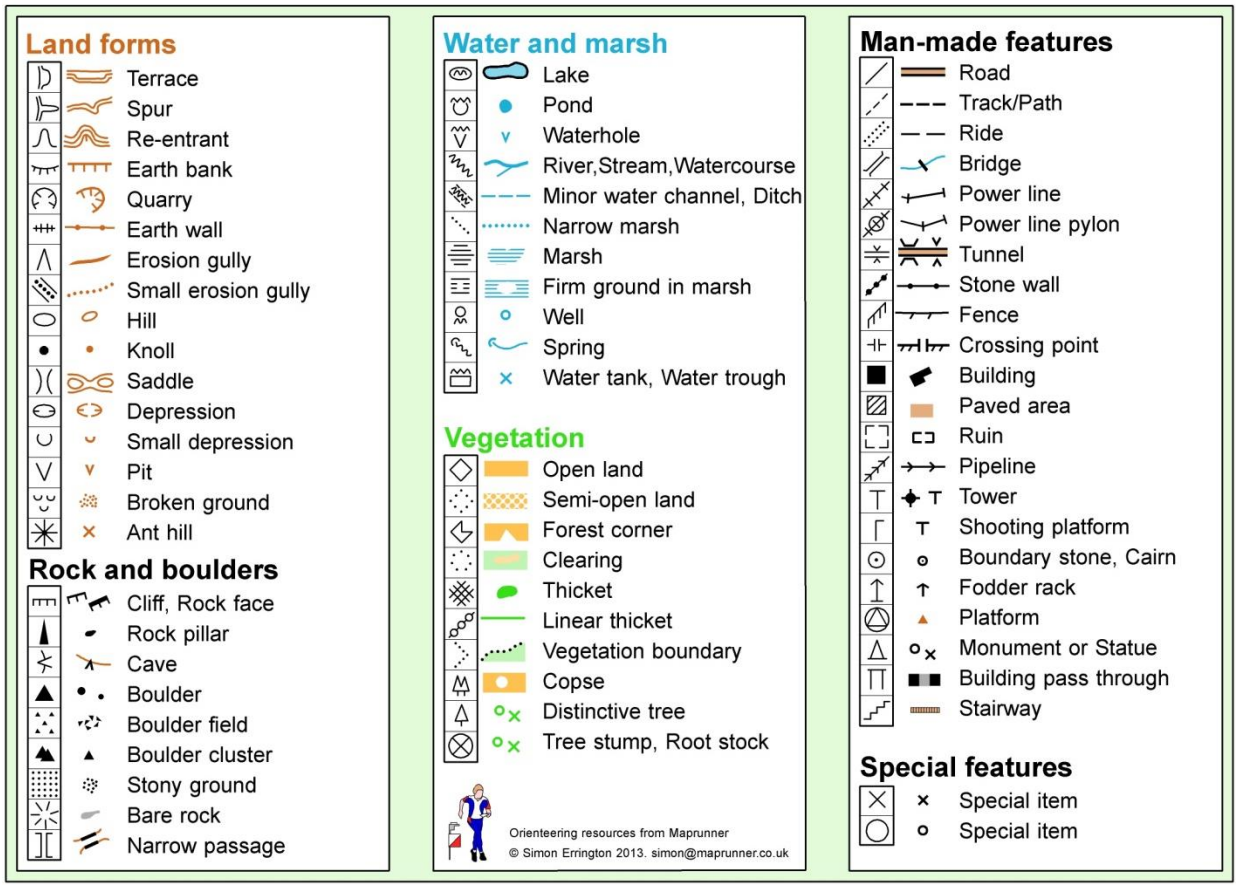
Once you have mastered the four concepts above, these additional skills and techniques will be needed for a positive experience as you progress through the levels of league participation.

	Elementary (Beginner) **Page 7**	**Middle School (Advanced Beginner)** **Page 8**	**High School JV (Intermediate)** **Page 10**	**High School Varsity (Short Advanced)** **Page 12**
Basic Concepts	**Orienting the Map - Thumbing - Controlling Your Speed - Relocation**			
Map-Reading	• Area features (shapes) • Handrails: trails, fences, roads, streams • Point & line features • Associate terrain feature with the map symbol • Catching feature	• Area features (color detail) • Control symbols • Contour awareness: going up or down • Collecting features • Handrails with use of attack point	• Contour basics for navigating • Use of vegetation edges • Best route choice	• Detailed contour navigation • Visualize & planning ahead
Compass Reading	• Initial orientation • Use map features to stay oriented	• Orient the map by compass • Choose the correct trail • Know compass direction to leave control	• Use in conjunction with line of travel • Aiming off	• Running on a bearing
Physical Skills		• Jogging	• Pacing • Running	• Physical endurance & speed

For a description of each skill, see the referenced page.

Know What You're Looking For

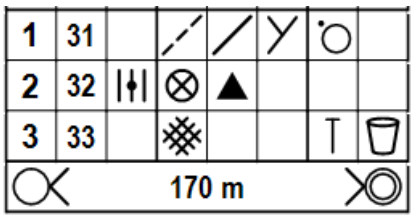
Every course has a control description, with the destination features listed in international shorthand such as a thicket or trail . Here are symbols you might see in the control description (in the black boxes), how they actually look on a topographic map, and what they mean:



As you orienteer, learn these symbols. They are the foundation. You can even quiz yourself and your team on them at http://www.fortnet.org/icd/.

From there, the control descriptions provide even more detail for those who are paying attention. If there are several of a feature at that location, the description will tell you which one. It will use obvious locational symbols, such as north , southeast corner , on top of , between , and at the end of . It might even give appearance info such as shallow or deep, deciduous or broad leaved. And finally, the description will tell you how far from the last control to the finish.

Here is what some control descriptions on a very short course might look like:



First, Control # 31 at the Y intersection of a trail and road. Northwest side.

Second, Control #32 between a rootstock (or stump) and a boulder.

Third, visit Control #33 at the north end of a thicket. It's also a water stop.

After the last control, go 170 meters to the finish.

Critical Skills for Elementary (Beginner) Orienteers

As a beginner, you will be completing your course on your own, but you can have an adult shadow you for safety. Your course will take you along paths and other clearly noticeable line features on the map (tree lines, streams, etc.) called handrails. The main focus for you is to make sure you always know where you are and can turn at the right times. Speed can come later. You will need these skills:

Rough Map Reading

The map legend has a lot of symbols in it that you might need. Learn what they are before you need them! At the simplest level, **area features** are those most noticeable on a map—parking lots, lakes, fields, and big buildings. **Line features** include roads, trails, fences, streams, lake edge, and a rock wall. **Point features** include boulders, buildings, single trees, water fountains, rootstocks, manmade objects. Find some of those symbols on the map and discuss how they are useful in knowing your location. Take a walk with your coach and point out some features as represented on the map.

Shadowing an Elementary course orienteer is both a safety technique and a way to build early confidence.

Using a linear feature as described above as a guiding **handrail**, follow along the edge or line to encounter the control marker. Continue to use your thumb to keep track of your route. It is a good idea to look beyond the control on the map for something distinctive to know when you have gone too far—this is a **catching feature**. This can be a trail intersection, crossing over a road– any noticeable feature beyond your marker that tells you that you have gone too far and need to turn back.

Rough Compass Reading

Every orienteering map has a triangle at the start and a double circle at the finish. At the start triangle, place the compass on the map and turn the map so the North lines are parallel to the North needle. Match the map features with your surroundings and continue to use the major map features to stay oriented using your thumb to show your progression as you move along.

Practice holding the map out in front of you, oriented to the direction of intended travel. Look at the terrain to see the direction you've planned. Look back at the map to see some features that you can use to guide you there, or pass along the way to complete your plan. When the trail turns to the left or right, remember to turn your map as needed, so that it remains oriented.

Booster Activities (easy exercises to help you get better)

- Get a map of your city, then follow along the map with your thumb when you're a passenger in a car or bus. Remember to orient the map as you go!
- Visit a permanent orienteering course and do it together as a family day in the park. (See the Resources page of this guide.)

Critical Skills for Middle School (Advanced Beginner) Orienteers

Middle school is a great time to start orienteering. It's highly social, and an easy level to pick up quickly. Middle school courses rely on "handrail" features for navigation, but take you on and off of them throughout the course. With route choice comes the opportunity for route strategy that takes you beyond the four basic skills that every orienteer should know, and those learned at the beginner level.

An excellent way to plan a route when you have options is to mentally start at the next control and plan backwards to where you are. What is the best direction to approach that control from? (See Attackpoint below). Then you can choose your best route and decide what techniques you will use to follow it. Just remember the acronym CART—Control, Attackpoint, Route, Technique.

Precision Map Reading

Control Symbols. On Course 2, you won't have control descriptions written out anymore. You'll be using the international symbols. Do you know what they represent? The Resources page of this guide has a link to a site where you can test yourself on these, so they're familiar at every meet.

Teams start to appear in Middle School. An important part of any orienteering team at any level is the chance to just hang out together and enjoy being in the park with peers who enjoy the outdoors.

Now is a good time to get more familiar with **area features** that show vegetation, such as open woods and various levels of undergrowth in the terrain. What do these look and feel like? As a Middle School orienteer, you will need to experience each. See what if feels like to go from one type of green to another.

Also, pay attention to borders, which are a useful type of line feature. Distinctive vegetation boundary markings on the map show a definite shift from type of area to the other, as compared with subtle changes between vegetation mapping with no boundary markings.

For now, learn to use **contour lines** to tell if you are heading uphill or downhill as you cross them. Pay attention to when the contour lines show specific features, such as a depression, knoll, or earth bank.

Use your thumb to follow along on your path. You also need to anticipate and then recognize features along the way (**collecting features**) to make your way to your next control. Another useful new skill is to identify a noticeable feature, preferably on the near side of a control, called an **attackpoint**. This should be easy to identify, both on the map and in the terrain, so you approach the control from a well-marked location.

Rough Compass Reading

On Course 2, you will frequently have to make a choice about which trail to take. Sometimes, the compass can help you verify quickly whether trail you've chosen is the one you think it is. Stay oriented with the compass as you travel:

1. Fold the map a thumb's length out from your line of travel and place the compass alongside the purple course line on the map that runs form one control to another. Keep both compass and map together in the left hand (or right hand if you're left-handed).
2. Turn your body until the North lines on the map match the needed (Hint: to avoid a 180-degree error, make sure you're using the North end of the needle, usually red!). You are now oriented without any features.
3. Does the trail intersection on the ground match up with the map? You are now ready to identify the correct trail.

Knowing prior to punching in which compass direction you will **exit the control** will save time and keep you moving so that you don't give the control location away to the next competitor. Practice "flowing through the control" enroute to the next without stopping.

Booster Activities (easy exercises to help you get better)

- You no longer have word descriptions of the control features, so get a list of the international symbols for control descriptions and check off the ones you see in meets. Eventually, you'll know all of them. There's even an online quiz in the Resources section at the end of this handbook.
- Collect every orienteering map you can find, and organize them in a book or folder. Then sometimes, especially before a meet, take out your collection and take a mental walk through the park from one place to another. What are you expecting to see? On which side? Are you going uphill or down?
- When looking at a map in your collection, practice making the correct choice at an intersection using only a compass. Place your compass on your map along the trail you want to take, then turn your body to match the magnetic north lines on the map to the compass needle. You're now facing the right direction.

Reviewing your course immediately afterwards with a more experienced orienteer is one of the quickest ways to improve your skills.

Critical Skills for High School Junior Varsity (Intermediate) Orienteers

Many orienteers, particularly those in JROTC or on cross-country teams, get their first introduction to orienteering in high school. And fast runners who are comfortable with a street map can often do quite well early in the season. But once the courses start to go off-trail and the skills from earlier in this handbook become essential, junior varsity (JV) can be a time of intense learning in a short time.

An easy and effective way to get that learning is to review the beginner and advanced beginner skills in this handbook early in the season. For example, are you looking ahead with CART to plan good routes? (See Advanced Beginner). This review will give you a firm foundation for the JV skills below:

Precision Map Reading

Use contours not only to determine up from down, but also major features left and right – hills, spurs, reentrants. Anticipate up from down before encountering the slope. When the map is full of boulders or stumps, or too many crisscrossing trails to be helpful, you should be able to look at the underlying shape of the land as indicated by contour to guide you to the control. The best exercise for developing this skill is to collect maps from venues that have a lot of hilly terrain, orienteering there if possible.

Vegetation boundaries: Understand that boundaries can vary by mapper or region or seasonal changes, and might be distinct or indistinct. There is no substitute for experiencing the variety of vegetation in the terrain prior to an event. Use a model map and intentionally test out the different densities of vegetation: the rough open, the typical forest, the dense forest. Find distinct vegetation boundaries, the difference between running in the low areas versus on a ridge. Read the course notes, especially for special vegetation symbols used and course tips.

Best route: As a High School JV orienteer, you should be able to find more than one route option, make a decision that plays best to your skills, and accurately follow your chosen route.

Speed control involves not only knowing when you are on open ground for running, but also when it's a good idea navigationally.

Precision Compass Reading

Continue the use of the compass as described with the Middle School level. Get more compass practice with straight bearing shots in subtle contour, fairly open terrain: Use it to get from Point A to Point B to Point C – varying distance, varying obstacles to get around and get back on track. Remember short visual checks (every 7-10 seconds) on the map to make sure you are still on the correct bearing with the map North lines. City parks work well for this exercise.

Site on a guiding visual point on the horizon or farthest point you can see—a long bearing—to use as reference while navigating around obstacles that can take you off your bearing.

Use a compass bearing at an **attack point**, combined with accurate pacing, to go the last distance to a control. (See below for pace-counting information to do this).

You can also use the compass to get to a linear handrail slightly left or right of the control so that you can turn in the direction of the control from a known direction, an intentional "**aiming off**". You are deliberately missing the control in a known direction to improve the odds that you will know which way to turn when reaching the feature.

Physical Skills

Pace count: Every orienteering map should have a linear scale that shows various distances. The size can vary. 100 meters on a 1:5,000-scale map will be twice the distance as 100 meters as a 1:10,000-scale map. If you know how many steps you typically take to go 100 meters, then you can use that to track how far you have traveled since your last collection feature—useful information if the terrain around you is not feature-rich. Also, if you know that distance A on your map is roughly equivalent to distance B in similar terrain, then the steps should be equivalent and a potentially valuable measuring tool.

To figure out your pace count, count your steps for one foot on a measured distance (such as 100 meters), one way and then back, then average the two directions. Your walking pace count and running pace count are both useful—and will be different.

Booster Activities (quick exercises to help you get better)

- Run a recreational course or permanent course with a partner, using two navigation options from Point A to Point B and compare.
- Using an online map to "armchair orienteer" fantasy map points help hone this skill of seeing multiple options that may be overlooked in the heat of competition.
- Have an after-run discussion about your course route. WIOL now offers **Orienteering Mentors—**orienteering experts who can help with this at each school. Just ask. (wiol@cascadeoc.org).
- Use Route Gadget to draw your course after the event and compare times and routes against others who have drawn theirs. See the **Resources** page of this handbook.
- Find two points on a map and measure how far apart they are using the map scale. Then figure out what your pace count should be for that distance, and walk it. Were you right? Also pace out the distance between two other points, then measure on the map to check your accuracy. Pace counts going uphill are typically less effective than flat or downhill pace counts.

Taking the time to trace your route afterwards will help you learn lessons from each event and apply them to future courses.

Critical Skills for High School Varsity (Short Advanced) Orienteers

By the time you get to varsity, you have already demonstrated the ability to identify routes that work best for you on an orienteering course and make quick decisions. Now you will be honing your observations and combining them with a higher degree of endurance. You will find these skills useful.

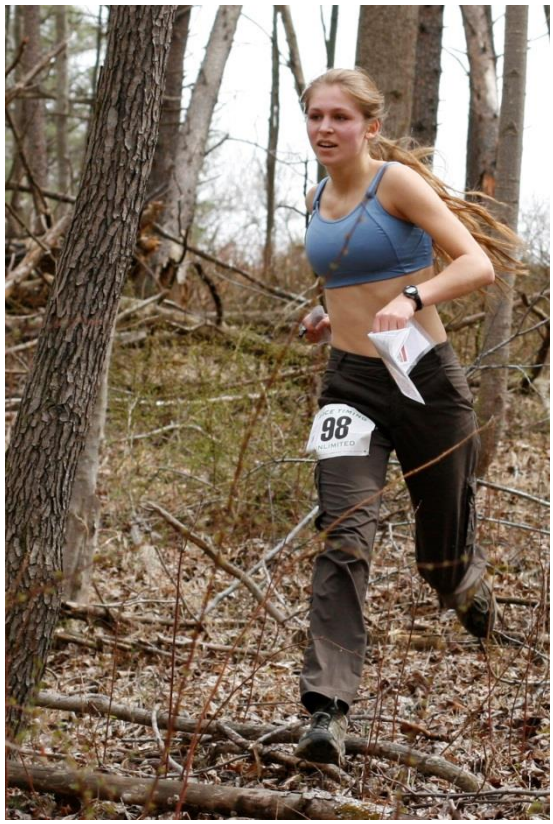
Precision Map Reading

At this level, you should know all the map symbols, be able to fold, orient, thumb and read your map on the go, planning a route, taking in the options and executing them with precision. You have less reliance on man-made features, and more on subtleties of the terrain. It is still very important to observe the features along the way, using every bit of information provided on the map, always having an attack point and knowing if you overshoot the control.

You are aware of the potential for error of similar features, and are alert to the fine differences between them that will keep you in contact with the map. You are able to relocate if you momentarily lose contact.

Reviewing others' runs via **RouteGadget**, using old maps or online maps, using **Catching Features** will keep you mentally prepared for the race days. (Information on both of these is in the Resources section of this document).

Visualize the terrain ahead, knowing what to look for and then realizing it will facilitate finding the control. Pay attention to details surrounding the control so that it is easy to find amidst several similar features. Mentally **simplify the map** to a few solid details/features needed to navigate.



Plan ahead – sometimes a couple of controls ahead, or an especially long leg (best route). Use trail run time to think about the best route or attack points to use, working backwards from the control to where you want to attack it from, then back to the beginning of the leg and how to reach your attack point.

Precision Compass Skills

Compass use on the map should become second nature, a part of every decision. If there are no visible features around, you can take a bearing and pace count from a known attack point and get to the control anyway.

Physical Skills

At this level, most of the distinction between varsity orienteers and competitive varsity orienteers is based on a strategy of mental and physical training.

Physical fitness is necessary, with some training for distance (**endurance**), speed (**interval training**), and **weights** (injury prevention and strength) regularly several times a week.

Be able to tune out other orienteers in the woods and stay focused for the length of the course. Mental training is necessary 2-3 times per week via map running either in real terrain or while on a treadmill with a fantasy course, training mind and body to work together.

Have a system, including when to check the description and speed variance. Know when to run fast, when to walk slowly, and when to pause and think. Your mental sharpness for decision making is also reliant on your fitness level.

Booster Activities (exercises to help you get better)

- Making maps can really make a big difference and improve your speed and accuracy with terrain association. You will have to make decisions on surroundings, measuring, redrawing, "thinking maps" for several hours at a time.
- Get lots of practice doing orienteering on a regular basis. Using the between-meets time for practice of a specific skill.
- Run on as many maps as possible, at local meets, other clubs' local meets, and national meets. (See the References page for information about how to find other meets. Build a group of friends who also enjoy orienteering and get together regularly to do the things you like.
- Learn the precise placement of a control on a feature and how to read that in your description sheet or through course setting.
- Set courses for others. Feedback from those who run improves skill level and understanding.

How To Build An Excellent Team, Step By Step

What are your goals? There are no shortcuts to getting there, so every step is important and will take some effort, but at least the ladder to your goals is well-marked.

A. Steps to become a team that always finishes

1. **Make it fun**. Before you can do well, you've got to enjoy what you're doing. Starting with a low-key orienteering club takes all the stress off. Do permanent courses together in parks or recreational public courses at meets. Learn from each other, and get comfortable with a map. Then have a picnic in the park.

2. **Add skills slowly**. Each time, you go out, focus on one skill. If that skill doesn't work, focus on something else next time, and come back to it later. Each time, you'll get better.

3. **Establish a strong pre-event routine.** Before you even pick up your map in a meet, you can already know:
    - What major navigation features will be on the map near the start (because you looked around you while in the Start line)
    - What direction your map should face when you pick it up (because you checked your compass for North while in line)
    - What control features you'll be looking for on your course (because you picked up a description sheet before getting in line).

4. **Recognize soloing**. Completing a course without any help is an achievement. Don't let a "first solo" moment slip away. Create a recognition event that makes everyone think about their first solo experience.

5. **Celebrate the first all-solo event**. The moment that everyone completes a course under their own navigation is especially magical. Celebrating this makes individual navigation a team goal and part of the team culture.

B. Steps to become a highly competitive team (and still have fun)

6. **Offer moments to shine**. Who was the fastest from Control #1 to Control #2? How about #2 to #3? What excellent route did you choose? Reviews like this accelerate learning and reinforce that every leg can be an opportunity to be the best, even after a bad leg. This builds resilience in the face of adversity, which leads to consistency.

7. **Look for opportunities to play**. Even (or especially) when events are competitive, it's important to find ways to add fun. Maybe go out together on a public course. Or go to other meets outside the league season—"score-o or rogaine" meets in particular encourage pairs running and the freedom to find any control in the park. After an event, have lunch together.

8. **Add inspiration**. Team shirts build a sense of identity and pride. Spending time with competitive peers and hearing their goals, or mingling with more advanced orienteers who have achieved success can be the catalyst that gets students committed to the next level of participation.

9. **Take advantage of step-up opportunities**. One major shared characteristic among top orienteers is that they take advantage of many opportunities to improve their skill. More time on maps equals more skill. So they show up together at other local meets outside of the league, attend skills clinics or coaching classes, maybe even taking a shot at course setting for a local meet. They also take advantage of regional or national events such as Interscholastics or other A-Meets. In any year, those students with national experience usually rank at or near the top of the league.

10. **Maximize fitness**. Skilled completion of an advanced orienteering course is like a cross-country race of intervals. So running sprint intervals, combined with participation on a cross-country team, can build your standing in both sports. But in orienteering, you need to keep your mind sharp the whole time. Practice activities that use your mind as you run, including tracking your pace count in the background, memorizing a new route before you leave for your run, or reviewing an old map (or even reading a newspaper) while you run.

Representing the United States: Elite Orienteering For Juniors

Juniors who aspire to be the best young orienteers have the chance to represent the United States internationally in the Junior World Orienteering Championship. Here's what it takes to get there:

Prioritization: First, elite performance in any sport requires commitment to make that sport a top priority over time.

Physical Training. Consider working with a cross-country or track coach. A rigorous program of physical training must be followed, including weekly interval and distance runs, core and strength training, a variety of workout types and venues, progression in both speed and endurance, and rest days to allow overloaded muscles to recover and to avoid injury. Develop a written plan and track your progress over time, adjusting as necessary. Anticipate 5-7 hours of running a week, including hills and 800-1000m intervals (taking along map exercises), 2 hours of armchair orienteering, and 2 hours of core/strength training.

Technical Training. Technical skill training is at least as important as the physical workouts and needs to fit into the physical program, in conjunction with workouts or on rest days. The biggest single component of technical training is to run on as many maps as you possibly can – local meets, regional events, sprint camps, junior training camps, rogaines (long-distance partner events) and A-meets. And when not out training and competing, volunteer to pick up controls post-race, design and set courses, and assist in map making and updating. These activities reinforce a fundamental understanding of maps that will translate to quick and accurate map reading in the future.

Fine-Tuning. Develop specific activities that hone map reading, compass and distance estimation skills. After training or competing, evaluate your performance and seek opportunities to improve. Coach or mentor others, and get certified as an orienteering coach.

Social/Community. Once you make the personal commitment to elite orienteering, there is a tremendous community eager to work with you and assist you toward your goal. Select a coach that you are compatible with and with whom you can develop your training program, including frequent detailed analyses of courses ran. Seek out training partners so that you can push each other and to share your journey. Have fun with this – envision the road trips, shared adventures and campsite camaraderie that are all part of getting to those interesting and challenging venues. Ready to make the first step? Contact the WIOL Director at wiol@cascacdeoc.org and ask to be matched with an elite coach.

Orienteering Resources To Help Build Expertise

A. Local events

Whether you are refreshing last year's skills before the WIOL season starts or working to boost yourself to the next level of competition, there is no substitute for getting on more maps.

Fortunately, this is easy to do in our area, with orienteering year-round in several organized series. Each series has its own unique flavor, but all offer excellent opportunities to practice orienteering, mentor younger orienteers, and fine-tune your own feature-recognition skills by volunteering as course designer.

- The **Choose Your Adventure** series in the Summer/Fall features score-o events in a variety of local venues, such as a forest, college campus, corn maze, bike or canoe venue, and even vampire orienteering (in October at dusk, while trying not to get caught with a red flashlight). This orienteering format includes a mass start, with the same controls all over the park; try to get as many controls as possible before the allowed time is over! The timing of this series makes it perfect for building teams just before the WIOL season starts.

- The **Ultimate Orienteer** series in the Spring/Summer features classic orienteering in a variety of formats, such as sprint, long, ultralong, night-o, and relay. Expect 3-4 courses of varying difficulty from beginner to advanced, in a range of terrain that includes some of the best orienteering in the state, in central Washington. Multiple competition classes include a masters level and a juniors competition. The timing of this series makes it perfect for building on your WIOL skills in preparation for next year, or the next step, into national competition (A-meets) and trying for the US junior national team.

- The **Wednesday Evening** series in the Summer/Fall features relaxed, manual punch meets, beginner to intermediate courses, and casual social time around a BBQ at the end. Get to know other orienteers, introduce friends to the sport, and try your hand at course setting or vetting in a supportive environment.

B. Regional and national events

Once you start orienteering beyond the WIOL season, it opens your eyes to different venues, terrain, and ways of running meets. This is never more true than with regional and national events, from Vancouver BC to California, and as far east as you want to go. Regional and national events of particular interest are posted on the club website at http://www.cascadeoc.org/upcoming-events, but these events are of particular interest every year. Expect a contingent from our club going to:

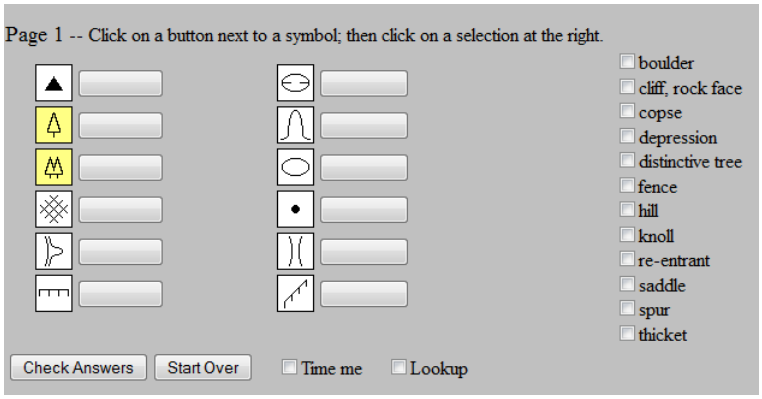
- Vancouver Sprint Camp
- Events across the state put on by other orienteering organizations, such as Mergeo, EWOC (Spokane) and CROC (Portland)
- National meets like Interscholastics (students), North American Orienteering Championships, and various time trials events and western A-meets.

C. Descriptive Sites for Training Information

- **Local permanent courses**. These orienteering courses are available year-round and an excellent way to ease into—or get back into—the mind-set of solo orienteering in a competitive league. Print a map off the web, then find control markers in the park, either solo or with friends and family. See http://www.cascadeoc.org/permanent.

- **Online quiz for control symbols**. Think you know all the control symbols and descriptions? Here's how to be sure: http://www.fortnet.org/icd/.

- **Online quiz for legend symbols**. Learn the map symbols in the legend to make sure you understand the distinctions when you come across them on your orienteering course: http://www.fortnet.org/icd/mst/index.html.



- **Compasses**. Learn the art of precision navigation by compass. There are numerous types of compasses, but for those with a movable housing, these sites offer simple instructions: http://www.dnr.state.wi.us/org/caer/ce/eek/cool/orienteering.htm or http://web.williams.edu/Biology/Faculty_Staff/hwilliams/Orienteering/compass.html

- **WIOL**. Get introductory information to register for WIOL at http://www.cascadeoc.org/wiol.

- **Attackpoint** (http://www.attackpoint.com). This social website offers older juniors and adults a place to find community, log training and receive support, sport relevant discussions, etc. It is a vital social media for some. There's even a Junior tab within the site.

- **Map sources**. There are numerous sources for archived maps to help with mental walk-throughs (armchair-o). Many users are posting their maps in their training logs on www.attackpoint.org. There are a lot of archived maps on http://www.petergagarin.org/. And you can find a lot of international maps at http://omaps.worldofo.com/.

- **Orienteering USA** (http://orienteeringusa.org). The national website for orienteering provides a single calendar for all nationally sanctioned meets, as well as a listing of clubs nationwide that offer local meets in different types of terrain.

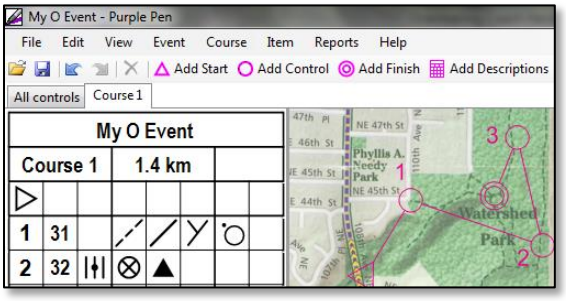
D. Simulation Gaming and Other Specialized Orienteering Software

You can boost your orienteering knowledge even inside, with specialized orienteering software:

- **Catching Features**. A computer game called Catching Features allows gamers to "run" on an endless variety of maps, without ever leaving the classroom. It removes all physical ability differences between participants and focuses on just navigational skills. This Windows PC-based application is not free, but includes a great free demo with five small courses on it: http://www.catchingfeatures.com/game.php.

- **WinSplits**. Your finish line printout tells you how long it took you to get to each control. WinSplits takes this a step further, listing how long it took everyone to get to each control. See how your place position changed during your course, and how the fastest finishers earned that position. Look for the WinSplits link after each event when results are posted.

- **RouteGadget**. RouteGadget takes the WinSplits data and makes it visual. Watch an animated race of all participants, and—for anyone who's drawn their routes in—see how different route choices compare in effectiveness. Look for the RouteGadget link after each event.



- **Purple Pen**. This super-easy program is highly useful for anyone planning a meet or training event. While an OCAD file may be useful if you're changing the map, you can also use any graphics file, ranging from Google or Bing map captures to PDF files of your local parks. Purple Pen helps you easily add and connect control locations into a course and add control descriptions to the map page. And when you're done, print out a nice PDF file for easy readability. Get it for free at: http://purplepen.golde.org/

- **OCAD**. If you're doing any significant mapping in orienteering, you're going to come across OCAD. It's expensive, with a steep learning curve, but it's the de facto standard in the sport because it has grown up with the sport and keeps adding advanced features. If you know where to look, you can still get version 6 for free: http://www.ocad.com/en/downloads/freeware.

E. A Brief Glossary of Orienteering Terms

Many orienteers use their own specialized lingo without realizing it. Here is a list of one-line definitions to demystify any arcane terminology you may hear.

- **Aiming off**. Deliberately guiding to one side of a control to approach it from a known direction.
- **A-Meet.** A national-level meet, often multi-day, with longer, more complex courses.
- **Attack point.** A notable feature near a control that helps you guide to it.
- **Bearing**. The direction of travel when using a compass for navigation.
- **Cairn**. A pile of rocks, used as a feature.
- **Catching feature (or catching point).** A feature that tells you that you've gone too far.
- **C-meet.** A local orienteering meet, typically smaller and more casual than a national meet.
- **Collecting feature**. A feature along your route that confirms you're where you think you are.
- **Contour line**. A brown line connecting ground at the same elevation.
- **Control description**. A graphical description of the precise location and orientation of a control.
- **Control symbol.** An international symbol for a type of feature, used on all orienteering maps.
- **Control.** A white and orange marker used as a progress checkpoint in an orienteering course.
- **E-punch**. A personal electronic stick used with controls in an event to verify course completion.
- **Handrail.** A linear feature such as a trail or stream that can guide you if stay next to it.
- **Knoll**. A very small hill, used as a feature. (A "dot knoll" is a very small knoll).
- **Leg**. The distance between one control and another. Orienteers may travel by different routes.
- **Legend.** The part of the map that describes the graphics used on the map.
- **Manual punch.** Use of a punch card with controls in an event to verify course completion.
- **Pace count**. A method of measuring distance by steps traveled, either walking or running.
- **Permanent course.** An orienteering course with permanent posts that remain in the park.
- **Reentrant.** A sloping valley between hillsides, used as a feature.
- **Relocation**. The act of finding one's location again after becoming disoriented.

- **Rootstock**. A fallen tree with roots sticking up, used as a feature.
- **Route**. The participant-chosen navigational decisions to go from one control to another.
- **Saddle**. A ridge between two hilltops, used as a feature.
- **Safety bearing**. A bearing that guides participants back to a populated area if they get lost.
- **Scale.** The relationship of map size to the ground, typically between 1:5,000 and 1:10,000.
- **Score-O (or Rogaine).** A type of orienteering meet in which participants do not have to visit controls in order.
- **Spur**. A hillside that sticks out to one side in a downward-sloping ridge, used as a feature.
- **Thumbing**. Tracking one's location on the map with a thumb at each collection feature.

For a more comprehensive listing, see "O Lingo" on the *Orienteering USA* website.

Developed from the experiences of running the largest youth orienteering league in the United States, **the Orienteering Coach's Handbook** is the essential, resource-packed guide for every youth orienteering coach. It concisely touches on the necessary navigational skills at each level of junior development, while offering numerous tips about how to improve quickly and create a team culture of fun and continuous improvement.

Cascade Orienteering Club
Seattle, Washington
www.cascadeoc.org