

General Instructor Notes

40 minute teaching script. Key details for each course available separately.

Introduction (2 minutes)

Near the initial gathering location:

- **Introduce** yourself and welcome newcomers
- **Define** orienteering
- **Explain** what they are going to do today (complete a mapped course)
- **Show** control marker and punch (there will be one close by)

Compass Use (3 minutes)

Briefly:

- **Red needle** points north: hold compass level
- Review **cardinal directions**
- **360° in a compass circle**: allows hiker to travel on a dialed-in bearing
- **Ruler** helps determine travel distance: can calibrate with pace counting
- O-map uses **magnetic north**: no declination calculations needed

Map Reading (10 minutes)

Distribute maps with clue sheets.

- Describe **orienteering map**: symbols mostly, not much text, mag N at top
- Discuss **colors and map symbols**: legend (IOF Orienteering Map Symbols)
Linear features: roads, trails, streams, fences
Point features: buildings, lone trees, manmade objects
- Explain **scale and contour interval**: 1 cm on map = 5000 cm (50 meters) in the real world for a 1:5000 map. Map contour interval is 5 meters.
- Discuss **course markings**: triangle Δ , double circle \odot , order of controls
- Discuss **clues and international symbols** (IOF Control Descriptions)

Orienting the Map (3 min.)

Cover at the beginning of hike and again at each control point:

- Find **where they are** on map
- Use compass (needle only) to **orient map** with magnetic north lines
- Note **nearby features** and show that map symbols match surroundings
- **Locate the next point** on the map and its approx. location in the real world
- Demonstrate how to **keep map oriented** while hiking

Orienteering at each point (20 min.)

Get moving. At each point:

- **Check code, punch** in correct box on punch ticket.
- **Locate the next point** on the map and its approx. real world location
- **Describe route choices** and how they will dictate speed vs. ease of navigation
- Point out any **handrails**, **collecting features**, **catching/backstop features**
- **Make a plan and move** to the next point

Refer to notes for
specific courses.

Safety (1 min.)

Reminders:

- **Be prepared**: snack, water, whistle, first aid, etc,
- Don't take **unnecessary risks** (stay out of ponds, avoid cliffs, etc.)
- Always check in at **finish**
- Report **injured hikers** to the officials

Close (1 min.)

Wrap it up:

- Remind them about the **other practice courses** currently at park (white=easiest, yellow=a little harder, orange=a little longer)
- Wish them good luck and **invite them** to find you at the end to tell you how they did
- If they had fun, invite them to **join the club and/or come back next year**

A Few Tips

- Keep your audience engaged -- get moving on the trail as soon as possible. Try to limit the pre-hike talk and use on-trail time to go more in depth.
- Don't speak too fast. You have a limited amount of time to complete the hike, but your audience needs to be able to understand you.
- Explain to beginners that practice courses start at □, and end at ©. Points to be visited sequentially.

Review of Terms

Orienteering: the skill or sport of finding your way in the field with a map and compass.

Handrail: a longish feature shown on a map which runs more or less parallel to the direction of travel.

Collecting feature: an obvious feature between you and the control that helps guide you.

Catching feature/backstop: a feature beyond the control that can be used to alert you that you have gone too far.

Attack point: an easy-to-find feature shown on the map from which the final approach -- "the attack" -- to the control can be made.

Declination: the angular difference between true north (usually depicted on maps) and magnetic north (which moves from year to year). Currently (year 2025) declination at Highland Forest is $-12^{\circ} 0.4'$ (west of true north). It is between the Canadian Arctic and eastern Siberia.

Course color codes (easiest/shortest to hardest/longest): White, Yellow, Orange, Brown, Green, Red, Blue.

Reentrant: A cut in sloping terrain that could potentially carry water. "V"s in contour lines point uphill.

Pace Counting

You can calibrate your real world travel distance with distance on the map. Find two points on the map that are 1 cm apart and have participants count their paces (every other step) between the two points in the real world. They can then use their personal pace count to keep track of progress on the map (1 cm = pace count). Uphill, downhill, and travel through rough areas will affect perceived progress.

Transfer Bearings from Map to Field (for more experienced groups)

Step 1: On the map, line up your compass with your route. Place the compass on the map with the side edge of its base plate touching both your starting point and your destination. The direction-of-travel arrow on the base plate should point in the direction you want to go. Disregard the compass needle.

Step 2: On the compass, set the housing to match the N-S lines on the map. Hold the base plate firmly against the map with one hand and turn the compass housing until the lines on the housing are parallel to the nearest N-S line on the map. Make sure that north arrow on the housing points to the top of the map. Disregard the compass needle.

Step 3: In the field, follow the direction set on the compass. Hold the compass level in front of you with the direction of travel arrow pointing straight ahead. Turn yourself around until the red end of the compass needle ("Fred") aligns with the arrow on the bottom of the housing ("Shed"). Once "Red Fred is in the Shed" the direction-of-travel arrow points to your destination.

Follow a Bearing (for more experienced groups)

Choose a landmark such as a tree or large rock in the direction of travel indicated by your compass. Walk to that landmark without looking at your compass or map. When you have reached it, again check the direction with your compass, on which you have been careful not to change the setting. Ahead is another landmark leading you closer to your destination.

Key Concepts on Novice Guided Course (for beginners)

Grab some punch tickets to hand out at the end of the hike. Pick up your group at the Community shelter (below Pines). Walk your group up to the multi-directional trailhead near Pines Camp.

At Start Triangle

Demonstrate how to **orient the map** with the top of the map pointing to magnetic north.

Line up finger from “here” to “there”. Finger points the way.

Point out **clue** for point 1 and how to read the clue description box. Discuss route choices.

Walk to point 1, noting how **map features** appear in the real world.

At Point 1

Point out the **control number** and verify it's the right one in the clue table.

Show a sample punch ticket (to be handed out later). **Show how to punch** (practice on edge of map).

Explain how to fill out punch ticket, safety pin it for easy access.

Explain that they always return ticket even if they don't finish to avoid later search for missing hikers.

Orient the map. Handrails -- linear features (roads, streams, paths, edges of a clearings) that make navigating easy. What handrails lead us to point 2?

Pace counting exercise: Find two features on map that are ~½” apart (tip of pond and the first trail junction east of point 1) then count paces between the features. Everyone's count will be different. Pace count becomes a useful tool for judging distances on map (must redo for new map with different scale).

On the way to point 2, mention **contour lines**. Contours and pace counting help in locating the next point. NOTE: Side trail to point 2 is a little obscure but marker should be visible and on the trail.

At Point 2

Further discuss **contour lines**. If there are two routes, contour line density could influence the decision.

Top of hills are closed loops (Pines Camp); steep vs. gradual hills; long ridges; reentrants

Orient the map. Discuss route choices to point 3.

Vegetation boundaries. Point out veg edges (dotted line) that can be used for navigation and which areas (amber, amber with dots, white, green, blue) are easy/hard to walk.

At Point 3

What **handrails** could lead us to point 4? Have your group lead. Note map features along the way.

At Point 4

Discuss **symbols** in the clue description box. Proceed to finish.

At Finish

Know the park - main park road runs through the middle. If lost, head east or west towards the road.

Hand out **punchcards** to groups that will do a second course (on their own).

Pioneer Museum is free and will be open from 8:30 AM -1:30 PM.

Key Concepts on Experienced Guided Course (previous experience)

Grab some punch tickets to hand out at the end of the hike. Pick up your group at the Community shelter (below Pines). Walk your group up to the multi-directional trailhead near Pines Camp.

At Start Triangle

Orient the map and review area around the trail head, comparing map symbols to the real world.

Review the **clue description box** and point out clue for point 1.

Vegetation colors on map: white, light green, dark green, hatched green. Discuss the pros and cons of traversing them, especially slashed areas indicating logging or blowdowns.

Pace counting exercise: Find two features on the way to point 1 that are ~1 cm apart then count paces between the features. Pace count becomes useful tool for judging distances on map.

At Point 1

Point out the **control number** and verify it's the right one in the clue box.

Review how to punch: Show a sample punch ticket (to be handed out later). Explain how to fill out punch ticket, safety pin it for easy access. Always return ticket to avoid later search for missing hikers. Discuss **route choice** and **attack point** for point 2.

At Point 2

Handrails: Point out linear features (roads, streams, paths, veg edges, rides, linear marshes) that make navigating easier.

Collecting features: Point out obvious features (open area above the stream, intersection of ride and marsh drainage) between you and the control that help guide you.

Route Choice: What handrails lead us to point 3? Which vegetation areas are easier to walk through? What collecting features ensure we are on the right track?

At Point 3

Reentrant: Review feature on the map and in the real world. "V"'s in contour lines always point uphill.

Contours: Examine the contours on the map. Top of hills are closed loops, steep vs. gradual hills, long ridges, reentrants. If there are two routes, contour line density could influence the decision. Discuss hiking along a contour for ease of movement.

Route choice: Note all of the stream crossings and trail intersections on the way to point 4. Discuss a convenient **attack point**.

At Point 4

Note how map features, especially **vegetation boundaries** (dotted lines and color changes), appear in the real world. Clear vegetation boundaries can serve as **handrails**.

Route Choice: Follow a **bearing** through the woods or walk the trails? Demonstrate how to take and follow a bearing to point 5.

At Point 5

Discuss **route choices**.

At Finish

Know the park. Main park road runs through the middle. If lost, head east or west towards the road. Hand out **punchcards** to groups that will do a second course (on their own). Safety pins at start.

Pioneer Museum is free and will be open from 8:30 AM -1:30 PM.