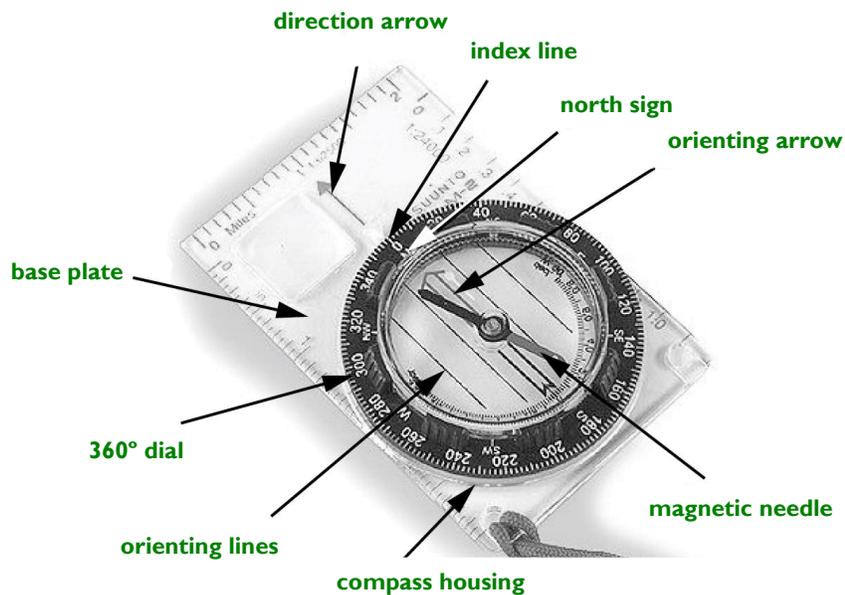


# Blackwell Compass Course



For information and course materials, go to:

[www.dupageforest.org](http://www.dupageforest.org)

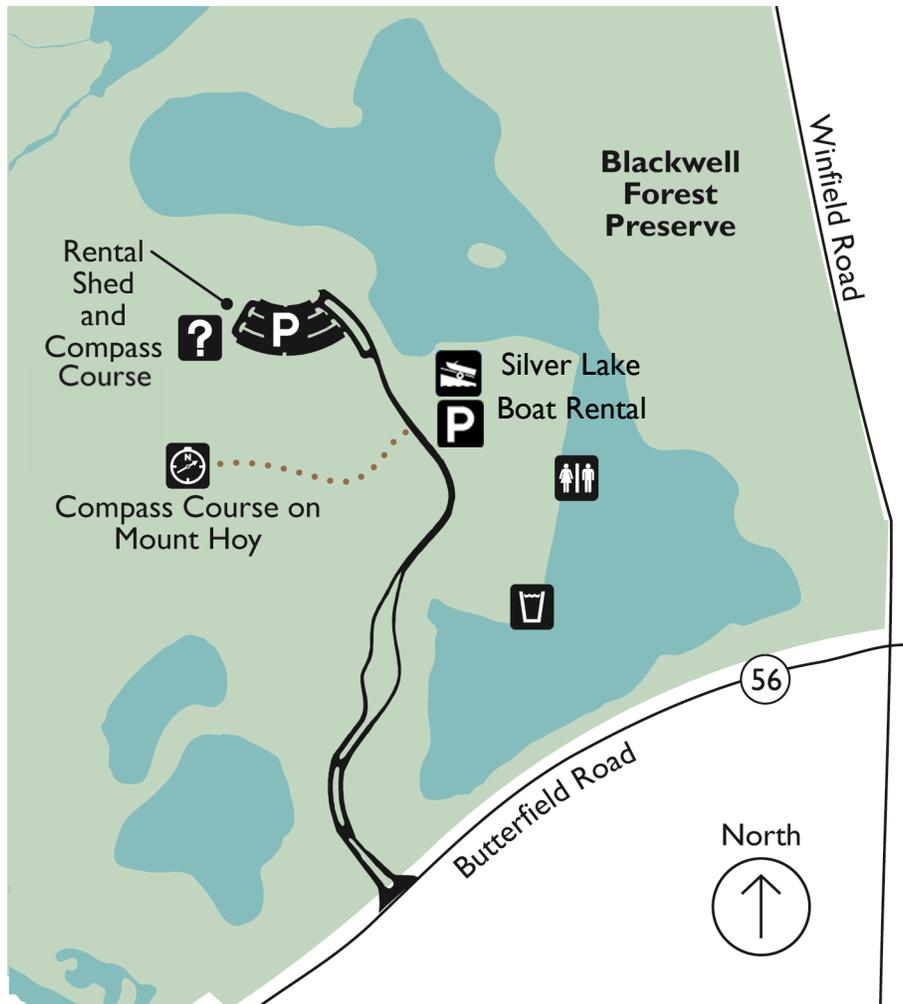
For groups 25+ call (630) 933-7248



**Forest Preserve District of DuPage County**

## Getting There

The main entrance is on the north side of Butterfield Road (Route 56) 0.25 mile west of Winfield Road and 1 mile east of Route 59. Follow the entrance road to the first large parking lot on the left. Park at the end of the lot near the snow-tubing rental shed.



With woods, fields, lakes, streams and wetlands, the 1,377-acre Blackwell Forest Preserve is one of the best environmental education sites in DuPage County. The forest preserve offers restrooms with pit toilets, picnic tables, drinking water, hiking and biking trails, reservable campsites and other recreational features.

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## The Compass Course

The compass course consists of eight navigational posts spread across the terrain on Mount Hoy. Participants can navigate the course using one of 4 routes designated W,X, Y & Z. We encourage groups to bring their own compasses but they can be borrowed on a first come, first served basis from the Silver Lake Boat Rentals right here at Blackwell. Course materials are available online at [www.dupageforest.org](http://www.dupageforest.org). Groups of 25+ can make a reservation by calling Visitor Services at (630) 933-7248. Reservations for smaller groups are not required.

Help us keep this area neat and this program a success!

- Bring “no waste” lunches and snacks, and throw out your trash.
- Don’t pick the flowers, and leave all plants and animals as you found them.
- Remind your group that you cannot collect or hunt in DuPage County’s forest preserves.
- Report any missing or destroyed posts to Visitor Services at (630) 933-7248.

## Estimating Distances

### Materials

- Pencils
- Paper

### Procedure

1. Take your group outside to a large open area. Be sure each participant has a pencil and paper.
2. Ask each participant to write down an estimate of the following:  
Distance from the front door to the street  
Distance to a nearby tree  
Distance to the nearest street corner
3. Ask everyone what their estimates were.
4. Discuss ways to make estimates more accurate, such as counting paces or thinking of distances you already know.
5. Make new estimates of the distances.
6. Discuss the results of the new estimates.



## Measuring Distances

### Materials

- 100-foot-long tape measure
- 150-foot-long piece of string
- One 1-foot-long and one 3-foot-long piece of string for every group of three

### Procedure

1. Place the 150-foot piece of string on the ground in a straight line. Designate one end as the starting point.
2. Divide everyone into groups of three.
3. Have one member of each group estimate the point that's 100 feet from the starting point and then stand at that point.
4. Have a second member of each group use the foot-long string to measure 100 feet from the starting point and then stand at that point.
5. Have the last member of each group use the 3-foot-long string to measure 100 feet and then stand at that point.
6. Ask the "estimators" to raise their hands and discuss the accuracy of this method to determine distances. Repeat with the "1-foot measurers" and the "3-foot measurers."
7. Finally, use the tape measure to accurately measure 100 feet from the starting point.

## Estimating Distances by Pacing

### Materials

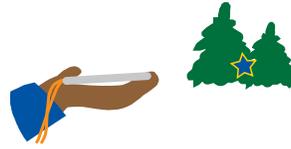
- 100-foot-long piece of string



### Procedure

1. Place the string on the ground in a straight line.
2. Explain that one pace is two steps. To count paces, count either the times the left foot touches the ground or the times the right foot touches **but not both**. For many adults who are 5' to 5' 6", one pace is about 5 feet. For many kids, it's 4 feet.
3. Ask each participant to walk from one end of the string to the other while counting the number of paces.
4. Have each participant try to adjust the length each pace so that it takes about 20 paces to walk the length of string.
5. Practice walking along the string using 20 paces until everyone has a good feel for a 5-foot-long pace.

## Walking in a Straight Line



### Procedure

1. Divide your group into pairs.
2. Go outside to a large open area.
3. Pick two landmarks that are 50 to 100 yards apart, and make them the two endpoints of an imaginary straight line.
4. Have the pairs of participants line up at one of the endpoints.
5. Ask one member of each pair to close his or her eyes and walk to the other endpoint. Have the partner follow to help the person avoid any hazards. Ask partners to switch roles and repeat.
6. Most participants will veer to the left or right rather than walk in a straight line. Discuss possible reasons for this. The ground may be uneven, or there may be a strong wind blowing from one side. One leg might even be a bit shorter than the other. To illustrate how this last reason affects the way you walk, roll an empty ice cream cone on a table. Ask participants to imagine that the open end of the cone is a longer leg and the pointed end is a shorter leg. Have them note how the cone rolls in a circle.
7. Discuss the importance of walking in a straight line on a compass hike. Explain that a good way to walk a straight line is to focus on a prominent object in the distance and walk toward that object.

## How to Use a Compass

### Materials

- Compasses



### Procedure

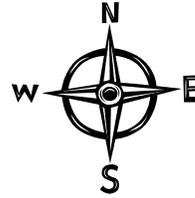
1. Before passing out the compasses, ask each participant to face north. Repeat with south, east and west.
2. Discuss direction and ways to determine direction, such as the position of the sun, the North Star or north-south or east-west roads.
3. Explain that compasses may need to be adjusted for declination. Declination is the angular difference from “magnetic north” to “true north”. For our area in Illinois, there is no adjustment necessary since they line up perfectly.
4. Pass out the compasses, and describe the parts of the compass.
5. Teach participants how to use the compass.
  - A) Hold the compass perfectly level in the palm of your hand with the direction of travel arrow pointing straight in front of you.
  - B) Turn the compass dial until the degree that you want to go is in line with the direction of travel arrow.
  - C) Then turn your body until the red end of the magnetic needle is in line with the N on the dial. Do not turn the compass.
  - D) The direction of travel arrow now points in the desired destination. **It is important to stand with compass level and the direction of travel arrow pointing straight ahead of you.** Be sure to turn your body and not the compass when lining up the magnetic needle with the N on the compass dial. This eliminates errors because it keeps you facing in the same direction the travel arrow is pointing.

Practice the above procedures with a variety of directions.

# Schoolyard Compass Game

## Materials

- One compass for each person
- Paper and a pencil for each person
- A small flag or stick for each person



## Procedure

1. Give each person a compass and a flag or stick. Have each person mark the flag or stick so he or she can identify it.
2. Go outside to a large open area.
3. Ask everyone to spread out and put their flags or sticks in the ground where they are standing.
4. Give the following three directions, but wait until everyone is done with one before giving the next.
  - 1) Go  $40^\circ$  for 20 paces.
  - 2) Go  $160^\circ$  for 20 paces.
  - 3) Go  $280^\circ$  for 20 paces.

If compass readings were accurate, then everyone will return to their starting points by walking in a triangle.

5. Repeat the activity by starting with any reading and adding  $120^\circ$  for each new direction. Make it more difficult by walking more paces. Remind participants to focus on a prominent object to help them walk a straight line.
6. Have participants walk in a square by giving them a direction and then adding  $90^\circ$  until they return to their starting points.

## Compass Course Instructions

If your group has completed the preparation activities in this booklet, participants should be able to complete Blackwell's compass course. Start and finish at the post by the snow-tubing rental shed near the base of Mount Hoy. Course Y is the most difficult.

### Materials

- Paper and a pencil for each person
- One compass for each group  
Compasses may be borrowed from the boat rental facility.
- One course sheet (W, X, Y or Z) for each group

### Procedure

1. Complete the preparation activities before attempting the compass course.
2. Start and finish at the "start" post near the shed at the base of Mount Hoy.
3. Divide into groups of two to five depending on the number of participants and available compasses.
4. Give a compass and a course sheet to each group.
5. Read the following directions:
  - A) The course sheet has directions to eight checkpoints. Each checkpoint has a marked wooden post.
  - B) All groups will use the same checkpoints but will take different routes to get there.
  - C) Remember that one pace is two steps. Count either the number times your left foot touches the ground or the number of times your right foot touches **but not both**. The paces on the course sheets are based on a 5-foot pace and should bring you fairly close to each checkpoint.
  - D) Stand as close as possible to each post when taking a compass bearing, and keep the compass away from any metal.
  - E) After taking each bearing, focus on a prominent object in the distance. Do not look at the compass while walking.

- F) If you cannot find a checkpoint, search the immediate area. Since the bearing and paces are just an approximation, your post could be close to but not right at your ending location. If you still can't find it, return to the previous checkpoint and take a more careful compass bearing.
6. Answer any questions, and then say, "Go!"
  7. Wait for the groups to return, or climb the hill to watch their progress.
  8. Once the groups return, you can discuss how the course went. Were there any difficulties? Did the groups discover any fun forest finds?
  9. Congratulations! You've completed the Blackwell Compass Course. We hope to see you again soon.

