

Navigation: Travelling in Natural Areas

Lesson Overview

During this lesson, students will learn about basic components of a map and use their critical thinking skills to identify landmarks and navigate a course to stay safe while participating in outdoor education activities involving travel.

Overall and Specific Expectations

- A1: A1.6
- B3: B3.1

Learning Goals

We are learning navigation skills so we can keep ourselves safe when participating in outdoor education activities involving travel.

Materials

- Chart paper and markers/ sidewalk chalk
- Compasses (optional for Junior/ Intermediate if available)
- Sample maps
- [Student Resource: Navigation: Travelling in Natural Areas - Self-Check \(primary\)](#)
- [Student Resource: Navigation: Travelling in Natural Areas - Self-Check \(junior\)](#)

- [Student Resource: Navigation: Travelling in Natural Areas - Self-Check \(intermediate\)](#)
- [Teacher Resource: Components of a Map](#)

Ontario Physical Activity Safety Standards in Education

Activity

[Orienteering](#)

Tools and Resources

- [Disability-Centred Safety](#)
- [First Aid Plan and First Aid Emergency Response](#)
- [Sample Curricular Medical Information and Acknowledgement of Elements of Risk Form](#)

Other

[Risk Management](#)

Assessment for Learning

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to navigate a route to stay safe during outdoor education activities. For example, success criteria might include:

- I can explain why it is important for my safety to know how to follow a map.
- I can identify the components of a map that help me read the map.
- I can identify key landmarks on a map to help me find my way to a location.

After the activity, review the co-created criteria with students, and have them complete the *Student Resource: Navigation: Travelling in Natural Areas - Self-Check*.

Assess students' responses during the class discussions, mapping activities and on the exit cards. Use the co-created criteria to evaluate student learning and offer feedback. If needed, provide feedback to individual students or the entire group, to clarify or reinforce their understanding of basic navigation, and answer any remaining questions.

Minds On

Primary/Junior/Intermediate

Using the following prompt and questions, engage students in a whole class discussion about the importance of knowing how to travel outdoors without relying on technology.

Prompt: Today we depend on technology, but many areas do not have reliable signals and a battery can run low without a way to recharge it. It is important to understand how to navigate using a map and compass and some signaling skills. Besides, it can be a fun and challenging adventure to put our technology away and use a map to find our way. Have students generate answers to the following questions.

Questions:

- When you walk to school, how do you know you are going in the right direction? What landmarks (signs and objects/features) do you look for? (for example, road signs, buildings, stop signs, traffic lights)
- What words do we use to describe the direction we want to travel? Provide the letters as a clue (for example, North, South, East, West).
- The sun moves in the sky throughout the day. How does the sun help us know which direction we are moving? (It rises in the east, it sets in the west and is due south at noon)

Action

Primary/Junior/Intermediate

Explain to students that all maps have basic components that help read them to navigate the way. Provide students with a sample map (for example, amusement park map, city map, Ottawa Parliament, conservation area) and have them identify each component as they learn about it. Have students orient their map to the north by pointing the north arrow on the map to the north, so they align the big world around them to the little world depicted on the map.

Have students explore their map to identify and share landmarks that they might use to help them find their way (for example, roads, rivers, towns, buildings). Have students point in the direction they would need to walk if they were to virtually leave the room and walk to the landmarks they identified. Consider creating a map skills anchor chart illustrating map components (consult *Teacher Resource: Components of a Map*) with visual examples for students to reference throughout the lesson.

Provide students with chart paper and markers and have them create a Compass Rose to learn the cardinal directions and northeast, northwest, southeast and southwest. Have students orient their Compass Rose to north and then draw and label direction arrows to show locations of items in the classroom, school or community (for example, the bus stop, the park, pool, bus stop, library). Consider having students complete this activity outside on the blacktop using sidewalk chalk.

Using their understanding of map components and direction, have students work in small groups to create a map of their surroundings (for example, the classroom, school grounds, the park, their neighbourhood).

Create a route on the school grounds (primary) or around the school grounds (Junior/Intermediate) for groups to travel using the map. Before students begin the activity, provide safety instructions for the activity.

Sample Safety Instructions:

- Stay within the boundaries.
- Do not cross roads, climb over fences or approach any water.
- Stay with your partner/ group; if they are slower, wait for them.

- Before you go, double check each other's bearings and agree on where you are moving to and what landmark you are using to guide your way.
- Pay attention and obey the signal to return to the established meeting area.

Junior/Intermediate

Provide each student with a compass or divide students in groups according to the number of available compasses. Remind students of the cardinal directions, and northeast, northwest, southeast and southwest. Using the compass, point out the degrees on a circle, and the number of degrees that represent the cardinal directions (0 and 360), $\frac{1}{4}$ (90), $\frac{1}{2}$ (180), $\frac{3}{4}$ (240).

Identify the parts of a compass: Base Plate, House (dial), Direction of Travel Arrow, North Arrow (Magnetic Needle), "Garage" or "Bed" (arrow etched on bottom of house), Degrees, String (to keep it around their wrist so they don't lose it)

Use the following prompt to explain how to use the compass:

"Hold the compass flat in your hand, slightly away from your body, with the Direction of Travel Arrow pointing AWAY from your body. Imagine it is a laser pointing away from you out of your nose if you are standing straight and looking straight ahead. It must be held flat or the arrow in the house will not tell the correct direction. The North Arrow (magnetic needle) always points north. We use it for navigation, but not to tell us what direction to travel in. If we always followed it, we would always be going north!" (Paragraph : Jonathan Elder, 2025; Eunice Kryna Verula, 2023)

Have students move their body in a circle to practice putting the "red in the bed", (keeping the North Arrow over the arrow etched on the bottom of the house, reminding them to move their whole body and not just their hand. The Direction of Travel Arrow must always point directly ahead of them.

Have students practice turning the house (dial), and matching numbers to the Direction of Travel Arrow. Explain that the dashes are increments of degrees.

Have students practice finding a bearing. Give them a number/degree. Have students turn the house until the number/ degree is lined up to the Direction of Travel Arrow. Students then turn their bodies, holding the compass flat in their hand, until the “red is in the bed”. Once this is done, instruct them to point in the direction the Direction of Travel Arrow is telling them to go. That is the bearing they want to follow.

Have students practice landmarking using their compass bearing. Looking up from their Direction of Travel Arrow, have them choose a landmark that is fixed and won't move, stand out from the rest of the landscape BUT that is directly on the imaginary line they will travel.

Provide students with a number of bearings. Have students find the bearing, choose a landmark and walk to the landmark. Have students repeat these steps with each bearing, moving from chosen landmark to chosen landmark.

Consolidation

Primary/Junior/Intermediate

Have students work in pairs to complete the *Student Resource: Navigation: Travelling in Natural Areas - Self-Check* to assess for understanding of navigation skills to stay safe when participating in outdoor education activities involving travel.

Divide students into groups to create a route within an established boundary then have groups trade their map with another group who will travel the route.

Junior/Intermediate

Divide students into groups to create a list of bearings that point to key landmarks in the school yard or neighbouring area. Have groups trade their list with other groups. Have groups find the bearings and identify the landmark to which it points.

Notes to Teachers

Remember to check school board policies and procedures applicable to any outdoor education activity.

A variety of assessment strategies have been identified in the Assessing for Learning section of each activity. Please note that these assessment strategies have been provided as a means for teachers to gather information to determine what students already know and can do, to inform instruction, scaffold learning, differentiate instruction in response to their students needs, and help students keep track of their progress in achieving the learning goals. These are not meant to be used for formal assessment and evaluation purposes.

References

- Jonathan Elder. (2025). [OS Maps, A Beginner's Guide to Using a Compass.](#)
- Eunice Kryna Verula. (2023). [MyOpenCountry, How to Use A Compass Correctly.](#)