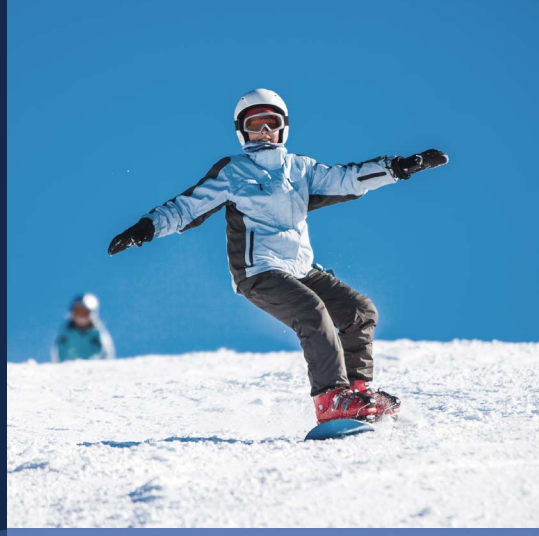
phea

Healthy Schools
Healthy Communities

OUTDOOR EDUCATION

TOOLKIT

For Grades 9 to 12



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About Ophea

Ophea is a not-for-profit organization that champions healthy, active living in schools and communities through quality programs and services, partnerships, and advocacy, and is led by the vision that all children and youth value and enjoy the lifelong benefits of healthy, active living. Ophea is a registered charity.

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About This Toolkit

This toolkit contains lessons, activities, and additional resources to support creating a culture of safety-mindedness before, during, and after outdoor education activities. Recognizing that teachers may approach outdoor education differently depending on their experience, knowledge, confidence, and local school community, teachers are encouraged to use and modify the resources for their unique context.

In this toolkit you will find:

- Tips to promote a culture of safety-mindedness among students participating in outdoor education activities
- A checklist for teachers with key planning considerations before, during, and after the activity
- Conversation starters and reflection activities for teachers to initiate, deepen, and consolidate student learning around risk management
- Lesson plans for teachers
- Links to additional resources with supplementary information about specific activities and sports, certifications, and associations

The objectives of this toolkit are to:

- Enrich and promote a culture of safety-mindedness
- Increase teacher awareness, confidence, and preparedness to teach outdoor education safety and risk management
- Increase student awareness, confidence, and preparedness about outdoor education safety and risk management

IMPORTANT: Consult your school board to ensure compliance with its policies and procedures for outdoor educational activities.

DEFINITIONS

The definitions have been extracted from the Ontario Physical Activity Safety Standards in Education (OPASSE) and are intended to clarify the terms used in the context of this resource.

- **Instructor:** An individual who provides instruction on skills and possesses the required certifications. This role could be fulfilled by a teacher, parent/guardian/volunteer or an employee of an outside activity provider.
- **Outside Activity Provider:** An outside facility contracted by the school/board to provide activity services.
- **Supervisor:** A supervisor is a teacher, parent/guardian/volunteer, or trip guide.
- **Teacher:** A person with a current certification from the Ontario College of Teachers, under contract by the school/board. This person is legally responsible for the students.
- **Trip Guide:** An individual who has the required certifications and/or knowledge/skills of the route and activity. This role could be fulfilled by a teacher, a parent/guardian/volunteer or an employee of an outside activity provider, and must be approved by the school/board.

About the Ontario Physical Activity Safety Standards in Education

Managed by Ophea, the Ontario Physical Activity Safety Standards in Education (OPASSE) represent the minimum standard for risk management practices for school boards in Ontario. They focus the attention of teachers, supervisors, coaches, and outside activity providers on safe practices, in every activity, in order to minimize the element of risk. OPASSE includes a concussion protocol to help prevent and identify suspected concussions and manage a student's safe return to learning and to physical activity. OPASSE is one component of a strong risk management toolkit for outdoor education.

School boards may RAISE the standards in OPASSE, but they are strongly encouraged not to LOWER them.

Teachers should always check with their school board to ensure alignment with their school board's policies and procedures..

HOW TO ACCESS OPASSE

- Visit safety.ophea.net
- Select *Elementary* (Grades 1–8) or *Secondary (*Grades 9–12).
- Select the activity. The activity pages are listed alphabetically, with outdoor education activity pages listed together starting with Outdoor Education. Each activity page includes the following sections:
  - Title
  - General Introductory Information
  - Equipment
  - Clothing/Footwear/Jewellery
  - Facilities
  - Environmental Considerations
  - Special Rules/Instructions
  - Supervision
  - First Aid
  - Definitions
- Select *Curricular, Interschool*, or *Intramural*, based on the setting of the activity.

Outdoor Education Tips for Creating a Culture of Safety-Mindedness

TEACHER AND SUPERVISOR PREPARATION

Make sure all teachers and supervisors are **knowledgeable** about the following:

- School board policies, procedures, and approval processes
- The Ontario Physical Activity Safety Standards in Education (OPASSE)
- The geographic coordinates for the trip
- The route the trip will follow
  - Has the teacher or any of the supervisors explored the route or travelled it before the trip with students?
- The condition of the route
  - Has the teacher and/or trip guide consulted with park staff or other appropriate agencies (for example Environment Canada) regarding the recent conditions of the route?
- Trip administration
  - Has the teacher documented student participation in trip requirements (for example, successful swim tests, clothes packing)?
  - Has there been sufficient and ongoing communication with the school administration, parents/guardians, and the students?
  - Is the teacher or any of the supervisors aware of all administrative requirements of the school and school board?

Make sure teachers and/or trip guide have the **appropriate level of knowledge competency** required for each activity. For example:

- Skills related to the specific activities involved (for example, hiking, camping, canoeing)
- Certifications related to the specific activities involved (for example Ontario Recreational Canoeing And Kayaking Association (ORCKA) Basic Instructor, Paddle Canada Camp Instructor, Advanced Wilderness First Aid)
- Outdoor food preparation, storage, and cooking skills
- Encountering wild animals (the risks and confrontation skills)
- Navigation skills

- Wilderness first aid skills
- Skills related to the use of emergency communication devices
- Risk and crisis management skills
- Group facilitation and problem solving skills
- The ability to communicate and interact with colleagues and students in a positive and constructive manner

STUDENT PREPARATION

Make sure students are **prepared** and, as much as possible, have **practiced** the following:

- Packing the required and correctly/comfortably fitting gear
- Using the gear
- Basic first aid, including using the first aid kits and emergency communication devices
- Knowing how to identify potential hazards and how to respond to prevent injury
- Knowing where and how to access what they need in an emergency
- Navigation
- Preparing food in the outdoors

Ensure your students have the required **skills and abilities to easily master the following**:

- The trip coordinates
- The trip route/itinerary
  - Have they reviewed the map before the trip, and each night or morning to plan for the day ahead?
- Emergency action plans
- Avoiding wild animals and how to stay safe when encountering them
- Overall risk management
  - Have they reviewed related scenarios, and have they practiced how to react under various circumstances?
- The group dynamics and its role in a successful trip
  - Do they know their responsibilities to self, to others and to the group as a whole?

HAVE AN EMERGENCY RISK MANAGEMENT PLAN

- Always create an emergency risk management plan and make sure all trip teachers and supervisors understand and are comfortable with the outlined plans.
- Trip participants should be made aware of and be comfortable with their role during an emergency.
- Include simple activities for inclement weather (for example, water colour painting or song writing). Consider the extroverts and introverts in the group.

COMMUNICATION IS CRUCIAL

- Organize a pre-trip meeting with all teachers and supervisors to review the route itinerary, emergency plans, decision-making strategies, communications, menu, participant concerns, and any other matters that are pertinent to the trip.
- Organize a pre-trip meeting with the students and their parents/guardians in order to make sure everyone has current information and is comfortable with the trip plan, the emergency risk management plan, and the expected behaviour during the trip.
- Be knowledgeable about the site or hosting facility (for example, the park office, local police, campground operators, outside activity providers) and the conditions of the route or facility before the trip, to avoid any last-minute surprises.
- Notify local emergency services of the trip. Leave the trip itinerary with the park office and/or local Ontario Provincial Police (OPP) detachment. Before the trip, work with the local services to establish emergency measures and telephone numbers to call in case of emergency during the trip.
- Before the trip, have the students complete a personal reflection on their expectations, goals, and biggest “fears” related to the trip. This will help address any worries during discussions with the group, so that each student can benefit fully from the experience. Ensuring everyone is comfortable should relieve tensions that might lead to problems with group dynamics or unsafe situations.

- Be aware of students' medical conditions and school board policies and procedures on medical conditions, including considerations for carrying medication for use in emergencies (for example epinephrine and naloxone).
- Review the contents of the first aid kit before the trip. Make sure it is well stocked, medications are up to date and appropriately stored and all items are readily accessible during the trip.
- Make sure all meals are planned considering the dietary restrictions of group members. Allow for choice during the planning process so that all participants will be well fed and happy.
- Review hygiene practices before the trip. Before the trip, talk to the students confidentially about their concerns or refer them to a teacher or a supervisor with whom they can talk about those matters.

LISTEN TO ONE'S INSTINCT

- Pay attention when things do not seem right. Take the time required to stop and think things through when decisions need to be made.
- Check in with the other teachers and supervisors. If anyone is uncomfortable with a decision, their concern needs to be respected by the group and fully considered when making decisions; for example, if one teacher or supervisor is uncomfortable heading out or continuing further, the group should stay where they are.

Prepare ahead of time to get a solid rest the night before the trip!

Outdoor Education Teacher Checklist

This checklist provides a list of key considerations when planning outdoor education activities. Keep in mind that school and school board requirements may differ, so always check with the school and school board before planning any outdoor education activity.

BEFORE OUTDOOR EDUCATION ACTIVITIES

- ☐ Consult school board policies, procedures, and approval processes.
- ☐ Consult the Ontario Physical Activity Safety Standards in Education (OPASSE).
- ☐ Create an emergency risk management plan for the trip, including emergency phone numbers and an evacuation plan.
- ☐ Consider conducting a visit to the site before the trip to check route, campsite, portage, emergency service or other conditions that will impact the trip.
- ☐ Assess whether cell phone access will be possible in an emergency or whether an alternative communication device needs to be procured (for example Spot or Satellite phone).
- ☐ Assemble a team of teachers and supervisors who have the skills and/or qualifications (for example, first aid and lifeguard qualifications, police record checks) to meet minimum safety standards as described in the Ontario Physical Activity Safety Standards in Education (OPASSE) and school board requirements for student to supervisor ratios.
- ☐ Assess transportation requirements and cost.
- ☐ Access gear that is compliant with school board safety standards, is well maintained, and is suitable for student use.
- ☐ Fill out, distribute, and collect signed forms as required by the school board's relevant policies and procedures.
- ☐ Have a parent/guardian meeting to inform parents/guardians of risks and risk mitigation strategies associated with the trip. NOTE: This is a perfect opportunity to get forms signed.

- ☐ Create a list of any known medical conditions and create associated risk management plans (for example for how to manage Type 1 diabetes on a canoe trip).
- ☐ Teach skills associated with the relevant outdoor education activities and assess student skill level.
- ☐ Ensure and document that students meet pre-requisites for participation in the relevant outdoor education activities (for example, passing a swim test).
- ☐ Leave a copy of the trip plan and list of participants with the school.
- ☐ Inform parents of how to contact the teacher/supervisors and how they would be contacted in the event of an emergency (for example, through the school).

DURING OUTDOOR EDUCATION ACTIVITIES

- ☐ Monitor the well being of the group. Check in with students with existing medical conditions and be attentive to potential conditions that may arise (for example, hypothermia, allergic reactions).
- ☐ Monitor group dynamics.
- ☐ Be responsive to shifting weather patterns; if in doubt, sit it out.
- ☐ Assess and respond to safety issues as they emerge.
- ☐ Debrief on any potential safety issues with all trip participants.

AFTER OUTDOOR EDUCATION ACTIVITIES

- ☐ Hold a teacher and supervisor debrief meeting to assess and document what went well with regards to risk management, equipment, etc. and what might be modified for the next trip.
- ☐ Hold a student debrief meeting to assess and document what went well and what could be changed for the next trip.
- ☐ Follow up on issues that arose during the trip.
- ☐ Celebrate! Reflect on how this trip made a difference in the lives of the students, teachers and supervisors, and, more specifically, yours.

Conversation Starters and Reflection Activities

What?

Conversation starters and reflection activities include questions, activities, and case studies related to risk management.

Why?

The intention of conversation starters and reflection activities is to initiate, deepen, and consolidate learning about risk management.

Who?

The conversation starters and reflection activities are for teachers to use to engage students in conversation.

When?

The conversation starters and reflection activities can be used BEFORE, DURING, and AFTER any outdoor educational activity.

How?

Teachers can use these conversation starters and reflection activities as presented, or adapt, or add to the examples provided, where appropriate. These activities may be used throughout a unit or as a component of a single lesson.

BEFORE an Outdoor Education Activity

HAVING A CONVERSATION ABOUT RISKS AND RISK MANAGEMENT

The term "risk management" is often heard when discussing how to ensure group safety during activities that take place either on or off the school site. These sample guiding questions may be used with students to start a conversation about risk and risk management.

- What do you think we mean by "risk management"?
- What are common risks that you may encounter during outdoor education?
- What are possible risks related to "x" (define the activity)?
- How can you minimize these risks?
- What are possible consequences of not participating in this activity?
- What can you do to ensure that all safety precautions are taken?
- What can you do as an individual to ensure that the activity is safe?
- What can you do as a group to ensure that the activity is safe?

THE LEMON THEORY

Present the Lemon Theory of risk management. In his booklet *Wilderness Crisis Management*, author James Raffan examines a three week canoe trip from Lake Timiskaming to James Bay. In June of 1978, twenty-seven boys aged 12–14 and four supervisors set off in four 22-foot canoes, voyageur style. Early one afternoon, a storm developed, and by the end of the day, 12 students and one supervisor had died.

Raffan argues that these deaths were completely preventable given the factors that led up to them. Raffan uses a "slot machine metaphor" (show students a photo of a slot machine) in which each factor leading to an accident is a "lemon." Once three or more lemons have been accumulated in a situation, a "jackpot," is hit which means an accident. Talk to the students about brainstorming possible lemons for an outdoor activity in order to create a culture of risk identification and mitigation during any outdoor activity.

EDGE EXPERIENCES

One goal of any trip or activity might be to challenge each person to develop his or her skills, confidence, and abilities. What each person recognizes as a challenge or risk during a trip or activity will vary, and what one person perceives as a risk may not pose a real risk (for example, sleeping with a spider in the tent).

How can everyone ensure each other's emotional and physical safety, as each person explores the edge experiences to help them grow and thrive?

SOFT SKILLS VERSUS HARD SKILLS

Each person has a different skill and comfort level for a given outdoor activity.

- Consider your personal skill and comfort level. What safety equipment would you have with you at all times during a trip, in case of an emergency?
- Would the same items apply for each type of trip, or would items change depending on the type of trip?
- What "soft skills" would be useful to the group, and how can they help in an emergency or prevent an emergency from occurring?
- What is the trip supervisor's role in risk management? How might this role change for a student who is acting as the "leader for the day"?

REAL VERSUS PERCEIVED RISK

There are often differences between real risk and perceived risk.

- What do you think are the real and perceived risks of this activity or trip?
- How can we reduce the real risks?
- How can we manage perceived risks?

EXPLORING RISK PERCEPTION AND ACTUAL HAZARDS: DROWNING DATA

An important way to understand the real risks involved in an activity is to look at data. For example, hundreds of people die from drowning in Canada each year. One common perceived risk is a person's ability to swim, however, there are a number of other real risk factors, or "lemons," that can lead to drowning. Understanding the real risks helps participants make better decisions and reduce risk.

Examining key publicly available data can contribute to making informed decisions about risk management regarding aquatic activities.

Risks Factors by Activity

The following data are taken from the 2016 Ontario Drowning Report.

The risk of drowning increases by the percentage below for each factor. For example, not wearing a personal flotation device (PFD) increases a person's chance of drowning during an aquatic activity by 88%.

While boating:

- Not wearing a PFD: 88%
- Consuming alcohol: 40%
- Capsizing: 35%
- Going on the water solo: 33%
- Falling overboard: 30%

While swimming:

- Unable to swim: 42%
- Swimming solo: 32%
- Consuming alcohol: 30%
- Heart attack or heart condition: 22%

According to the Office of the Chief Coroner of Ontario (2010), 96% of people driving a boat (with or without a motor) who drowned were not wearing a PFD. Among those whose swimming level was known, 40% were non-swimmers, and 34% of drowning victims were born outside Canada.

What the Data Reveal

Wearing a personal floatation device or a properly fitted life jacket is one of the best ways to reduce drowning risks while boating. Using a buddy system while swimming can also reduce the risk of drowning for those who know how to swim. Knowing how each factor increases the risk of injury or drowning can be used to develop relevant guidelines and determine the necessary equipment required to prevent drowning during outdoor education activities.

For example, students who have grown up without access to swimming lessons and pools or other bodies of water may need more awareness training regarding risks associated with aquatic activities. Determining appropriate safety equipment and strategies for outdoor education activities must also reflect the knowledge, experiences and abilities of the students.

Importance of Supervision When Near Water

From 1991 through 2014, more than 12,000 water-related deaths occurred in Canada.

Analysis of these data has revealed that only about 1% of the fatal drownings occurred under direct supervision of one or more lifeguards or instructors. Given these data, supervision provided by a qualified person is one of the key prevention practices that can be taken in order to increase water safety.

Adapted from the Canadian Drowning Plan (2017) and the Lifesaving Society.

CASE STUDIES FOR DISCUSSION

St. John's School – Lake Timiskaming Canoeing Tragedy (1978)

Background

The school's philosophy was to build character through challenges and tests. One activity organized by the school was a three-week canoe trip on Lake Timiskaming up to James Bay. Twenty-seven boys aged 12–14 and four supervisors set off in four 22-foot voyageur style canoes. Early one afternoon, a storm developed, and by the end of the day, 12 students and one teacher had died.

Causes of the Tragedy

- The supervisors had no itineraries for the trip and had never completed this trip before. One supervisor had no canoeing experience.
- The group had no lifesaving equipment or emergency procedures in place.
- Some of the boys did not know how to swim, and the supervisors did not know which boys knew how to swim. One supervisor did not know how to swim well.
- The last time anyone on the trip had done any canoeing was the previous autumn.
- There was no physical preparation or training for the trip.
- No one had received any first aid, canoe rescue, or lifeguard training.
- The new 22-foot canoes had been modified to allow for increased weight, which changed the center of gravity and balance of the canoes. This made them more unstable and difficult to manage.
- The trip started in the early morning after a night of travel, and the group did not eat a hot meal for breakfast or lunch.

What Can Be Learned

- The coroner's report concluded, "we feel that for boys from 12–14 years of age, this entire expedition constituted an exaggerated and pointless challenge." There are a few lessons that can be learned from this tragedy:
  - Challenges need to be designed that are appropriate for the age group and skill level of all the participants.
  - It is important to keep the goal in mind throughout an activity. While completing the journey is great, it is far more important for participants to experience the outdoors and learn at their own pace.
  - Precautionary measures such as training, equipment, and safety plans geared to the age of participants and location of the activity are key to increasing safety.

Reflections on the Tragedy

- Informed reflection and communication are foundational to effective risk management.

- It is important for teachers and students to learn from past tragedies, near misses, and lived experiences. Current risk management policies and practices have strong roots in this case.

- Never assume that adhering to guidelines, certifications, and policies will keep all participants safe. Good judgement, communication, reflection, local knowledge, and experience are key factors in the execution of effective risk mitigation prior to and during outdoor education activities.

Risk Management Scenarios for Discussion with the Students and Supervisors

Backpacking/Hiking – Backcountry

Celina is excited to go hiking for four days in the wilderness. She missed the training hike, but she is confident that she is ready for the trip. Her Girl Guides group used to walk the trails near her home, so she feels like she has the necessary experience, and she has brand new hiking boots and a backpack she got for her birthday. She will finally have the chance to show off her new gear to her friends!

Backpacking/Hiking – Local

Britt and Yuseff are looking forward to the training hike tomorrow. It will be amazing! After all, it is the same trail used by the track team for training. They know they can finish before the rest of the class and go to the local cafe for a snack while the rest of the class catches up. They will be back to the trailhead before the leaders notice that they are gone, and no one will ever know! The teacher mentioned that during the hike, each hiker should be within calling distance of people in front of and behind them. But if Britt and Yuseff walk just quickly enough at the beginning to get ahead, they can say they didn't hear anyone calling them. After all, it's not their fault everyone else is so slow.

Camping

Stella and Jarod tell their teacher that they smelled popcorn while passing in front of another students' tent. They are on an island in Algonquin Park. When the teacher approaches the tent, they can hear a few students talking inside. When the teacher questions them about food in their tent, they respond indignantly, "Do you REALLY think that a bear will swim over to the island, smell the food in this tent, and try to come in?!"

Camping – Winter

Ms. Knight's class is conducting their winter camping training on school grounds. In the afternoon, the temperature is around –5 °C when the students build their quinzees. Everything goes well, and the students eagerly go into their shelters at bedtime. They comment that the temperature "isn't too bad" and they're comfortable with a few layers of clothing. Around 11:00 p.m., the temperature begins to rise because of an approaching storm. At 2:00 a.m., it starts raining lightly and the temperature is about 2 °C. At 6:30 a.m., when Mrs. Knight begins to wake up, rain has been falling for several hours. The snow on the ground is melting, and the quinzees near her tent are collapsing. At 7:00 a.m., two girls stop at her tent. They say they're going to the school to use the bathroom, and their classmate is still sleeping in their quinzee. Upon their return, they see their semi-collapsed quinzee, leaving little space for their friend inside. When they wake her, she sits up quickly, and the quinzee collapses around her.

Kayaking

Lilian is packing for her kayaking trip, and is bringing her nicest t-shirts and shorts so that she looks good for photos that she plans to post later on social media. She worries that her personal flotation device (PFD) will give her ridiculous tan lines just before prom. She plans to wear tank tops at the campsite, to even out any tan lines. She isn't planning on wearing a hat either, despite her teacher's insistence that it is required while on the water. She looks ugly wearing a hat, and if she gets hot, she'll just splash herself with some water. The new tanning products she bought will give her a nice tan before prom. Her mom packs a hat in her bag the night before the trip, but Lilian takes it out after her mom says goodnight. She will never know.

Paddle Sports

Mortiz and Chad are super excited about the canoe trip. They are physically strong and they know they will be a huge help to their group during portage. At school they practiced until they could lift the canoe over their head in a single movement, and they are sure that they can carry a canoe and their backpacks over the portage in one trip. They are excited for the challenge. They failed the swim test today, because they thought it was a joke. After all, they are good swimmers; they have never needed a swimming lesson. The examiner claimed that they touched the bottom but it was too shallow and their feet dragged at the bottom. They can swim that distance using their arms only, and in no time. Who needs to use their legs anyway? The teacher has asked them to re-take the swim test in three weeks, before the canoe trip, but they will need to meet the lifeguard at the pool to practice their swimming techniques at least 5 times before then. Chad's mom will call the lifeguard to complain; the results are obviously wrong. The teacher is adamant that if they do not pass the test, they cannot go on the canoe trip.

DURING an Outdoor Education Activity

UNDERSTANDING THE RISK

Dangers cannot always be avoided, but teachers should plan for the greatest number of possible scenarios that may occur during an activity. Students and their parents/guardians must also be aware of the risks inherent in certain activities.

Here are some general questions that teachers can ask students before an activity, so they can better understand possible risks:

- What will we do before today's activity to promote our safety?
- What safety-related aspects of today's activity will each individual take responsibility for?
- What safety-related aspects of today's activity will we look after as a group?
- What safety-related aspects of today's activity will be the responsibility of the teacher and/or supervisor in charge?

RISK MANAGEMENT SCENARIOS

Here are a few scenarios that can be used to encourage discussions and reflection on various activities:

Backpacking/Hiking

Kiah and Elisapee worry about the next stage in their five-day hike in Killarney. Until now, they have successfully stayed with the group and feel stronger than they did at the beginning of the trip. The hiking shoes they bought last week before the trip are amazing! Tomorrow, they are climbing a high peak, which is a group goal and will be an amazing photo opportunity. They are starting to feel hot spots on their heels and blisters on their feet and their bags feel much heavier today. They set up their campsite for the day and unpack their bags. They discover that someone has put a large rock in each of their bags without their knowledge. They are almost certain they know who did it, and they hope it was a joke.

Bee Stings

Frank is on a canoe trip with his family. He is very allergic to bee stings. While he is exploring their campsite, he steps on a beehive in a fallen tree stump. He is stung twice, enough to cause a serious allergic reaction. His parents have no iridium or satellite telephone. They give him doses of Benadryl, and he makes it through the night without a respiratory emergency, but his breathing is still very laboured and strained. The next day, everybody is tired and unable to leave the campsite. They are happy that they brought extra supplies, because it will probably take an extra day to get back to their starting point.

Cross Country Skiing

A group of outdoor education students are excited about cross country skiing on a local trail system for the day as a school outing. The teachers are out on the trails checking in with students, and the students have been permitted to explore the trail system without direct supervision, provided they ski in groups of three. Late in the afternoon, a group of five skiers have already skied most of the trails and decide to try one last trail to finish off the day. Once out, they realize that the section of trail they have chosen is very hilly, and they have only 45 minutes before the bus comes to pick them up. As they race back, Natalia, Jose, and Julian stay together and quickly make progress. Unfortunately, Johan and Batisse find the freshly fallen snow sticking heavily to their skis and slowing them down. They reach a fork in the trail and realize they can't figure out which direction the rest of their group took. The trail is not marked at this spot. They call out to their group and blow their whistles, but they get no answer. They take a guess at which path will take them back to the base and go as quickly as possible. Fortunately, they arrive a few minutes after the rest of their group, but their friends ahead of them had no idea that they were lost on the last part of the trail, which causes some tension at the end of an otherwise fun day.

Heat

Anjalou is participating in a canoe trip with his grade 12 class. It is an exceptionally hot day at the end of September, and the group has paddled in the sun all day. The teachers reminded students to drink water many times during the day and encouraged the students to go swimming to cool down when they reached the campsite. Anjalou, always the joker, has decided that instead of swimming he is going to make an elaborate costume with a cape. He and his friends make the whole group laugh with their joking around. Anjalou is sweating profusely, however, and even though he is carrying his water bottle, his team leader has noticed that he has not had anything to drink. She asks him if he has had some water recently. He answers that he is doing okay. A few minutes later, she reminds him again to take a drink, but he waves it off, saying he doesn't feel like it. At supper, Anjalou is very quiet, does not want to eat anything, and says he isn't hungry. After everyone finishes their supper, Anjalou heads towards the "thunder box" (the toilet) saying he doesn't feel very well. Another teacher goes over to see how he is feeling and discovers that he's had only half of his water bottle since breakfast, and he is no longer sweating. He feels dizzy and has a severe headache.

Paddle Sports

Your group arrives at the last portage of the day. After completing it you only have a short distance to paddle before reaching an isolated campsite big enough for the whole class. On other nights, your class was divided into two smaller groups. You've heard from past students that this site is the best part of the trip and marks the end-of-trip celebration before paddling out on the final day. The paddle for this final stretch starts in a narrow passage, but as your group approaches open water, it is obvious that the winds are picking up significantly. There are whitecaps on the water. In one canoe a girl is trembling with cold and is not communicating very clearly. Everybody is wet after a day in the rain and eager to set up camp for the night. There is a small outcropping nearby where the group can stop and make a decision, but it doesn't look big enough to fit the whole group. Night will fall in three hours. Your group needs to quickly make several decisions.

Swimming

The class has been kayaking along the Georgian Bay shoreline all day. When they make camp, everyone is tired, hot, and keen to go swimming. The supervisors who are designated as lifeguards are still setting up their tents when they hear splashing water and the sound of students jumping into the water. They approach the water and are surprised to see a large number of students in the water. When the supervisors express their concern, the students say everything is fine, because a student in the group has just received his lifeguarding certificate and cleared the area before students entered the water.

AFTER an Outdoor Education Activity

CULTURE OF SAFETY-MINDEDNESS

Before participating in [name of outdoor education activity], we spoke of creating a culture of safety-mindedness.

- Think of three ways that you demonstrated a culture of safety-mindedness throughout the activity.
- Think of a situation where you may not have paid enough attention to your safety or that of the people around you, and describe what you would do differently next time.
- What safety-related aspects of today's activity did you take responsibility for?
- What safety-related aspects of today's activity did the group take responsibility for?
- What safety-related aspects of today's activity did the teachers and/or supervisors in charge take responsibility for?

JOURNALING

Have students choose a particular incident that occurred on the trip or during the activity that can be used to generate good conversations and reflections to deepen their learning about risk management. These conversations can be a challenge but are invaluable in reducing risks during future activities. Identifying lemons and near misses allows students to discuss safety and consider future actions without anybody feeling blamed for any one incident. If an incident merits being reviewed and discussed but has the potential to be controversial, have students write confidentially about the experience in their personal journal.

EMERGENCY KIT – ART ACTIVITY

Have students prepare an imaginary "emergency kit" based on their trip experience. They can choose real items, pictures from the Internet or magazines, or metaphorical items that represent something they had or wished they had on the trip. Their kit can represent equipment, general (soft) skills, or specialized (hard) skills that they had or wished they'd had on the trip, individually or as a group, to help them in various situations. Their kit can also include items they would bring the next time in case of future emergencies. Ask each student to present their kit to the class. Seeing what everybody put in their kit can help foster great discussions.

COMPARE AND CONTRAST

During most trips, the class is divided into smaller groups. Choose a trip experience common to all the students (for example, a thunderstorm while at the campsite or on the water). Have students work in pairs (one from each of the smaller groups) to establish a timeline of the responses to the incident. Have them compare their responses in terms of leadership, group reaction, equipment used, techniques used, choices made, communications, etc. Record these in one column of a chart. In a second column, record students' descriptions of the ideal responses. Once finished, have each pair of students compare their answers with another pair.

RISK MANAGEMENT PLAN

After experiencing the first field trip of the season, outline the next field trip. Give students headings for a typical risk management plan that you, as a teacher, would have to provide to your administration. Have students prepare their own risk management plan for the next trip. This will allow them to reflect on their first experience and apply their new learnings to the next trip.

RISK MANAGEMENT SCENARIOS

Based on their experiences over the course of the semester, have students create fictional risk management scenarios for an upcoming field trip and share them with the class. What kinds of activities and risks should they consider? What might students think of or do on a trip that may pose a risk? What can the teachers or supervisors do – or not do – that might pose a risk?

Lesson Plans

This section provides sample lesson plans about safety during outdoor education activities. The lessons are independent of each other. Educators may incorporate each lesson into a teaching unit corresponding to the theme presented in the lesson.

These lesson plans may also be used to support the Healthy Active Living Education (HALE) courses including the Healthy Living and Outdoor Activities (PAD) focus courses. The Healthy Living and Outdoor Activities (PAD) courses have no prerequisites for Grades 9–12. Grade 10, 11, or 12 classes may be made up of students who are taking the class for the first time or have taken a PAD in a previous year. As such, these sample lesson plans do not target a specific grade. They can be used each year depending on class make-up. Educators should use their professional judgment to choose the appropriate lesson plan for their students and if necessary, adapt them appropriately to student needs.

During planning, educators should take into account the scope and depth of the overall and specific expectations for each respective grade. Please note that the overall and specific expectations for the PAD course are the same as those of the HALE course at the same grade level (for example, PPL3O and any focus course will all use the same set of expectations).

Each lesson plan has a rubric that supports an assessment for learning. An assessment strategy is suggested for each lesson, which may be adapted or replaced as necessary.

Sample success criteria are presented as well. Criteria for assessing knowledge and skills regarding safety measures during outdoor educational activities should be co-created with the students at the beginning of a lesson. Please review these criteria with the students before having them complete the assessment activity and use the criteria to provide feedback based on the learning goals.

Backcountry Evacuation

Lesson Overview

During this lesson, students will learn how to respond to an emergency in the backcountry and think critically about how to prevent such situations.

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Ontario Physical Activity Safety Standards in Education

Activities:

- Outdoor Education (Canoe Tripping)

Tools and Resources:

- Concussions
- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers

Others:

- Risk Management

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Materials

- Exit Cards
- Flip chart (or other large pieces of) paper
- Markers
- Projector (as needed for slides/ information)
- Slide show (optional: create slide presentation of activity information in text boxes in the Action)
- Whiteboard and whiteboard markers

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to apply safety rules and procedures during outdoor education activities. For example, success criteria might include:

- I can transfer my knowledge about group and individual behaviours to a new context in an emergency situation and during an evacuation.

After the activity, review the co-created criteria with students, and then have them complete their exit cards.

Assess students' responses during the class discussions throughout the scenario 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 backcountry safety, and answer any remaining questions.

MINDS ON

Suggestion: Create a slide show (for example, a PowerPoint presentation) with each part of the following story/scenario on a separate slide. (There is one part per text box, below and in the Action.)

Have a volunteer read the following scenario aloud.

> It was a cool September day, around 15 °C, and a group of students were on their third day of a canoe trip on the Magnetawan River. They ate a breakfast of oatmeal. It had rained the night before, and the group was preparing for their first portage of the day: 350 meters from Trout Lake to Beaver Pond.
> At 10:35 a.m., when the group arrived at the destination, Michelle slips while portaging the wanigan (kitchen box). You are behind her and see her fall and hit her head on a rock.

Ask the class, "If you were the student who saw her fall, how would you react in this situation?"

Possible answers:

- Go get a teacher or supervisor.
- Stay with Michelle.
- Keep Michelle still, and check that she is breathing.

ACTION

Continue with the scenario and story. Have volunteers read one story/scenario part at a time (one per text box). Pose the question that follows and corresponds to each box, and have students discuss it. Possible correct answers are given for each.

> One of the teachers or supervisors keeps Michelle's head immobile while another asks her questions as she regains consciousness. Michelle says her fingers tingle and she cannot feel her feet. The teacher suspects a spinal injury.

Ask, "What could we do to help in this situation?"

Possible answers:

- Go find a blanket or jacket.
- Help the teachers and supervisors to take notes.
- Keep the group calm and out of the way.

A supervisor calls for help on the satellite phone and gives the coordinates of the accident. She tells the group a helicopter is on the way. The teachers and supervisors need to stay with Michelle. However, the helicopter cannot land on Beaver Pond.

Ask, "What could we do to help at this moment in the situation?"

Possible answers:

- Identify a location on Trout Lake where the helicopter can land.
- Have the students spread out along the trail, making sure they are all within eyesight or sound of each other, to guide the rescuers.

The helicopter lands on Trout Lake at 12:40 p.m. The only landing spot is 50 meters from the end of the portage. The rescuers reach Michelle and put her on a spinal board. They carry her to the lake and then put in her in a canoe to take her to the helicopter. The rescuers, Michelle, and a supervisor fly to the hospital in Sudbury.

Ask, "What should happen next in this scenario?"

Possible answers:

- Take care of the rest of the group.
- Complete a review of the evacuation.

During the review, Emile reports that he heard Michelle say she didn't have anything to eat at breakfast because she dislikes raisins. He also heard her say she felt faint when they were paddling the canoes across the lake, before the portage.

Abigail reports that Michelle was feeling homesick and didn't want to be on this trip.

Meanwhile, doctors at the hospital request X-rays and think Michelle may have a small spinal fracture. The X-rays show there is no injury. Her parents have been notified so they can come pick her up, and obviously she will not participate on the rest of the trip.

Ask, "How might Michelle's accident have been prevented?
Who in this scenario had responsibility for preventing the incident?"

Possible answers:

- The teachers and supervisors could have ensured all students ate breakfast / were feeling well.
- Michelle should have eaten breakfast.
- Michelle should not have been carrying the box if she had been feeling faint, or at least asked for help.
- Michelle, the people she talked to, or Emile could have mentioned to the teachers and supervisors that Michelle was feeling faint.
- Emile could have encouraged Michelle to eat a snack or something else for breakfast.

CONSOLIDATION

Answer any questions students may have. Then have students complete their exit cards.

NOTES TO TEACHERS

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

EXIT CARD

Backcountry Evacuation

What kinds of group and individual behaviours are useful in an emergency and evacuation?

What kinds of group and individual behaviours are NOT useful in these situations?

Teacher Comments:

Campsite Checklist

Lesson Overview

During this lesson, students will learn how to evaluate the safety of a campsite during a local camping trip.

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Ontario Physical Activity Safety Standards in Education

Activities:

- Outdoor Education (Camping- Local)

Tools and Resources:

- Concussions
- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers

Others:

- Risk Management

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Materials

- Campsite Safety Checklist for each student or group (double-sided)

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing the knowledge and skills needed to establish and maintain a safe campsite. Consult the rubric below and checklist at the end of this lesson for sample criteria.

After the activity, review the co-created criteria with students, and have them complete the Campsite Safety Checklist.

Collect and review students' completed checklists. Use the following rubric and a master checklist 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 campsite safety, and answer any remaining questions.

CHECKLIST

Campsite Safety

Criteria: I can evaluate the safety of the campsite.

DETAILS	YES	NO	SOMETIMES	COMMENTS
I can verify that safety measures have been implemented properly or if improvements are required.				
I can identify problems related to the campsite's safety.				
I can make suggestions to address the safety issues.				

MINDS ON

During a local camping trip, meet with the students and ask the following question: “How safe are we during this trip?” Discuss generally as a group.

ACTION

Have students work in small groups providing each group with a copy of the Campsite Safety Checklist. After reviewing the activity instructions, have the groups walk around the campsite to see if they can check off items on the list. Encourage them to comment or ask questions.

CONSOLIDATION

After students complete the checklist, ask them to identify any safety issues with the campsite. Ask students what the group can do to improve safety? Encourage them to suggest and make the improvements.

NOTES TO TEACHERS

Note any missing information or gaps in understanding of campsite safety to address in preparation for the next trip.

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

CAMPSITE SAFETY CHECKLIST

Name(s): _____

	Adequate	Needs Improvement	Problematic	Comments or Questions
There are no dead branches above the tents.				
Tents are a good distance from the fire.				
Fires are surrounded by stones.				
There are no dead branches above or near the fire.				
The firewood is stacked neatly.				
The fire was put out and dampened before everyone went to bed.				
The latrines are a good distance from the campsite and water.				
It is easy to wash hands with soap, and we do so frequently.				
The camping stoves are on flat ground and there is enough space to work around them.				

	Adequate	Needs Improvement	Problematic	Comments or Questions
The food is hung in a tree during the night or stored in an animal-proof container.				
The campsite is neat; no food is left out.				
There are no tripping hazards.				
The drinking water or water filter is identified and easily accessible.				
The first aid kit is accessible and the group knows where it is.				
The wood saws are safely put away when not in use.				
The group knows what to do if a person is lost.				
The group members work together in a positive and constructive manner.				
The group knows what to do in the event of an accident or evacuation.				
The teachers/supervisors are notified in the event of a problem with equipment.				

Climbing – Challenge by Choice

Lesson Overview

During this lesson, students will understand the importance of communicating during height-based and rock climbing activities and behaving responsibly to build trust in a group, and evaluating risks in order to make decisions in situations involving challenges.

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Ontario Physical Activity Safety Standards in Education

Activities:

- Climbing (Outdoor Rock Climbing)

Tools and Resources:

- Concussions
- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers

Others:

- Risk Management

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Materials

- Blindfold (optional)
- Exit Cards

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to apply safety rules and procedures during outdoor education activities. Consult the exit card at the end of this lesson for suggested criteria.

After the activity, review the co-created criteria with students, and then have them complete their exit cards.

Collect and review students' completed 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 climbing safety, and answer any remaining questions.

MINDS ON

Have students think of a situation in which they trusted a person who did not respect that trust. How did that make them feel?

Have students think of a situation where they trusted someone and that trust was respected. How did that make them feel?

ACTION

Students will perform a trust fall activity, in which they form a circle and take turns catching a person standing in the middle of the circle. Before starting this activity, discuss consequences of not taking the task seriously or failing to catch the person. Help students make connections between trust and betraying a trust and how they would feel in that situation, and the potential for injury.

Before beginning the activity, review the following communication protocol for establishing and maintaining trust:

- Five ways to establish a relationship of trust/action:
  1. Ask for trust.
  2. Prepare to accept the responsibility associated with asking for someone's trust.
  3. Ask permission to perform the action.
  4. Give someone permission to perform the action.
  5. Recognize that the action is finished and that trust is no longer required.
- Basic communication protocol to establish and maintain trust:
  1. When the student in the middle is ready to fall, they say, "Ready to fall."
  2. The members of the group forming the circle answer, "Ready to catch."
  3. The student in the middle says, "I'm falling."
  4. The group members forming the circle answer, "Let yourself fall."
  5. All students remain quiet when the student in the middle lets themselves fall, in order to hear any communication.
  6. Once the student in the middle is finished, they say, "I've fallen."
  7. The group members say, "You did it!"
- Each student may choose the opportunity to be the student in the middle or not.
- For larger groups consider creating more than one circle and stand between each and circulate to monitor participants' application of safe behaviours and procedures.

When everyone understands the activity protocols, have students work in groups of 6–7 to perform the trust activity. One student stands in the middle of the circle with their eyes closed and arms crossed over their chest. The other students form a circle, bracing their feet one in front of the other, with their arms extending forwards to push gently on the student in the middle. The student in the middle keeps their feet still and allows themselves to fall in the circle. Have a group try the task. Provide feedback to make sure the instructions are understood and the task is done safely.

Make it clear that each member of the group can choose whether or not they want to have a turn in the middle. Have students name a number of factors that may influence the person's decision, such as:

- Previous experience
- Lack of trust in other group members
- Fear of falling/physical fear

All students have different lived experiences and, as such, each person will have a different level of confidence and state of mind. It is important to respect everyone's choice to participate or not. Ask: "How can we build trust and support in the group so that all participants might build their confidence and courage to try the activity?

CONSOLIDATION

Guide a whole-class discussion using the following questions.

- What factors made this activity safer?
- What made it easier or harder to trust your classmates?
- What elements of this activity can we use in our climbing activity?
- Why does communication play such an important role in safety during climbing?

After the discussion, have students complete the exit card (consult the end of this lesson).

NOTES TO TEACHERS

Each group must be carefully considered before implementing a trust activity in which there is a possibility of a real fall or harm. An activity like this should never be a first choice with a new group of students; it is a significant activity for creating and/or reinforcing trust bonds in a group for the purpose of performing more complex, collaborative tasks. An activity like this should be taught and supervised by a teacher

Here are a few other tips:

- Use multi-purpose mats and ensure there is enough space between the mats and any walls or equipment so students cannot fall into them.
- Make sure all students are standing on the floor at all times; do not let the students allow a fellow student to fall from any point higher than the ground. The goal of a "trust fall" is not for students to show they can catch someone. These are communication activities that build full trust in the group.
- The teacher must always be present and make sure students can hear instructions throughout the activity. Stop the activity if there is a problem or lack of communication or if a group of students tries to work too quickly.

Variations of this activity without falling can be used as precursors to trust falls (for example, the Mouse Trap Trust Sequence Activity). These activities can have a perceived medium to high risk but are low risk when facilitated under supervision.

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

EXIT CARD

Climbing – Challenge By Choice

How can I evaluate risks in order to take the appropriate safety measures?

What are basic communication methods for establishing trust with classmates?

How can I create and maintain trust with my classmates during a rock climbing activity?

Teacher comments:

Communication during White Water Canoeing

Lesson Overview

During this lesson, students will examine the challenges in communicating during canoeing activities in white water environments, learn the basic dynamics of how water flows, create a system of communication tools to overcome challenges and manage risks associated with a white water environment, and practice communication procedures to increase safety in white water environments.

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Ontario Physical Activity Safety Standards in Education Learning Goals

Activities:

- Outdoors (Canoeing Moving Water)

Tools and Resources:

- Concussions
- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers

Others:

- Risk Management

Materials

- Chalkboard or whiteboard, chalk or whiteboard markers
- Learning space (inside or outside) with potential to move items around
- Paddle(s)
- Two pieces of 4.5- to 6-meter-long rope or cordage for demonstration
- Whistle

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to apply safety rules and procedures during outdoor education activities. Consult the checklist at the end of this lesson for sample criteria.

During the Action, have students apply their knowledge of the basics of water flow (laminar flow and helical flow). Ask them to also demonstrate the appropriate manual signals, paddle signals, and whistle signals for communication and giving instructions.

Use the co-created criteria and the completed checklist 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 outdoor safety, and answer any remaining questions.

MINDS ON

Have students think about the characteristics of a river environment and share their thoughts in a small group. Pose the following question prompts:

- What does the water sound like?
- What does the water look like?
- How does the water move? Does this movement seem organized or disorganized?

Give students a few minutes to discuss these questions, and then have them share ideas as a class.

Next, guide a class discussion with these questions:

- How do the physical and natural characteristics of a river environment pose challenges to our communication while on the water?
- For people ahead of or behind us, is it easy or hard to understand the instructions and communications about safety during learning activities on the water?

ACTION

Basic Water Flow Dynamics in a River

Set up a straight mock river by placing two ropes or cords parallel to each other on the floor, with enough space between the two ends so all students can move from one end to another without obstruction.

Have students "spill" into the river that was created. Once they're "in" the river, direct them to move slowly and safely throughout the exercise. Have them demonstrate the way water flows in the straight river. They should understand that it moves more or less in a straight line. Tell them this kind of straight flow is called "laminar flow." Explain that the principal characteristic of laminar flow is movement in a straight line; when water moves towards an obstacle, like the shore or a rock in the river, it rebounds and eventually returns to a straight line of flow.

Next, change the configuration of the "river" to add a bend. Have students repeat the exercise. This time, ask them to act like laminar flow by only moving in a straight line. They will "bounce off" the "banks" of the river wherever there is a curve or a change in the water direction.

Add other curves to the river and repeat the exercise. Have students imitate laminar flow in this water.

Next, present the concept of helical flow in rivers. This includes all flow that is not in a straight line. It is often possible to observe helical flow behind rocks that emerge from the river, along the shores, or in places where white water in laminar flow meets stationary water, which is called an "eddy." Helical flow is disorganized, and it can be more difficult to determine its direction.

Create a new "river" and place a large object in the middle. Have students explain what might happen when the laminar flow of water meets the rock. This water continues downstream roughly in a straight line, but the water is almost calm behind the rock (an eddy), and on each side of the rock helical flow (disorganized water) occurs.

As the configuration of the river changes, and the students understand the different flow of water in the river, integrate the associated elements involved in using paddles. Ask them to guide their boat according to the river configuration and the principles of laminar and helical flow.

The last objective of this activity is for the students to gain the basic knowledge to move around on the river and to determine areas that may be safer and areas that should be avoided based on what they understand of laminar and helical flow.

The following on-the-river communication exercise integrates well with this lesson on the principles of water flow of a river.

Ask the group the following question:

"What would happen if we all moved downstream at the same time?"

Answer: The people and their vessels will move in different directions, like bumper cars, and it will be difficult to maintain control and complete a rescue, if required. It is preferable to have one boat following the other on the water so we can complete a rescue in the event someone falls overboard.

Communication on the River

Present the following situation to the group:
We are all on the river, and we want to control our movement downstream so we stay safe and have fun on the water. Given the behaviour of the water and the kinds of flow that occur in the river, we need a method of communication we can use while moving as a group on the river. This will be important when we cannot hear each other over the noise of the water."

Next, present the following instructions to the group:
We have the following tools for communication on the water:

1. A whistle
2. Our hands
3. A paddle

Basic whistle signals:

Our whistles are attached to our personal flotation device (PFD). We can use them to attract people's attention or to signal a possible emergency. We should never use our whistles for any other reason.

The basic whistle communication signals that can be used during white water activities are:

- Single whistle blow – Raise your head and look around you, because someone is trying to get your attention.
- More than one whistle blow – There is a problem and we should move quickly towards the shore and wait for other instructions.

Basic Hand Communication:

Each communication is composed of two parts:

1. A question
2. An answer

- An arm straight up in the air– GO, you can keep moving on the water
- Two arms extended to the side – STOP, do not move.
- Point in a direction – DIRECTION TO GO IN (you must always point in a "positive" direction and not towards something you'd prefer the paddler to avoid).

If you need to communicate more, you can use your paddle instead of your hands. The same rules apply.

Basic Paddle Communication:

- Paddle straight up in the air – GO
- Paddle horizontal across your head – STOP
- Point in the direction with the paddle – DIRECTION TO GO IN

The last manual signal is a personal safety signal. Do not forget that a communication is composed of two parts: a question and an answer. To ask "EVERYTHING GOOD?" or to answer "EVERYTHING IS GOOD," the paddler forms a fist on their head so their arm forms an O. This is the international river signal for "OKAY." This signal can be used after a boat capsizes to try to figure out if the people in the water are hurt or need help.

It is now time to practice river signals. Ask the students to communicate with these signals in class or outside. Once the students have had a chance to practice, take them back to the river that was created earlier. Ask them to communicate in order to stay safe while moving on the river.

CONSOLIDATION

Visualizing basic river dynamics and practicing river communication skills in a variety of settings will lead to better on-water communication and river comprehension for everyone.

Have students present a mock river either on the ground or on a chalkboard/whiteboard and explain where the water is moving and what they should be aware of.

Extend this by asking the students to describe the safest way to navigate their specific river and what obstacles and communication might be necessary to maintain the group's safety.

NOTES TO TEACHERS

There are many resources on river communication. The Ontario Recreational Canoeing and Kayaking Association and Paddle Canada are excellent places to find information and links to white water canoeing resources.

Any educator looking to extend their river knowledge and water reading skills should consider taking a white water rescue training course offered by a qualified instructor through a recognized organization. This would be a great asset to teaching white water principles.

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

CHECKLIST

Communication during Canoeing Activities in Open Water

Criteria:

- I can apply my knowledge of basic water flow dynamics.
- I can use communication procedures for whitewater safety.

Basic Water Flow Dynamics

STUDENT NAMES:													
I can demonstrate an understanding of laminar flow.													
I can demonstrate an understanding of helical flow.													

Communication procedures for whitewater safety

STUDENT NAMES:													
Hand Signal – OK													
Hand Signal – Go													
Hand Signal – Stop													
Hand Signal – Direction to Go In													
Whistle – Look!													
Whistle – Emergency													
Whistle – Emergency Answer													
Paddle Signal – Stop													
Paddle Signal – Go													
Paddle Signal – Direction to Go In													

Cross Country Skiing and Snowshoeing

Lesson Overview

During this lesson, students will learn what to wear, bring, and do to manage risks when cross country skiing or snowshoeing.

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Ontario Physical Activity Safety Standards in Education

Activities:

- Skiing (Cross Country)
- Snowshoeing

Tools and Resources:

- Concussions
- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers

Others:

- Risk Management

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Materials

- Exit Cards
- Risks and Precautions Worksheet

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to apply safety rules and procedures during outdoor education activities. Consult the Risks and Precautions Worksheet and exit card at the end of this lesson for sample criteria.

Students will complete the worksheet as part of the Action. After the activity, review the co-created criteria with students, and then have them complete their exit cards.

Collect and review students' worksheets and 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 safety rules and procedures in cross country skiing and snowshoeing, and answer any remaining questions.

MINDS ON

Give each student a copy of the Risks and Precautions worksheet. Have students work in small groups to brainstorm one possible risk they may encounter during a two-hour ski or snowshoe trip. Consult the Notes to Teachers section for examples of risks and precautions.

If students are struggling, give a hint, such as, "Note these are activities that occur in cold conditions."

ACTION

Using their worksheets, have students work through a Think-Pair-Share. First, have them think about possible risks associated with skiing and snowshoeing and start filling out their worksheet. (Consult the chart in Notes to Teacher for examples.)

Next, have students work in pairs to compare what they wrote, add to their worksheets, and identify any questions they may have.

Then have students work in small groups or as a whole class and share what they wrote on their worksheets and discussed in pairs.

If the topics have not yet come up, ask, “What are hypothermia and frostbite? What do you know about them?” Allow 5 to 10 minutes for students to complete this part of the worksheet.

CONSOLIDATION

Review any questions that came up during the Think-Pair-Share. Then have students complete the exit cards.

NOTES TO TEACHERS

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

Examples of risks and precautions:

RISK	WHAT TO WEAR, BRING, AND DO
Getting lost	Trail maps, telephone/GPS, compass
Sunburn	Sunscreen
Hypothermia	Layer clothing to have the option to add or remove layers
Superficial/deep frostbite	Cover exposed skin
Situation requiring first aid	Small first-aid kit
Dehydration	Water bottle
Hunger	Snacks (for example, dried fruit and nuts)
Bad weather, winter storm	Check the weather before leaving
Strained/sprained muscles	Stretch before going
Going over ice	Avoid going on the ice. Use known trails with guides who know how to traverse ice safely.

RISKS AND PRECAUTIONS WORKSHEET

Name(s): _____

In the left column, list possible risks related to a two-hour skiing or snowshoeing activity. In the middle column, list things you can bring, wear, and do to mitigate each risk. In the right column, write the questions you have regarding each risk and ways to mitigate them.

Risks	Bring/Clothing/Do	Questions

Hypothermia and superficial/deep frostbite: You need to know the signs and symptoms!

Using trusted online sources, research the signs, symptoms, and treatments for each.

Signs of hypothermia:	Treatment for hypothermia:
Signs/symptoms of frostbite:	Treatment for frostbite:

EXIT CARD

Cross Country Skiing and Snowshoeing

What should you have in your backpack for a cross country skiing or snowshoeing activity?

What should you do before taking part in a cross country skiing or snowshoeing activity?

Why is it important to watch for signs of frostbite on other members of the group?

What parts of the body are most likely to experience (superficial or deep) frostbite?

EXIT CARD (CONTINUED)

Cross Country Skiing and Snowshoeing

What are the warning signs of hypothermia?

What are the signs of advanced hypothermia?

Teacher Comments:

Hot Weather Preparedness

Lesson Overview

During this lesson, students will learn about and consider the risks of participating in outdoor activities in hot weather.

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Ontario Physical Activity Safety Standards in Education Learning Goals

Tools and Resources:

- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers
- Temperature

Others:

- Risk Management

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Materials

- Digital devices (for example, tablets, telephone, computer) with Internet access
- Exit Cards

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to apply safety rules and procedures during outdoor education activities. Consult the exit card at the end of this lesson and the following for sample criteria:

- I know how to select appropriate equipment in order to reduce the risks caused by heat during outdoor activities in hot weather.
- I can justify my choice of equipment for reducing risks caused by heat during outdoor activities in hot weather.

After the activity, review the co-created criteria with students, and then have them complete their exit cards.

Collect and review students' 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 hot weather preparedness and safety, and answer any remaining questions.

MINDS ON

Present the following scenario to the students:

"It is 26 degrees Celsius, the weather is sunny, and your outdoor education class is on a hiking trip on the Bruce Trail. You are on rocky terrain, going uphill and downhill a lot, and there are few trees. The water of Georgian Bay is shining under the sun. Luke falls a little behind, and you stay with him for a moment. He appears to be sweating profusely and complains of having cramps. What is happening and what should you do?"

ACTION

Ask students to search online for answers from credible sources to the following questions:

- What are the signs and symptoms of heat exhaustion?
- What are the signs and symptoms of heat stroke?
- What can you do on this trip to reduce your risk of heat exhaustion or heat stroke?
- What would you do if you suspected that a friend was suffering from heat exhaustion or heat stroke?
- Is it possible to suffer from heat exhaustion or heat stroke in winter or cold weather?

After students have individually answered the questions, have them discuss their answers in small groups or as a whole-class.

CONSOLIDATION

Review the co-created criteria with students from the beginning of the lesson. Then have them complete exit cards.

NOTES TO TEACHERS

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

EXIT CARD

Be prepared for hot weather!

What would you add to the equipment list to be better prepared to prevent heat stroke or heat exhaustion during an outdoor education trip? Justify your choices.

EQUIPMENT	JUSTIFICATION

Teacher Comments:

Know the Code – Be Safety-Conscious on the Slopes!

Lesson Overview

During this lesson, students will review the main safety standards for alpine skiing and snowboarding and apply the Alpine Responsibility Code to situations that skiers and snowboarders may encounter.

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Ontario Physical Activity Safety Standards in Education Learning Goals

Activities:

- Skiing (Alpine)
- Snowblading
- Snowboarding

Tools and Resources:

- Concussions
- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers

Others:

- Risk Management

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Materials

- Question and Answer Sheet
- The Canadian Ski Patrol's Alpine Responsibility Code

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to apply safety rules and procedures during outdoor education activities.

Multiple Choice Questions

Encourage the students to complete the Multiple Choice questions in the Action section in order to check their knowledge of the Alpine Responsibility Code and how to behave safely on the slopes.

Exit Card

Review the co-created criteria with students. Invite students to reflect on the number of Multiple Choice questions they answered correctly and then complete the exit card from the Consolidation section.

Use the sample criteria below to assess the students' learning and provide feedback.

- I know what I can do to reduce safety risks on the slopes.

Collect and review students' answers to the Multiple Choice questions and exit cards. Use the co-created criteria and answer key questions 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 alpine skiing safety, and answer any remaining questions.

MINDS ON

Alpine skiing and snowboarding are fun activities for students and the general public on ski slopes across Ontario and beyond. Tell students that most injuries that occur during alpine sports are caused by collisions on the slopes or by excessive speeds in reduced-speed zones. Most common injuries (for example, knee sprains, broken bones, dislocations) can be prevented by following a set of principles and rules that alpine enthusiasts should know well before participating, called The Alpine Responsibility Code.

ACTION

Tell students that the Alpine Responsibility Code was created to help manage visitors' experiences and risks in the front and back country so that everyone can ski and snowboard while preventing injuries or accidents. It acts as a 'traffic code' for alpine skiing and snowboarding.

Review the Alpine Responsibility Code with students. Tell them they should review it occasionally before going alpine skiing or snowboarding.

After reviewing the principal code elements, have students complete these Multiple Choice questions to check their knowledge of the code and their readiness to put the Code into practice in real situations.

Multiple Choice Questions

Choose the correct response for each question:

Choose the correct response for each question:

1. **On the slopes, it's __** (The correct answer is B.)
   a. every man for himself.
   b. important to be aware and courteous of those around you.
   c. necessary to live in constant fear of getting hit.

2. **Knowing how to stop __** (The correct answer is B.)
   a. is hard. I never learned and don't need to.
   b. is necessary to maintain control and avoid other people and objects.
   c. is not as fun as hitting sick jumps.

3. **People ahead of you __** (The correct answer is B.)
   a. are fun to spray with snow.
   b. should always get the right of way.
   c. never get the right of way.

4. **If you need to stop and wait for your friend __**
   (The correct answer is C.)
   a. you stand in the middle of the run so he or she will see you.
   b. you hide behind some trees so you can jump out and surprise them as a joke.
   c. you stop to the side of the run or trail as to not obstruct other people.

5. **Before starting downhill or merging onto a trail, __**
   (The correct answer is A.)
   a. shoulder check, look up, and yield to others.
   b. scream, "HEY GUYS WATCH THIS!"
   c. go as slow as you can, or even just go home.

6. **If you witness a collision or an accident, __** (The correct answer is B.)
   a. let the victim know you have called Ski Patrol, then you're free to go.
   b. stay with the victim until Ski Patrol arrives and identify yourself as a witness.
   c. wait for a Ski Patroller to ski by and notice the accident.

7. **To prevent runaway equipment, __** (The correct answer is B.)
   a. use proper devices like ski breaks and leashes.
   b. wear your equipment at all times.
   c. that's a silly question – the equipment can't run.

8. **Signs and warning markers are there for you to __**
   (The correct answer is B.)
   a. smack with your poles and shred underneath.
   b. observe and obey.
   c. take selfies with.

9. **Closed trails and closed areas are __** (The correct answer is A.)
   a. closed for a reason, so it's important to stay out.
   b. where you find the best powder, and cliffs aren't really a concern.
   c. where all the bears hibernate.

10. **Do not use the lifts or terrain if you are __** (The correct answer is C.)
    a. wearing a helmet.
    b. chewing gum.
    c. impaired by drugs and alcohol.

11. **If you don't know how to load or unload from the lifts, you should __**
    (The correct answer is A.)
    a. ask a liftie because they're really friendly, nice people.
    b. figure it out as you go.
    c. walk up the hill.

12. **Green runs are __** (The correct answer is B.)
    a. groomed better, so they are better for racing.
    b. all considered slow zones.
    c. where you eat French fries and pizza.

13. **The role of Ski Patrol is to __** (The correct answer is B.)
    a. enforce.
    b. educate.
    c. triangulate.

14. **Just like when driving a car, on the slopes you must _**
    (The correct answer is A.)
    a. always shoulder check.
    b. blast your tunes extra loud.
    c. defrost your skis or snowboard before use.

POINT CALCULATION:

1–5 correct answers:
Study the Alpine Responsibility Code before you go on the slopes.

6–10 correct answers:
You know some items but should review the Alpine Responsibility Code so you are able to act safely on the slopes.

11–14 correct answers:
You are good to go on the slopes! Review the Alpine Responsibility Code regularly.

These questions were extracted from the Alpine Responsibility Code Quiz of Big White Ski Resort. https://www.bigwhite.com

CONSOLIDATION

Ask students who are experienced skiers to give concrete examples of situations in which they observed people not respecting the Alpine Responsibility Code, or situations where novice skiers or snowboarders should pay particular attention. A group discussion would be useful in moving the Alpine Responsibility Code from theory to a set of principles to be applied to all alpine skiing and snowboarding situations.

Have students fill out an exit card.

NOTES TO TEACHERS

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

Additional Resources:

- https://www.cps.ca/en/documents/position/skiing-snowboarding-injury
- https://sportmedbc.com/article/alpine-skiing-injury-prevention-strategies-children-and-youth
- https://www.researchgate.net/publication/11151796_Alpine_Ski_Injuries_and_Their_Prevention

EXIT CARD

Know the Alpine Responsibility Code and be safe on the slopes!

List of the elements on the Alpine Responsibility Code that I need to review:

I will learn this by:

Teacher Comments:

The Complete Picture of Backcountry Camp Safety

Lesson Overview

Over the course of this lesson, students will examine the risks associated with camping in the backcountry and how to mitigate them.

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Ontario Physical Activity Safety Standards in Education

Activities:

- Outdoor Education (Camping – Backcountry)
- Outdoor Education (Swimming)

Tools and Resources:

- Concussions
- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers

Others:

- Risk Management

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Materials

- Exit Cards
- Flip chart (or other large) paper (or whiteboard(s))
- Markers
- Sticky dots
- Sticky notes
- Tape for posting the large flip chart paper

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to apply safety rules and procedures during outdoor education activities. For example, success criteria might include:

- I can identify risks to my safety and that of others on the campsite.
- I can explain the risks and possible dangers of not using safety measures.
- I can justify my explanations with an example.

After the activity, review the co-created criteria with students, and then have them complete their exit cards.

Collect and review students' 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 backcountry safety, and answer any remaining questions.

MINDS ON

Provide students with the following instructions. Our class is leaving on a canoe trip in a few days. Once there, we need to establish a safe campsite. What safety concerns do we need to be aware of? What additional safety measures are important for a campsite close to water?

ACTION

- Have students work in groups of three or four.
- Give each group a large sheet of paper and a marker.
- Have each group draw a campsite on their paper.
- Have each group pass their paper to the group to their right.
- The next group writes three "safety concerns" on the sticky notes, and puts them on the sheet (for example, writes "Make sure the fire is put out before going to sleep" on the sticky note and stick it on the fire in the picture).
- The groups pass the sheet to the group on the right again.
- The next group adds three more sticky notes to the drawing and passes it to the right.
- The activity continues until the students are out of ideas. (Alternatively, set a timer for the activity.)
- Circulate and give hints as needed.
- Post all papers on the wall.
- Have students walk around the class, look at the sheets, and put a sticky dot on ones they think are the most complete.
- Guide students in a whole-class discussion about the activity.

CONSOLIDATION

Draw students' attention to the drawing the class chose as the best one, and compare it to this list of safety tips:

- Do not set the fire under overhanging tree branches.
- Remove any debris around the fire.
- Surround the fire with a circle of stones.
- Make sure the firewood is properly stacked.
- No horseplay around the fire.
- Supervise the fire at all times.
- Put out and dampen the fire before going to bed.
- Put the camping mats on flat ground, free of debris.
- Put the food up in a tree far away from the campsite.
- Check that there are no dead branches above the tents.

- Bring a tarp for shelter in case of bad weather.
- Wash your hands after using the latrines.
- Establish the latrines far enough away from the camp water.
- Dig the latrines, if needed, at a depth of at least 30 centimeters.
- Make sure the campsite is free from any tripping hazards.
- Put any saws in the trees; do not leave them on the ground.
- Make sure the water purification system is easily accessible.
- Dump out the dishwater in a ditch far away from the campsite.
- Make sure the first aid kit is easily accessible and that the group knows where it is.
- Respect any safety requirements (for example, swim tests, supervision ratios) before swimming or bathing.

Have students compare the safety rules of this list and the safety rules on the pictures chosen by the class.

Guide a discussion on the subject of safety rules not included on the drawing chosen by the class. Invite students to explain when these rules are important and justify their explanation with an example.

Have students fill out exit cards.

NOTES TO TEACHERS

Each poster can be posted in the class as a reference for preparing for the class trip.

Remember to review any safety standards about swimming if applicable to the trip.

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

Exit Card

A Complete Overview on How to Camp Safely in the Backcountry

Name four safety procedures that we need to consider when establishing a backcountry campsite. Explain the possible risks and dangers if these procedures are not used and give an example.

SAFETY MEASURES	CONSEQUENCES
1.	
2.	
3.	
4.	

Teacher Comments:

The Ins and Outs of Hiking Backpacks

Lesson Overview

During this lesson, students will examine the different styles, sizes, and design of backpacks before leaving on the trip. They will discuss the weight and distribution of items when filling a backpack and how to carry a heavy backpack safely. They will also learn how to pack the backpack efficiently and for ease of use.

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Ontario Physical Activity Safety Standards in Education

Activities:

- Outdoor Education (Backpacking/ Hiking - Backcountry)

Tools and Resources:

- Concussions
- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers

Others:

- Risk Management

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Materials

- 2 water bottles
- Backpack (20–45 liters)
- Bag/container with food for the trip
- External frame pack, for demonstration purposes only
- Internal frame pack (70–90 liters)
- Observation Sheets
- Other personal and group items
- Personal clothing, including rain jacket and rain pants
- Sleeping bag and sleeping pad
- Stove and fuel
- Tarp and tent

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to apply safety rules and procedures during outdoor education activities. Consult the observation sheet at the end of this lesson for sample criteria.

As part of the activity, have students show how to appropriately prepare, carry, and adapt their backpack for a trip according to their own weight and their body. Offer verbal feedback, keeping the criteria below in mind. Consider using the observation sheet to gather evidence of student learning.

After the activity, review the co-created criteria with students, and then have them complete their observation sheets.

Collect and review students' observation sheets. Use the co-created criteria and a master observation sheet 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 backpacking safety, and answer any remaining questions.

MINDS ON

Explain to the students that the group is planning a backcountry hiking trip and they need to make a list of equipment to bring. If possible, weigh the various items to determine the total equipment weight for the group, and then divide the weight by the number of participants taking part in the trip. Remember to include the weight of filled water bottles, snacks, and food.

Spread the equipment evenly among participants, so the weight is distributed. Check that the equipment will also be transported in the appropriate fashion for varying terrain. Have the group consider how to share the responsibility for carrying the necessary equipment throughout the trip keeping in mind that the weight of some items will diminish over the course of the trip.

ACTION

Basic Backpack Anatomy

Use a filled 70–90-liter pack as an example for discussing basic pack elements, or you can show the classes the images on a screen.

The basic elements of a backpacking pack are:

- Inner frame and stays
- Shoulder straps
- Hip belt
- Upper pocket
- Compression straps
- Load lifters
- Hip stabilizers
- Sternum strap

These elements work together to help a person safely carry heavy loads while minimizing physical stress on the body and allowing the person to navigate tricky terrain more easily and enjoy each day with the group.

Provide students with an opportunity to carry fully loaded packs. Have them adjust the various straps so they have hands-on experience with how these change weight distribution in the pack. Make sure they understand how this helps them while hiking with the pack on.

Weight Distribution in a Backpack

Have students evaluate the items placed in the backpack, the frequency with which they will use each one, and its weight/mass.

The general rule is to place the heaviest items close to the back, between the shoulders and hips. Placing heavy items in the upper part of the backpack may cause problems with balance and footing, and other safety issues while hiking uphill. Placing all heavy items at the bottom of the backpack may cause problems with balance while going downhill and may require frequent adjustment of the straps. The full weight of the pack should rest on the hips, with the hip belt, which is why heavier items should be placed close to the back and above the hips.

Weigh each backpack. In general, a backpack should not weigh more than 25% of the transporting student's weight.

Additional Tips

- Place raingear at the top of the backpack along with the first aid kit and snacks for the day.
- Put any stove fuel in one of the exterior side pockets, or at least under the food and first aid kit, in order to prevent any wasted materials due to a fuel leak.
- There are two ways to waterproof a backpack:
  - Add an outer layer, such as a garbage bag. Everything will be waterproofed. However, it will be more challenging to get to items quickly if it rains, because this added layer will need to be removed to reach items in the pack.
  - Waterproof each smaller section of a backpack, thus making access much easier.
- Make sure to have easy access to water bottles without taking the backpack off. This will help to stay hydrated all day.
- Create a schedule for how group gear and food will be carried throughout the trip, remembering that fuel and food will begin to weigh less even after the first meal. It helps to share the responsibility for carrying the group equipment.

CONSOLIDATION

Have students prepare their backpacks and assess techniques used by their classmates for weight distribution.

Evaluate which backpack is easiest to carry, which has more uniform weight distribution, which is best waterproofed, etc.

Ask the smallest person in the class to try carrying the backpack of the biggest person in the class by modifying contents using the backpack's features. Ultimately, though, each backpack should be prepared and adapted for the person carrying it.

NOTES TO TEACHERS

There are many images online that show how to pack a backpack, as well as where to place certain items. Find one relevant to the chosen outdoor activity, or co-create one with students based on the required equipment, clothing and food for the activity

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

OBSERVATION SHEET

Backpack 101

Student Name:

Criteria: I can apply these safety measures to prepare my backpack for a trip:

DETAILS	COMMENTS
Heavier items are placed closest to my back, between the shoulders and at the base of my back.	
The weight of the backpack rests on my hips using the hip belt.	
The backpack does not weigh more than 25% of my weight.	
These three items are packed for quick and easy access:	
• waterproof clothing	
• first aid kit	
• snacks for the day	
My water bottle is placed in an easy-to-reach location.	
Stove fuel is placed in one of the exterior side pockets.	
Multiple small dry bags or one large dry bag to keep clothing and gear dry inside the backpack.	

There Is No Such Thing as Bad Weather, Only Bad Clothing!

Lesson Overview

During this lesson, students will:

- Learn how to provide first aid in case of hypothermia
- Learn about immersion hypothermia and how to re-heat someone who is suffering from hypothermia
- Learn which fabric is the best for staying warm
- Learn the signs and symptoms of frostbite and first aid techniques
- Learn the definition of frostbite and how to recognize the stages of frostbite (superficial and deep)
- Discuss the way the body loses heat– examples and prevention
- Discuss the appropriate layering of clothing for outdoor activities
- Discuss injuries caused by the cold
- Review the types of hypothermia (light, moderate, serious)

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Ontario Physical Activity Safety Standards in Education

Tools and Resources:

- Concussions
- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers
- Temperatures

Others:

- Risk Management

Materials

- Clothing to create layers
- Exit Cards
- Heavy coat/jacket of any material
- Observation Sheets
- One “good” sleeping bag and one that’s lost loft
- Slide show – create a presentation of activity information, with one slide per text box (or possibly show the pages below on a screen)
- Socks or gloves in a variety of fabrics such as cotton, wool, and polyester
- Whiteboards and markers for small-group work

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to apply safety rules and procedures during outdoor education activities. For example, success criteria might include:

- I can identify the rules for staying warm during winter outdoor excursions.
- I know what behaviours reduce the risk of injuries due to cold.

Students will complete an observation sheet during the activity. After the activity, review the co-created criteria with students, and then have them complete their exit cards.

Collect and review students' observation sheets and exit cards. Use the co-created criteria and a master observation sheet 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 cold-weather preparedness and safety, and answer any remaining questions.

Optional:

Have students come back the next day with appropriate clothing for outdoor activities in cold weather and have them work in pairs. One student can show how to layer clothing for outdoor winter activities while another student offers feedback and fills in an observation sheet (at end of this lesson).

MINDS ON

Put the socks under the tap, run water until they're completely wet, and then squeeze them out one pair at a time. Ask volunteers to put the socks on their hands and describe how the socks feel (wet, heavy, cold, etc.). Have students make notes of their responses.

ACTION

Have students work in small groups to brainstorm causes that lead to "feeling cold."

On the board, write:

- TEMPERATURE
- MOISTURE (from sweat or rain)
- WIND

Have one small group come to the front and pick three items of clothing for the top half of the body from the bag of clothes that they would wear during outdoor activities.

Slideshow

Slide 1:

Wicking layer: next to the skin, allows sweat to wick (move away from skin) and evaporate

Good wicking materials: wool, bamboo, silk, artificial

Bad wicking material: cotton

Ask students to identify which wet socks were coldest and which were warmest or most comfortable.

Additionally, have students check the label on the back of their shirts. Ask, "How many are wearing cotton clothing versus other fabrics? Why do so many people wear cotton if it is not a good base layer?" Allow students to discuss answers for a few minutes.

Slide 2:

Insulating layer: keeps heat close to the body

Examples of good insulating clothing:

- Wool shirt
- Fleece shirt, jacket, or vest
- Down jacket

Pass the heavy coat/jacket around. Ask students to touch it and think about the material it's made from. Ask, "How does a coat keep your body warm?" (Answer: It retains your body heat.)

Slide 3:

Protective layer: blocks wind; good for hot or cold weather; sometimes called “outer layer”

Ideally your outer layer protects against rain and also allows sweat and moisture to pass through.

Examples of good outer, protective clothing:

- Windbreaker
- Nylon jacket
- Canvas coat

Show students examples of each article of clothing.

Students may think all wool is itchy. If possible, pass around some socks made from merino wool or an alternative wool (for example, llama) that is not itchy. (Keep in mind that some people are sensitive to sheep or other wool, so are genuinely unable to wear it.)

Slide 4:

Key pieces of clothing:

- Boots, with removable linings if possible.
- Mittens and liner gloves that provide warmth even if damp.
- Socks of appropriate material; some people recommend socks that are at least 50% wool, although other materials work well.
  (Note: You may want to wear more than one layer of socks. Keep it to two layers, because too many layers will crowd your foot inside your boot, reducing circulation in your feet and causing your feet to feel cold!)

Ask students to name appropriate materials for boots (for example, waterproof), mittens (for example, wool, nylon), liner gloves (silk, artificial), and socks (for example, silk, bamboo, artificial).

Slide 5:

Tips for Staying Warm on a Trip:

- Add a layer when you stop and remove it when you are moving. This helps to regulate your temperature (which means "maintain about the same temperature").
- Keep a spare pair of wool socks easily accessible in your backpack. If your feet are damp or cold, add them as another layer or to change your socks.

Have a volunteer demonstrate how to add or remove layers of clothing to regulate their temperature when cross country skiing and taking breaks.

Slide 6:

Tips for Staying Warm at Night:

- Wear a dry wicking layer to sleep in; a small amount of sweat = cold!
- Wear a hat (toque) while you sleep.
- Hang up your boot laces and wet clothing each night so they can dry.
- Pee if you need to! Your body uses energy and heat to keep your pee warm.

Ask students to name appropriate materials for a hat/toque (for example, fleece, wool). Then have them discuss the other tips on the slide. Answer any questions they may have.

Slide 7:

Sleeping Bags:

- Sleeping bags called “mummy bags” keep heat in the best, because they follow the form of your body.
- They may be filled with down (feathers), but if these get wet, they will not keep you warm. Most good bags have artificial material for the filling.
- The most important feature of a sleeping bag for outdoor camping is how well it lofts or fluffs up. A bag with good loft traps air warmed by your body heat and keeps you warm.

Set out the two examples of sleeping bags and invite students to spend a couple of minutes examining them (or, pass them around). Have students feel the spaces between the insulating materials in the one with less loft.

CONSOLIDATION

Lead a whole-class discussion, using the following prompt:

- You are responsible for your body heat during the trip. How might your feeling too hot or too cold have an impact on the group?

Have students complete exit cards.

NOTES TO TEACHERS

Prepare the slide show ahead of time. Determine a way to present the slide content given below, or copy and paste the information into a slide presentation (for example, PowerPoint or a similar program).

St. John's Ambulance has a resource on the stages, signs and symptoms of frostbite: https://www.sja.ca/English/Safety-Tips-and-Resources/Pages/Winter%20Safety/Frostbite.aspx

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

OBSERVATION SHEET

Dressing Appropriately for Cold Weather

Name:

I can apply clothing layering techniques when participating in outdoor winter activities.

DETAILS	COMMENTS
First layer: wicking fabric close to the skin to allow for sweat to evaporate.	
Second layer: insulating layer that will hold body heat close to the body.	
Third layer: protective clothing to protect against the wind and rain.	

EXIT CARD

Dressing Appropriately for Cold Weather

Two tips that I will follow to stay warm while on the winter outdoor trip:

Steps I will take with respect to these tips:

Teacher Comments:

Ticked Off

Lesson Overview

During this lesson, students will learn how to determine best practices to prevent tick bites during hiking trips, understand the consequences of contracting tick-borne illnesses, and understand guidelines for hiking safely and leaving no trace.

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Ontario Physical Activity Safety Standards in Education

Activities:

- Outdoor Education (Backpacking/Hiking – Local)

Tools and Resources:

- Concussions
- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers

Others:

- Risk Management

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Materials

- Information from or access to a public health website about known cases of Lyme disease and the presence of ticks in areas in which you plan to hike
- Maps of local hiking trails
- Printed handouts of ticks (found online or provided by the local Public Health office)

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to apply safety rules and procedures during outdoor education activities. For example, success criteria might include:

- I understand ways to reduce the risk of tick bites while I am out hiking.

After the activity, review the co-created criteria with students, and then have them complete their exit cards.

Collect and review students' 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 safety with respect to ticks, and answer any remaining questions.

MINDS ON

Ontarians are fortunate to have an abundance of wilderness that provides everyone with ample opportunity to enjoy the outdoors. However, ticks and Lyme disease need to be considered when planning outside activities, especially in areas that are wooded or have tall grasses, bushes, and shrubs.

Lyme disease is spread to humans through the bite of infected blacklegged ticks (also known as deer ticks) and health officials are seeing an increase in the number of cases in the province.

> "We've seen a marked increase in the number of confirmed cases of Lyme disease in Ontario, particularly in the last year," says Dr. David Williams, Ontario's Chief Medical Officer of Health. "This is partly due to an increase and expansion of blacklegged tick populations to new areas of the province."

Excerpt from: Ontario Parks (2019). Parks Blog, How to protect yourself from ticks. Retrieved from: www.ontarioparks.com/parksblog/how-to-protect-yourself-from-ticks/

ACTION

An Overview of Ticks

COMMON NAMES: black-legged tick, deer tick
SCIENTIFIC NAME: Ixodes scapularis
TYPE: Invertebrate
DIET: Carnivore
AVERAGE LIFE SPAN IN THE WILD: 2 years
SIZE: 0.078 to 0.137 inches

Information from National Geographic. (2019). Deer tick. Retrieved from: https://www.nationalgeographic.com/animals/invertebrates/d/deer-tick/

Life Cycle and Feeding

"Deer ticks live about two years and go through four life phases: egg, larva, nymph, and adult. They feed exclusively on animal blood and eat only three times during their lives:

- once to molt from larva to nymph;
- once to molt from nymph to adult;
- and once as adults to lay eggs.

The bacteria that causes Lyme disease is transmitted from an infected host at any of these feedings, but transmits it only during the second or third. They must remain attached for at least 24 hours for the bacteria to transmit.

Larvae are miniscule, no bigger than the period at the end of this sentence, and feed only on birds or mice. Nymphs are about as big as a poppy seed, but, like adults, will seek larger hosts, including deer, dogs, and humans. Adult females mate on or off a host then feed for several days, swelling to twice their normal size. Once engorged, they drop off, lay their eggs amid the leaves, and die."

Information from National Geographic. (2019). Deer tick. Retrieved from: https://www.nationalgeographic.com/animals/invertebrates/d/deer-tick/

→ Tick Habitats

Share some tick habits and tick bite protection tips with students.

Many people believe that ticks are found only in woods. However, they can also be found in many places such as:

- Wooded areas
- Where woods and grassy areas meet
- In tall shrubs, bushes, and grasses
- Under leaves
- In cut grass or sports fields (in small numbers)
- Under groundcover plants in yards
- Around rock or wood walls where mice and other small mammals live

Methods for Preventing Tick Bites and Lyme Disease

The most effective way to prevent Lyme disease is to prevent being bitten by ticks. Here are tips on how to prevent tick bites:

- Wear light-coloured clothing. This discourages ticks from attaching to you, and it makes them easier to spot if they do get on you.
- Wear long pants, a long-sleeved shirt, and close-toed shoes. Tuck your shirt into your pants. You can also tuck your pant legs into your socks.
- Use an insect repellent containing DEET or icaridin (follow manufacturer's instructions) on your clothes and any exposed skin.
- Stay on pathways or in the middle of trails.
- Check your clothing and body at least once a day for ticks. Pay particular attention to the groin, navel, armpits, scalp, behind the knees, and behind the ears.
- Use a mirror to examine the back of your body, or ask someone else to do so.
- Take a shower as soon as you can after being outdoors. This allows you to more easily find and wash off any ticks crawling on you.
- Put outdoor clothing in the dryer for 60 minutes on high heat before washing them. This kills any ticks, which are often difficult to see and thrive in wet environments.

What to Do if You Find a Tick on You or Someone Else

- Use fine-tipped tweezers to grab the tick as close to the skin as possible.
- Slowly pull on the tick with even pressure, in one smooth motion, so that the mouth is removed and the body isn't crushed.
- Wash the area with soap and warm water.
- Put the tick in a sealed plastic bag or a container with a lid.
- Bring the tick to your local Health Unit office to have it identified.
- Consult with a healthcare provider within the next 24 hours.

What NOT to Do

- Do not grab, squeeze, or pop the tick around its swollen abdomen.
- Do not use a match, heat, or chemical products to try to remove a tick.
- Do not twist the tick when pulling it out.

Areas at Risk of Lyme disease in Ontario

Black-legged ticks are not the only cause of Lyme disease, although Lyme disease due to black-legged ticks is becoming more prevalent, with increasing cases in several areas of Ontario.

Infected ticks are found in areas such as, but not exclusive to, the Simcoe-Muskoka district, York region, and Eastern Ontario as well as Hamilton and parts of Northwestern Ontario.

CONSOLIDATION

Before going on a local trip, have students identify the areas on the trail that are likely tick habitat. Have students consider strategies to prevent potential harm in these kinds of terrain: for example, stay on the marked trail, tuck pant legs into socks, wear insect repellent containing DEET, etc.

Have students practice tick prevention techniques during the local hike, and make tick checks a part of every post-hike program and debrief.

Have students complete an exit card.

NOTES TO TEACHERS

Review the Public Health Ontario's Ontario Lyme Disease Map 2019: Estimated Risk Areas with the class.

For more information on health concerns about ticks and Lyme disease in your region, contact your local Public Health office.

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

EXIT CARD

Ticks for Beginners

Five things I can do to prevent tick bites:

1.

2.

3.

4.

5.

Teacher Comments:

Use Lemons! – Risks Related to Aquatic and Campsite Activities

Lesson Overview

During this lesson, students will identify the risks on the water and campsite and examine ways to mitigate them.

Overall and Specific Expectations

- PPL 10: 1, 1.5; A3, A3.1
- PPL 20: 1, 1.5; A3, A3.1
- PPL 30: 1, 1.5; A3, A3.1
- PPL 40: 1, 1.5; A3, A3.1

Ontario Physical Activity Safety Standards in Education

Activities:

- Outdoor Education (Backpacking/Hiking – Backcountry)
- Outdoor Education (Camping – Backcountry)
- Outdoor Education (Canoeing Moving Water)
- Outdoor Education (Canoeing)
- Outdoor Education (Flat Water Kayaking)
- Outdoor Education (Paddle Rafting)
- Outdoor Education (Swimming)

Tools and Resources:

- Concussions
- First Aid Plan and First Aid Emergency Response
- Outside Activity Providers

Others:

- Risk Management

Learning Goals

- I can behave responsibly and apply appropriate safety rules and procedures that maximize my safety and that of others during outdoor activities.
- I can think critically to analyze situations, evaluate my choices and make safe decisions in a variety of situations.

Materials

- Exit Cards
- Lake Timiskaming Case Study
- Whiteboard and whiteboard markers

ASSESSMENT FOR LEARNING

At the beginning of the lesson, work with students to co-create criteria for assessing knowledge and skills needed to apply safety rules and procedures during outdoor education activities. For example, success criteria might include:

- I understand the safety risks involved with aquatic and camping activities.
- I know what I can do to reduce safety risks during aquatic and camping activities.
- I use my risk management skills in new contexts.

After the activity, review the co-created criteria with students, and then have them complete their exit cards.

Collect and review students' 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 general outdoor safety, and answer any remaining questions.

MINDS ON

"In 1978, a Toronto private school for boys organized a canoe trip on Lake Timiskaming in Northern Ontario. The boys and supervisors had stayed at a school event until midnight the night before. Before leaving at 7:30 a.m., they ate a light, cold breakfast. The boys and the supervisors did not have appropriate canoeing experience. They did not take enough time to practice canoe-on-canoe rescues or have rescue training before the trip. The lake is very large, and the temperature of the water was 6 °C. A sudden storm caused big waves. Two of the canoes capsized, and a third capsized during efforts to rescue people in the other canoes. As a result, 12 students and a supervisor died."

Ask students to identify some of the factors that contributed to this accident.

ACTION

In his booklet Wilderness Crises Management, author James Raffan argues that the deaths were completely preventable given the factors that led up to them. Raffan uses a "slot machine metaphor" (show students a photo of a slot machine) in which each factor leading to an accident is a "lemon." Once three or more lemons have been accumulated in a situation, a "jackpot," is hit which means an accident. Talk to the students about brainstorming possible lemons for an outdoor activity and how to create a culture of safety mindedness during any outdoor activity.

Have students work in small groups. Distribute chart paper or small whiteboards and markers. Assign each group a pertinent topic for their trip. Examples:

- Portage
- Paddle Use
- Getting In and Out of the Water
- Weather Conditions
- Camp Fires
- Campsite Cooking
- Bathing/Swimming at the Campsite
- Animal Encounters

Tell each group to write on one half of their paper/whiteboard any "lemons" associated with each activity. On the other half, identify a way to mitigate the lemon, that is, reduce the risk.

Example response:

"LEMONS" ASSOCIATED WITH PORTAGE AND AQUATIC ACTIVITIES	HOW TO REDUCE THE RISK
Injuries to toes or feet	Wear close-toed shoes
Slippery rocks	Walk on stable areas
Hunger	Take breaks, and eat a snack of dried fruits and nuts
Trying to continue despite fatigue	Take a break with a friend
Seeing nothing around you	Adjust the boat's angle

Have groups present the results of their small-group work to the class. Answer any remaining questions.

CONSOLIDATION

Have students complete an exit card.

NOTES TO TEACHERS

This strategy is ideal for creating a class culture of safety awareness. Students might then decide to call out "That's a lemon!" when someone's laces are undone, when someone is carrying a pot of boiling water, or when people are acting rowdy around a campfire.

If students do not raise the question of aquatic safety, prompt a discussion of it.

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

EXIT CARD

Use Lemons! – Risks Related to Aquatic and Campsite Activities

What lemons are you most likely to encounter on this trip?

What can you do to mitigate the lemons to reduce the risk during this trip?

What can you do to reduce lemons like hunger, fatigue, and poor attitude during this trip?

Teacher Comments:

Additional Resources

ASSOCIATIONS

Association for Experiential Education

www.aee.org

The Association of Experiential Education (AEE) is a global community of experiential educators and practitioners with the shared goal of elevating the field of Experiential Education. Their members organize regional and annual conferences, define professional standards, provide accreditation to organizations, and present the latest news and research through AEE e-news and the Journal of Experiential Education.

Canadian Association of Nordic Ski Instructors

https://cansi.ca

The Canadian Association of Nordic Ski Instructors (CANSI) is the national association for the training and certification of cross country ski and telemark ski instructors in Canada.

Council of Outdoor Educators of Ontario

www.coeo.org

The Council of Outdoor Educators of Ontario (COEO) is a non-profit, volunteer-based organization that promotes safe, high-quality outdoor education experiences for people of all ages. It also acts as a professional organization for outdoor educators in the province of Ontario.

Hike Ontario

http://hikeontario.com

Hike Ontario has developed standards and training programs for trip leaders that are used by community colleges, universities, local hiking clubs, and outdoor training organizations for course delivery.

Lifesaving Society of Canada

www.lifesavingsociety.com

The Lifesaving Society provides programs, products, and services developed to prevent the occurrence of drowning and water-related injury.

The Ontario Physical Activity Safety Standards in Education

safety.ophea.net/

The Ontario Physical Activity Safety Standards in Education, managed by Ophea, represent the minimum standard for risk management practice for school boards in Ontario.

Ontario Recreational Canoe and Kayak Association

www.orcka.ca

The Ontario Recreational Canoeing and Kayaking Association promotes accessibility of paddling experiences for everyone.

Ophea Teaching Tools

teachingtools.ophea.net

Ophea's Teaching Tools has everything teachers need to enable children and youth to lead healthy active lives, including lesson plans, activities, and supplementary materials.

Outdoor Council of Canada

www.outdoorcouncil.ca

The Outdoor Council of Canada (OCC) is a nationally incorporated, non-profit, member-owned organization. The OCC was founded to encourage, promote, and facilitate safety-oriented outdoor education and recreational programs as well as leadership opportunities that are accessible to every Canadian.

Paddle Canada

www.paddlecanada.com

Paddle Canada sets national standards for instruction and certification for recreational paddle sports including canoe, kayak, and paddle board. Paddle Canada certifications are nationally accredited and internationally recognized.

Red Cross

https://www.croixrouge.ca

Red Cross offers a wide range of courses related to essential first aid and CPR.

Wilderness Medical Associates

www.wildmed.com

Wilderness Medical Associates International (WMAI) is dedicated to the development of remote and practical medicine around the world. They are medical and rescue professionals, researchers, experienced educators, and advocates for health care in wilderness contexts.

BOOKS

Risk Management in Outdoor and Adventure Programs: Scenarios of Accidents, Incidents, and Misadventures

Author: Aram Attarian

Written by Aram Attarian, experienced professor and outdoor adventure professional, Risk Management in Outdoor and Adventure Programs presents a systematic model to determine why an incident occurred and what can be done to prevent this incident from happening again. Over 50 real scenarios represent the various situations that can occur in outdoor adventure programs

Deep Waters: The Lake Timiskaming Canoeing Tragedy

Author: James Raffan

James Raffan provides a deconstruction of the circumstances that brought around the accident in 1978. Raffan slowly unravels the sequence of events that led to the tragedy and, looking back more than two decades later shows us what can be learned from the experience.