

Topic:	Environmental Factors and Physical Activity Thunder, Lightning, High Winds, Extreme Temperatures and Inclement Weather
Effective:	June 2016
Cross-Reference:	Halton District School Board Elementary and Secondary Physical Education Safety Guidelines – Curricular, Intramural, and Interschool Modules; Administrative Procedures: Risk Management – Minimum Standard of Care for Interschool Athletics; Inclement Weather
Review/Revision Date:	June 2019
Responsibility:	Superintendent of Education (School Programs)

INTENDED PURPOSE:

The Halton District School Board is committed to the safety of all students while participating in outdoor physical activities (physical education classes, DPA/QDF, intramurals and interschool athletic practices and competitions/tournaments) both on and off school campus, as part of an HDSB co-instructional program.

To minimize risk to students and staff participating in all outdoor activities, the following procedures are the minimum standards and must be followed in the event of thunder and/or lightning, high winds, extreme temperatures, and inclement weather.

Rationale:

- OPHEA Safety Guidelines recognize the increasingly higher incidence of lightning, the overall volatility of recent weather patterns and the effect of the weather on outdoor activities. Consequently, the revised Ontario Physical Education Safety Guidelines (2016) address procedures related to environmental factors and student safety in all physical activities including Physical Education classes, DPA/QDF, Intramurals and Interschool practices and competitions/tournaments.
- According to Environment Canada, lightning is most frequent in southern Ontario and there has been increasing frequency of thunder/lightning during the past years.
- When considering activity outdoors, temperatures and type/duration of activity may have an impact on participants and thus must be taken into consideration.
- When considering activity outdoors, high winds and objects in the path of high winds may have an impact on participants and thus must be taken into consideration.

PROCEDURES:**Chain of Command**

The persons filling the roles listed below are responsible for making the decision to remove a group or individuals from the playing field, stopping the activity, and determining when/if it is safe to resume the activity:

1. Curricular activities – teacher
2. Intramurals – teacher, intramural supervisors
3. Interschool --
Practices: teacher/coach/convenor
Games: teacher/coach in consultation with officials/convenor
4. Outdoor Education Trips – teacher in consultation with trip leader
5. Off-Site Activity Providers – teacher in consultation with facility monitor

6. Camps – teacher in consultation with camp director
7. Recess/Nutrition Breaks/Before School Entry – school administration

The “in-charge” person must monitor weather conditions prior to the time of activity and be aware of potential thunderstorms and weather patterns that may form during scheduled outdoor Physical Education classes, DPA/QDF, Intramurals and Interschool practices and competitions/tournaments using local weather forecasts and a reliable sources such as:

Local radio broadcasts;

[The Weather Channel;](#)

[The Weather Network;](#)

[Environment Canada;](#)

[Halton Region weather and emergency preparedness.](#)

The HPE IPL for K-12 Safety is also a resource for consultative purposes.

THUNDER and LIGHTNING

Lightning is a significant weather hazard that may affect outdoor activities.

Planning Evacuation and Safety Measures in Advance:

A lightning response plan must be planned in advance of any outdoor activity. The following must be taken into consideration:

Shelter:

The “in-charge” person must pre-plan for and know the ‘safe structure or location’ closest to the field or playing area, and how long it takes to get to that ‘safe structure or location’.

Safe structure or location is defined as:

- Any building normally occupied or frequently used by people (e.g., a building with plumbing and/or electrical wiring that acts to electrically ground the structure)
- In the absence of a safe structure, any vehicle with a hard metal roof (not a convertible or golf cart) and rolled-up windows can provide a measure of safety

Note: It is not the rubber tires that make a vehicle a safe shelter, but the hard metal roof, which dissipates the lightning strike around the vehicle. DO NOT TOUCH THE SIDES OF THE VEHICLE.

Alternate location:

If there is no ‘safe structure or location’:

- Find the low ground. Seek cover in clumps of bushes or a dry ditch.
- Remove all metal objects.
- Minimize your body’s surface area in contact with the ground. Do not lie flat on the ground.
- Place your feet together, lower your head, crouch down with only the balls of your feet touching the ground, and wrap your arms around your knees.
- If you are in a group in the open, spread out, keeping people several metres apart.

Note: Lightning current often enters a victim through the ground rather than by a direct overhead strike.

Unsafe shelter includes:

- all outdoor metal objects (e.g., football standards)
- near flagpoles/light poles
- fences and gates
- metal bleachers
- golf carts
- machinery, etc.

Note: Avoid trees, water (ponds, creeks), open fields, and high ground.

Detection and Response:

- When you first see lightning or hear thunder, activate your evacuation plan and seek shelter immediately (i.e., go to a building or a vehicle).
- Lightning often precedes rain; don't wait for the rain to begin before suspending activities.
- Apply the following lightning safety slogan: **'IF YOU SEE IT, FLEE IT; IF YOU HEAR IT, CLEAR IT'**.

Resumption of the Activity:

- Wait a **minimum** of 30 minutes from the last visual observation of lightning or sound of thunder before resuming activities.
- Note that injured persons do not carry an electrical charge and can be handled safely. Call 911 or send for help immediately. Apply first aid procedures if you are qualified to do so.

Source: U.S. National Severe Storms Laboratory (NSSL) National Lightning Safety Institute, Louisville, CO.

Additional Lightning Information:

- All thunderstorms produce lightning.
- Lightning can travel as far as 10 km and strike even when skies are blue.
- Lightning is attracted to tall, isolated objects like trees.
- Bodies of water attract electricity and lightning.
- Lightning injuries can lead to permanent disabilities or death.
- Nowhere outside is safe from lightning (open areas, activity fields, open water are all potentially dangerous places to be when lightning is present).
- A large proportion of lightning deaths occur in, on, or near open water and under trees.

Sources: Environment Canada, U.S. National Storms Laboratory {NSSL}, National Lightning Safety Institute, Louisiana

EXTREME TEMPERATURES

Extreme temperature is a significant weather hazard that may affect outdoor activities. Before involving students in outdoor activity, teachers/coaches must take into consideration the following:

- environmental conditions (temperature, weather, air quality, humidity, UV index, insects, frost bite)
- accessibility to adequate liquid replacement (personal water bottles, water fountains) and student hydration before, during, and after physical activity
- previous training and fitness levels
- length of time, type and intensity of physical activity

Teacher/Coach must ensure that parents/guardians are aware of safety precautions related to environmental factors (e.g., temperature, weather, air quality, humidity, UV index, insects, frost-bite, etc.).

Students must be made aware of ways to protect themselves from environmental conditions: (e.g., use of hats, sunscreen, sunglasses, personal water bottles, insect repellent, appropriate clothing etc.).

The [Halton Region](#) provides information on Environmental Health including heat warnings and cold alerts.

Heat Illnesses and Heat Exposure:

Heat can stress the heart and lungs as the body works harder to cool itself, and can produce cramps, headaches, nausea, weakness, dizziness, and fainting - if untreated, more serious, permanent damage or death.

Heat Warnings:

- Heat Warning: When forecast temperatures are expected to be at least 31°C and overnight temperatures are above 20°C for 2 days or the humidex is at least 40°C for 2 days.
- Extended Heat Warning: When forecast temperatures are expected to be at least 31°C and overnight temperatures are above 20°C for at least 3 days or humidex is at least 40°C for at least 3 days.

Cold Stress and Cold Exposure:

Any individual can lose body heat when exposed to cold air, but when physically active the individual cannot maintain heat and thus cold exposure can be uncomfortable, impair performance and may be life-threatening. Cold stress may develop as the result of environmental or non-environmental factors.

Cold Alerts:

- [Halton Region](#) issues a Cold Alert when there is daily predicted low of -15°C without wind-chill.
- [Environment Canada](#) issues an Extreme Cold Warning for outdoor activity when temperature or wind chill is expected to reach -30 °C for at least 2 hours
- When the temperature (with or without) wind chill reaches -20 °C, students will enter school immediately upon arrival in the morning and remain indoors during nutrition breaks.

HIGH WINDS

High winds are a significant weather hazard that may affect outdoor activities. It is not usually the wind itself that causes damage, but rather what is in the path of the wind. When considering wind safety, special attention must be directed at protecting people and property from objects blown by the wind. Wind safety not only means protection from the wind, but also from its effects.

Wind Speed	Precautions and Action to be taken
0 to 8 km/h	Light or light and variable – No action needed, but continue to monitor conditions.
8 to 24 km/h	Mild and variable – No action needed, but continue to monitor conditions and equipment.
24 to 40 km/h	Breezy (mild weather) or brisk, blustery (cold weather) – “In charge” person should monitor equipment and other items that may be susceptible to being blown around. Secure as appropriate.

Wind Speed	Precautions and Action to be taken
40 to 56 km/h	Windy – All equipment and other items must be securely stored. Consider moving activities indoors.
56 to 70 km/h	Very windy – Caution against conducting outdoor activities. Alternative indoor practice accommodations should be arranged.
70+ km/h	High, strong, damaging or dangerous winds – Outdoor activities should be avoided.

Source: *University of Notre Dame, Athletics Safety Protocol, 2011.*

INCLEMENT WEATHER

During the winter months, inclement weather may cause the disruption of school bus transportation and regular school operations. In case of inclement weather, the decision to close schools and/or cancel buses is communicated beginning at 6:30 a.m. When school buses are cancelled by HDSB, there is to be no transportation of students across the board for any physical activity or interschool practice/competition.

When school buses are cancelled by HDSB in only specific areas of the region, there is to be no transportation of students for any physical activity or interschool practice/competition in or to the affected region(s) of the Board.

Note that in-charge persons planning physical activities/trips outside of Halton should monitor the weather in the location to which they are travelling. If the school board in the area where they are going has cancelled buses, then the trip should be postponed/cancelled.

For more information on Inclement Weather and HDSB policy please see the Board's website: www.hdsb.ca