

Topic:	Environmental Conditions and Physical Activity (Lightning, Temperatures, Winds, Tornadoes and Inclement Weather and Transportation)
Effective:	June 2016
Cross-Reference:	HDSB Localized Minimum Standards; OPASSE Safety Standards; Administrative Procedures: Concussion Prevention, Identification and Management; Day Field Trips and In School Presentations ; Inclement Weather; Risk Management – Minimum Standard of Care for Interschool Athletics; Student Excursions; Water-based Activities – Swimming; Activities In/On Water, and Considerations for Activities Near/Over Water; Occupational Health and Safety Act
Revision Date:	June 2019, October 2022
Review Date:	October 2026
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, Daily Physical Activity (DPA), outdoor education, experiential learning, intramurals and interschool athletic tryouts, practices, competitions and tournaments) both on and off school sites, as part of an HDSB co-curricular 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 lightning, temperatures, winds, tornadoes and inclement weather.

Rationale:

- OPASSE (Ontario Physical Activity Safety Standards in Education) recognizes the increasingly higher incidence of lightning, the overall volatility of recent weather patterns and the effect of the weather on outdoor activities. Consequently OPASSE regularly updates and maintains procedures related to environmental conditions and student safety in all physical activities, including those that occur outdoors.

PROCEDURES:**In-Charge Person**

The people filling the roles listed below are responsible for making the decision to stop the activity, communicate to students and move them to a safe location, and to determine when/if it is safe to resume the activity:

- Curricular activities - teacher
- Intramurals - teacher, intramural supervisors
- Interschool tryouts, practices and competitions - teacher/coach, convenor in consultation with officials (for competitions)
- Outdoor Education Trips – teacher in consultation with trip leader

- Off-Site Activity Providers – teacher in consultation with facility manager/director
- Camps – teacher in consultation with camp director
- Recess/Nutrition Breaks/Before School Entry – school administration

The Health and Physical Education, Safety and Well-Being IPLs in Elementary and Secondary School Programs are also a resource for consultative purposes.

The “**in-charge**” person must monitor weather conditions prior to the time of activity and be aware of any potential environmental conditions that may form during scheduled outdoor physical activities using local weather forecasts and reliable sources such as:

Local radio broadcasts:

- [The Weather Channel](#)
- [The Weather Network](#)
- [Environment Canada](#)
- [Halton Region weather and emergency preparedness](#)

LIGHTNING

Lightning is the occurrence of a natural electrical discharge of very short duration and high voltage between a cloud and the ground or within a cloud, accompanied by a bright flash and typically also thunder (Environment Canada, 2017).

Background Information on Lightning:

- Lightning is usually associated with thunderstorms.
- If you can hear thunder you can get hit by lightning.
- Lightning can strike as far as 8 -16 km either ahead or behind the thunderstorm, even when skies are blue.
- Contact by lightning can cause catastrophic injuries and death.

What to look and/or listen for:

- **Severe Thunderstorm Watch:** severe thunderstorms are possible in your area
- **Severe Thunderstorm Warning:** severe thunderstorms are occurring.

In the event of lightning, all activities should be stopped and participants moved to the nearest safe location when the sound of thunder is heard or lightning is observed. Note: Activities are not to resume until 30 minutes after the last visual observation of lightning or after the last sound of thunder is heard.

Always remember the saying: “If you hear it, clear it. If you see it, flee it”.

Considerations for planning outdoor activities:

- monitor weather forecast and warnings
- develop a process to cancel or delay the activity
- inform organizers, volunteers, students of an emergency plan
- identify safe locations i.e. any building normally occupied or frequently used by people, or any vehicle with a hard metal roof and rolled up windows. Note: Sheds, tents, and open shelters do not protect from lightning

Where no shelter is available:

- take shelter in a low lying area such as ditches, depressions, or valleys
- in a forest, seek shelter in a low lying area under a thick growth of small trees or bushes. Note: Avoid open fields, highest points in an open area, tall objects, metal

objects, and objects that conduct electricity (e.g., bleachers, light standards, goal posts, metal canoe).

- minimize body surface area in contact with the ground by crouching, feet together, lower head, arms wrapped around knees
- in a group, in open areas, spread out to be several metres from others

For more detailed information specific to the type of activity, please refer to OPASSE -> Tools and Resources -> Weather - > Lightning.

The following must be taken into consideration:

- Procedures for Water Based Activities
- Procedures for Hiking/Backpacking

TEMPERATURES (cold and hot weather)

Before involving students in outdoor physical activity, teachers/coaches must take into consideration temperatures that:

- are safe for students to be physically active outdoors
- are not safe for students to be physically active outdoors
- require accommodations for student safety when physically active outdoors.

In addition, teachers/coaches must assess:

- 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
- Air Quality Health Index and Ultraviolet (UV) Index

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

Teacher/Coach must inform students about the harmful effects of the sun, how to protect themselves and encourage students to take precautions where appropriate by:

- wearing a hat;
- wearing UPF clothing
- sunglasses;
- application of sunscreen; and
- limiting the amount of time in the sun when the UV index is greater than 5.

Air Quality Health Index is a tool designed to communicate health risks for students vulnerable to the effects of air pollution (students with diabetes, heart and lung disease) as well as for the general student population. It forecasts local air quality for the current day and next day. It is designed to assist in health-related decisions. Note: the index does not measure the effects of odour, pollen, dust, heat or humidity on health. (Environment Canada, 2017)

The Air Quality Health Index is a 1-10 scale. The higher the number the greater the health risk and the need to take precautions.

Where appropriate, prior to outside physical activities check the Air Quality Health Index for when and how to accommodate activities for “at risk” and general population students.

To access information on the Air Quality Health Index, visit airhealth.ca and click on "Local Air Quality Health Index conditions", then find your province and city. Listen for:

- Special Air Quality Statement: when there will be a brief occurrence of high risk air quality - level 7 or higher for less than 3 hours
- Smog & Air Health Advisory: when air quality level will be level 7 or higher for 3 hours or more.

The Ultraviolet (UV) Index was developed to protect us from the sun's damaging UV rays. The higher the UV Index the stronger the sun's rays, and the greater the need to take sun precautions and limit the amount of time in the sun. The UV Index is communicated through the local weather report when the index is higher than 3. (Environment Canada, 2017)

Where appropriate, prior to outside physical activities, check the Ultraviolet (UV) Index and cancel and/or make accommodations to activities where the sun's rays pose a hazard to students.

Cold Weather Related Conditions

Exposure to the cold can be hazardous and even life-threatening. The body's extremities, such as the ears, nose, fingers and toes lose heat the fastest. Exposed skin may freeze, causing frostnip or frostbite. In extreme conditions or after prolonged exposure to the cold, the body core can also lose heat, resulting in hypothermia.

Cold Weather Preparedness Guide:

- Check the temperature prior to outdoor activity.
- Review the "School Activities During Inclement Winter Weather" section of the [Inclement Weather Administrative Procedure](#) in advance to ensure you address safety concerns when it is cold or when the wind chill is significant.
- Communicate to students:
 - Dress warmly:
 - Dress in layers with a wind resistant outer layer
 - When it is cold, wear a hat (a large portion of body heat is lost from the head), mittens or insulated gloves and something to keep your face warm, such as a scarf, neck tube or face mask
 - Wear warm and waterproof footwear
 - When it is very cold or when the wind chill is significant, cover as much exposed skin as possible
 - Stay Dry:
 - Wet clothing chills the body rapidly
 - Remove outer layers of clothing or open coat if sweating
 - Keep Active:
 - Walking or running will generate body heat
- Watch for signs of frostnip, frostbite, hypothermia. For more information on these conditions please see OPASSE -> Tools and Resources -> Temperatures

Local information about Cold Warnings and Extreme Cold Warnings

[Halton Region Health Department](#) issues cold warnings during any of the following weather conditions:

- daily predicted low of -15 degrees Celsius without wind-chill
- [Environment Canada](#) issues an Extreme Cold Warning for outdoor activity

(temperature or wind chill to reach -30 degrees Celsius for at least 2 consecutive 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.

Hot Weather Related Conditions

When the heat or high humidity is combined with other stresses such as prolonged physical activity, loss of fluids, fatigue or some medical conditions, it may lead to heat related illness, disability and even death. Heat stress is affected by four environmental factors: air temperature, air movement, humidity and radiant heat.

Hot Weather Preparedness Guide:

- Check the temperature prior to outdoor activity.
- Implement the school board's Hot Weather Action Plan (for example, for heat or humidex). Review the Hot/Human Weather Procedures section of the [Inclement Weather Administrative Procedure](#).
- Encourage and provide access to hydration prior to, during, and after activity.
- When appropriate activity levels are to be reduced and/or increase the frequency and length of rest breaks.
- Cancel/reschedule activity as per school board protocol.
- Communicate to students the importance of:
 - Drink fluids regularly prior to, during and after activity (dehydration is a key factor in heat illness).
 - Wear light coloured, loose fitting clothes made of either natural fibres or composite fabrics with high absorption.
 - Use sun blockers on all exposed body parts.
 - Stay out of the sun and in the shade as often and as long as possible.
 - To cool down, spatter yourself with water before the activity and during breaks and/or apply a cool wet cloth or paper towel to the back of the neck
 - Do not lay down during breaks or after the activity as this may provoke a collapse. It is preferable to sit, stand or walk.
 - Risk is increased if you suffer from asthma, inform your teacher/coach accordingly.
 - Inform the teacher/coach immediately (to seek medical help) with shivering, muscle cramps, headache fatigue or collapse.
- Students (people in general) are generally unable to notice their own heat stress related symptoms. Their survival depends on the ability of teachers/coaches to recognize symptoms and seek timely first aid and medical help. The following is a list of Warning Signs for Heat Injury. ***Note: this is not an exhaustive list*
 - Flushed face
 - Hyperventilation or shortness of breath
 - Headache
 - Dizziness
 - Tingling arms
 - Goosebumps (hair on arms standing on end)
 - Chilliness
 - Poor coordination
 - Confusion, agitation, uncooperativeness

For more information on fainting, heat cramps, heat exhaustion, heat rash and heat stroke please see OPASSE -> Tools and Resources -> Temperatures.

Local information about Heat Warnings and Extended Heat Warnings

[Halton Region Health Department](#) issues the following heat warnings:

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

WINDS

High winds are a significant weather hazard that may affect both land and water activities. The effects of wind (for example, what the wind is blowing) can cause injury and damage to persons and property. (Environment Canada, 2017 and the Beaufort Wind Force Scale)

What to listen for:

- **Wind Warning:**
 - Threshold criteria: 70 km/h or more sustained wind and/or gusts to 90 km/hr or more.
 - A wind warning can be issued but no wind watch alert will be issued by Environment Canada.
 - Wind speed is included in the forecast when speed is greater or equal to 20 km/h.

Where appropriate, prior to and during outside physical activities, check for wind warnings and cancel and/or make accommodations to activities where winds pose a hazard to students.

This section outlines actions that must be taken dependent upon the velocity of the wind.

Note: Water activities follow the wind guidelines for participation/cancellation of the governing body of the activity (for example, rowing, sailing), outside activity provider, or school board.

Wind Speeds	Land Effect	Precautions/Actions that Must be Taken
0-19 km/h	<ul style="list-style-type: none"> • Calm to Gentle breeze • Wind felt on exposed skin • Leaves in constant motion 	<ul style="list-style-type: none"> • No precautions required • Be vigilant for change in weather conditions
20-39 km/h	<ul style="list-style-type: none"> • Breezy • Dust and loose paper raised • Branches of trees move 	<ul style="list-style-type: none"> • Continue outside activity. Teacher to secure items susceptible to being blown around • Be vigilant for change in weather conditions
40-49km/h	<ul style="list-style-type: none"> • Strong Breeze • Large branches in motion • Umbrella use becomes difficult • Empty plastic trash cans tip over 	<ul style="list-style-type: none"> • Teacher to take into consideration activity surroundings (for example, trees, unsecure objects ground cover (sand), and equipment being used) • Secure appropriate items • Activity is stopped and/or moved indoors when effect of wind poses a risk to participants
50-59 km/h	<ul style="list-style-type: none"> • High Winds • Whole trees in motion 	<ul style="list-style-type: none"> • Avoid outside activities

Wind Speeds	Land Effect	Precautions/Actions that Must be Taken
	<ul style="list-style-type: none"> Resistance felt with walking against wind 	
60 km/h Wind Speeds or Gust of Winds of 90 km/h	<ul style="list-style-type: none"> Twigs broken from trees Cars veer on road to large branches break off trees, small trees blow over Construction/temporary signs and barricades blow over Damages to tents and canopies 	<ul style="list-style-type: none"> No outdoor activities

TORNADOES

A tornado is a violent rotating column of air that extends from a cumuliform cloud to the surface. A tornado can be tens to hundreds of metres wide and have a lifespan of minutes or hours. In terms of size and area, it is one the least extensive of all storms, but in terms of how violent storms can be, it is the world's most severe. Winds can range from 90 - 315km/hr or greater. Canada has the second highest tornado occurrence in the world, behind the US. (Environment Canada, 2017)

What to Look for:

- a funnel cloud that extends fully or partially from the cloud to the surface
- rotating debris near the ground or spray near the water surface
- the sky may be an unusual green colour
- the wind may sound like a freight train

What to Listen for:

- **Tornado Watch:** A watch issued by Environment Canada when severe thunderstorms are forecasted and conditions are favourable for one or more tornadoes to be spawned from those thunderstorms within a defined "Watch Area"
- **Tornado Warning:** A warning issued by Environment Canada when at least one tornado is imminent, as indicated by observation, reports and/or radar scans.
- **Severe Thunderstorm Watch:** severe thunderstorms are possible in your area
- **Severe Thunderstorm Warning:** severe thunderstorms are occurring.

Note: Tornadoes typically develop in areas where severe thunderstorm watch or warning is in effect. Be vigilant to the signs of an approaching tornado. Severe thunderstorm and tornado watches are often issued several hours in advance of the thunderstorm developing. On the

other hand, it may be a rapidly developing situation with less than an hour before the storms impact.

Actions to be taken when outdoors:

- If possible, get inside a well constructed building. Move to the interior or basement of the building away from windows and doors.
- If a shelter is not available, lie in a nearby ditch or ravine or low lying area. DO NOT go into a grove of trees or under a vehicle.
- Lie flat and protect your body using your arms to protect head and neck.

Actions to be taken when at school:

INCLEMENT WEATHER AND TRANSPORTATION

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 the 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 into or out of 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, review the [Inclement Weather Administrative Procedure](#).