PROCEDURE SO113

Extreme Weather

Board Received: May 25, 2020 **Review Date:** June 2024

Accountability

1. Frequency of Reports – As needed
2. Criteria for Success – safety issues addressed
   – clear guidelines and communication for schools and Board buildings

Purpose

The purpose of this document is to provide steps to be used by administrators and employees when extreme weather conditions (hot/cold) may produce health implications.

This procedure ensures compliance with Ministry of Labour Health and Safety Regulations and Ministry of Education to create a safe environment in all Grand Erie Buildings. This includes ensuring schools are safe for students, workers and visitors.

Application

This procedure applies to all school board staff, students and visitors.

1. Definitions

(a) Heat cramps: A heat-induced condition characterized by painful cramps in the arms, legs or stomach which can occur at work or later at home. This condition can be a warning of other more serious heat-induced illnesses.

(b) Heat exhaustion: A heat-induced condition characterized by sweating, cool-moist skin, body temperature over 38°C, weak pulse, abnormal or low blood pressure.

(c) Heat rash: A heat-induced condition characterized by a red, bumpy rash with severe itching.

(d) Heat stress: Heat stress refers to an increase in the body's core temperature. This could be related to a variety of factors, including; high temperature, humidity, radiant heat and activity level. If a person is experiencing heat stress then serious heat-related illnesses can occur, including; heat rash, heat cramps, heat exhaustion, or heat stroke.

(e) Heat stroke: A heat-induced condition characterized by high body temperature (41°C) and any one of the following;

- weakness
- confusion
- emotional upset and strange behavior
- hot, dry, red skin
- elevated pulse
- headaches and dizziness

Note: In the later stages, a person may experience loss of consciousness and possibly convulsions. Heat stroke is a medical emergency. If not recognized and addressed, this condition can result in serious illness or even death.

(f) Humidex: The term "humidex" is short for humidity index. Humidex is an equivalent scale intended for the public to express the combined effects of warm temperatures and humidity. Environment Canada uses humidex ratings to inform the general public when conditions of heat and humidity are possibly uncomfortable. See Appendix B Table 1.

(g) Wind chill factor is a measure of the combined chilling effect of wind and temperature. The advantage of wind chill factor over other measured methods is that it represents a real rate

of cooling. For example, the combination of a specific temperature and wind speed can be related to how fast exposed flesh will freeze. See Appendix C Table 2 Wind Chill Calculation Chart.

2. Hot Weather Action Plan

This plan will be put in place when in place when there is an elevated risk of dealing with excessively hot and humid weather (usually between May 1 and September 30)

The plan will be initiated when all of the following conditions occur:

- When heat waves/warnings are triggered in our Region: 2+ consecutive days reaching daytime maximum temperatures of 31°C or higher and an evening minimum temperature of 20°C
- When the humidex reaches or exceeds 35°C.
- When there is a smog alert combined with higher temperatures; and
- When there is an Environment Canada Humidex advisory in regard to ambient air temperatures exceeding 30°C and a humidex rating which exceeds 40°C.

Note: During excessively hot/humid days, it is recommended to consume potable water on a regular basis to stay hydrated. Supervisors are responsible to ensure that potable water (ex: drinking fountains, bottle filling stations, tap water, etc.) is available for consumption as required.

3. Controls and Reactive Measures

When there is a potential for exposure to excessively high temperatures which may cause heat stress- related illnesses, control measures must be taken to control exposure to excessive heat in the workplace.

Note: First aid or medical attention including emergency response may be required to treat heat stress related medical incidents.

Administrator/Supervisor's Actions:

1. Monitor of environmental conditions (including humidex) and the possibility of heat stress related illness, especially during the first week of elevated temperatures while individuals are acclimatizing.
2. Ensure that trained First Aid providers are available to respond to heat related illnesses throughout periods during which heat stress related illness is likely to occur.
3. Communicate heat stress related information and recommendations to all workers. Provide information on heat stress and staying cool and hydrated to students that is age appropriate.
4. The administrator shall make announcements throughout the day reminding staff and students of hydration needs.
5. A cool location should be made available in the building to allow workers to cool down during break and lunch times.
6. Consideration should be given for outdoor activities with students like recess etc. to encourage the use of shaded areas and limiting physical activity to stay cool.
7. Ensure staff are trained to recognize signs and symptoms of heat stress, along with the causes, treatment and preventative action (refer to Appendix A). A "buddy system" can be used where staff monitors each other for signs of heat stress since people may not notice their own symptoms.
8. Modify activities that involve physical exertion, exposure to sun and hot environments (rest periods, hydration, activity location change, and greater vigilance for heat stress symptoms should be considered).

9. Review schedules for individuals exposed to high temperature conditions (such as grounds staff and during summer clean) and increase the frequency and or length of rest breaks when possible.
10. Schedule strenuous jobs to be done during cooler times of the day.
11. Investigate and follow-up on any high temperature related incidents which are reported or observed.
12. Encourage staff to open windows to allow air to circulate where effective and applicable.
13. Promote the use school purchased portable fans to assist in circulating air.
14. Use blinds, curtains, or reflective coatings on windows to reduce direct sunlight.
15. Relocate staff and students when necessary to a cooler location (e.g. third floor class moved to the first floor, cafeteria, library or outdoors).
16. Encourage parents/guardians to remind children about safe play in hot weather at all opportunities. Appendix E contains key messages for parents/guardians that can be sent home with children.

Worker Responsibilities:

1. Wear loose fitting clothing that is light in weight and covers the head to prevent exposure to direct sunlight when outdoors in the summer months. Light colour clothing is better than dark, in hot weather.
2. Wear clothing made of fabrics that wick sweat away from the skin and allow sweat to evaporate, in hot weather.
3. Staff should dress appropriately for cold weather months, (layers, proper winter footwear, coat, hat and mitts for outside work).
4. Staff should alter time of day for physically demanding tasks and/or reduce pace of work.
5. Alter type of physical activities for students.
6. Staff and students should eat lightly and drink plenty of liquids to replace fluid loss due to heat. The Ontario Ministry of Labour recommends drinking a cup of water every 20 minutes in extreme heat. Fluids include water or fruit juice, not caffeinated drinks.
7. Wear sunscreen with an SPF of 15 or higher whenever working outdoors; other protective measures are a hat and sunglasses.
8. Use available fans to help increase circulation.
9. Open interior doors and perimeter windows to increase the exchange of fresh air (when exterior temperatures are cooler)
10. Turn off or limit the use of heat generating equipment and appliances if safe and practical to do so
11. Be conscious of medications side effects and avoid beverages which contain sugars and caffeine as this may contribute to dehydration

Note: Additional controls to prevent exposure to high temperatures may be required for vulnerable individuals such as workers and students with special needs or medical conditions.

Personal Risk Factors Affecting Heat Tolerance

There are several factors that can affect an individual's level of heat tolerance and his/her ability to work in hot environments. These factors include but are not limited to:

- Diseases such as cardiovascular, multiple sclerosis, diabetes, etc.
- Physical conditions such as pregnancy, reduced level of fitness, and age.
- Use of therapeutic drugs and medications (e.g. Blood pressure medications, diuretics, etc.)

It is important for individuals to seek advice from their personal physician if they are feeling the effects of heat and to identify any restrictions related to working in hot conditions. Staff should provide information about specific heat related restrictions to their supervisor. Appendix E

contains key messages for parents/guardians related to hot weather that can be sent home with children. See Appendix F Heat Stress Awareness Tool.

4. Cold Weather Conditions

4.1 Outdoor Temperature

Low temperatures, especially combined with strong winds, can lead to frost nip and frost bite and in extreme cases, hypothermia (Refer to Appendix CTable 1 for a list of cold related signs and symptoms and preventative measures that can be taken).

Wind chill factor is a measure of the combined chilling effect of wind and temperature. The advantage of wind chill factor over other measured methods is that it represents a real rate of cooling. For example, the combination of a specific temperature and wind speed can be related to how fast exposed flesh will freeze. See Appendix B Table 2 Wind Chill Calculation Chart.

4.2 Cold Weather and Outdoor Play

Time spent outdoors is an integral part of the school day. Children need fresh air and exercise and time spent outside affords students an opportunity to break free from the structure of the classroom.

With the Canadian climate, time spent outside could mean anything from applying sunscreen to donning extra mittens and a hat, depending on the season. In the winter, it is important children come to school prepared for the cold. Boots, mittens or gloves and hats should be worn to school and it's a good idea for parents/guardians to provide extra mittens, socks, etc. in the event they are needed.

When the temperature or wind chill reaches -20°C (twenty degrees below zero, Celsius), students will be granted immediate entry to school upon arrival, and students will remain indoors during nutrition breaks. When temperature thresholds are in effect, students are required to keep their outdoor coats/jackets with them throughout the instructional day, in case of a need to evacuate the school.

When the temperature or wind chill reaches -15°C (fifteen degrees below zero, Celsius), Principals must consider reducing the amount of time students will be exposed. Consideration of other factors before sending children outside includes:

- condition of playground (ice, snow, etc.)
- location of the school (perhaps the building or trees block the wind on the playground)
- the age of the students
- the adequacy of student clothing

School Staff should encourage parents/guardians to dress children appropriately at all opportunities. Appendix D contains key messages for parents/guardians related to cold weather that can be sent home with children.

APPENDIX A

Ministry of Labour, Health and Safety Guidelines for Treatment and Prevention of Hot Weather-Related Hazards

	Cause	Symptoms	Treatment	Prevention
Heat Rash	Hot humid environment; plugged sweat glands.	Red bumpy rash with severe itching.	Change into dry clothes and move to a cool area. Rinse skin with cool water.	Wash regularly to keep skin clean and dry.
Sunburn	Too much exposure to the sun.	Red, painful, or blistering and peeling skin	If the skin blisters, seek medical aid. Use skin lotions (avoid topical anesthetics) and work in the shade.	Work in the shade; cover skin with clothing; apply skin lotions with a sun protection factor of at least 15. People with fair skin should be cautious.
Heat Cramps	Heavy sweating drains a person's body of salt, which cannot be replaced by just drinking water.	Painful cramps in arms, legs or stomach, which occur suddenly at work or later at home. Heat cramps are serious because they can be a warning of other more dangerous heat induced illnesses.	Move to a cool area; loosen clothing and drink cool salted water (1 tsp. Salt per gallon of water) or commercial fluid replacement beverage. If the cramps are severe or don't go away, seek medical aid.	Reduce activity levels and/or heat exposure. Drink fluids regularly. Workers should check on each other to help spot the symptoms that often precede heat stroke.
Fainting	Fluid loss and inadequate water intake.	Sudden fainting after at least two hours of work; cool moist skin; weak pulse.	GET MEDICAL ATTENTION. Assess need for CPR. Move to a cool area; loosen clothing; make person lie down; and if the person is conscious, offer sips of cool water. Fainting may also be due to other illnesses.	Reduce activity levels and/or heat exposure. Drink fluids regularly. Workers should check on each other to help spot the symptoms that often precede heat stroke.
Heat Exhaustion	Fluid loss and inadequate salt and water intake causes a person's body's cooling system to start to break down.	Heavy sweating; cool moist skin; body temperature over 38°C; weak pulse; normal or low blood pressure; person is tired and weak and has nausea and vomiting; is very thirsty; or is panting or breathing rapidly; vision may be blurred.	GET MEDICAL AID. This condition can lead to heat stroke, which can kill. Move the person to a cool shaded area; loosen or remove excess clothing; provide cool water to drink; fan and spray with cool water.	Reduce activity levels and/or heat exposure. Drink fluids regularly. Workers should check on each other to help spot the symptoms that often precede heat stroke.
Heat Stroke	If a person's body has used up all its water and salt reserves, it will stop sweating. This can cause body temperature to rise. Heat stroke may develop suddenly or may follow from heat exhaustion.	High body temperature (over 41°C) and any one of the following: the person is weak, confused, upset or acting strangely; has hot, dry, red skin; a fast pulse; headache or dizziness. In later stages, a person may pass out and have convulsions.	CALL AMBULANCE. This condition can kill a person quickly. Remove excess clothing; fan and spray the person with cool water; offer sips of cool water if the person is conscious.	Reduce activity levels and/or heat exposure. Drink fluids regularly. Workers should check on each other to help spot symptoms that often precede heat stroke.

APPENDIX B

Table 1: Humidex Reading and Degree of Discomfort

TEMPERATURE RANGE INCLUDING HUMIDEX	DEGREES OF COMFORT	
19-24	Comfortable	A temperature range in which most individuals are comfortable
26-34	Some discomfort	Some individuals may experience discomfort
35-44	Great discomfort	Most individuals will experience high levels of discomfort (initiate hot weather action plan and avoid exertion)
45 and above	HEALTH RELATED ILLNESS LIKELY TO OCCUR	

APPENDIX C

Table 1: Environment Canada Wind Chill Hazards and Prevention

Wind Chill	Description	Health Concern	What to Do
0 to –9	Low	• Slight increase in discomfort	• Dress warmly, with the outside temperature in mind.
-10 to –27	Low	• Uncomfortable • Risk of hypothermia if outside for long periods without adequate protection	• Dress in layers of warm clothing, with an outer layer that is wind resistant. • Wear a hat, mittens and scarf. • Keep active
-28 to –39	Increasing risk: exposed skin can freeze in 10 to 30 minutes	• Check face and extremities (fingers, toes, ears and nose) for numbness or whiteness • Risk of hypothermia if outside for long periods without adequate protection	• Dress in layers of warm clothing, with an outer layer that is wind resistant. • Cover exposed skin: wear a hat, mittens and a scarf, neck tube or facemask. • Keep active.
-40 to –47	High risk: exposed skin can freeze in 5 to 10 minutes	• Check face and extremities frequently for numbness or whiteness (frostbite) • Risk of hypothermia if outside for long periods without adequate protection	• Dress in layers of warm clothing, with an outer layer that is wind resistant. • Cover exposed skin: wear a hat, mittens and a scarf, neck tube or facemask. • Keep active.

Table 2: Environment Canada Wind Chill – Minutes to Frostbite

The following are approximate values

Temperature (°C) / Wind (km/h)	-15	-20	-25	-30	-35	-40	-45	-50
10	*	*	22	15	10	8	7	2
20	*	30	14	10	5	4	3	2
30	*	18	11	8	5	2	2	1
40	42	14	9	5	5	2	2	1
50	27	12	8	5	2	2	2	1
60	22	10	7	5	2	2	2	1
70	18	9	5	4	2	2	2	1
80	16	8	5	4	2	2	2	1

* = Frostbite unlikely

The wind speed, in km/h, is at the standard anemometer height of 10 metres (as reported in weather observations).

Legend:

Frostbite possible in 2 minutes or less	2
Frostbite possible in 3 to 5 minutes	5
Frostbite possible in 6 to 10 minutes	10

APPENDIX D

Suggested Parent/Guardian Guidelines for Cold Weather

Winter can be a wonderful time for play. Participating in winter sports will help keep the whole family healthy, but injuries can spoil the fun. Here's how to keep kids safe during winter play.

Clothing for outdoor play:

All winter activities require warm, dry clothing. To prevent frostbite, children should be dressed in warm clothes, including:

- a hat (warm, close-fitting, and covering ear lobes; not a 'fashion' hat or baseball cap),
- mittens (gloves do not keep hands warm as effectively as mittens),
- loose layers (an absorbent synthetic fabric next to skin, a warmer middle layer, and a water resistant/repellent outer layer),
- socks A single pair of socks, either wool or a wool blend (with silk or polypropylene) is better than cotton which offers no insulation when wet. Avoid extra thick socks as they can cause cold feet by restricting blood flow and air circulation around the toes.
- boots Be sure boots are dry and not too tight.

Children should get out of wet clothes and shoes as quickly as possible as they are the biggest factors in frostbite.

Jackets should be zipped up. To avoid strangulation during play, use tube-shaped neck warmers instead of scarves. If scarves must be used, tuck them into jackets. Remove drawstrings on hoods and jackets because they are also a safety hazard; better yet, buy clothes without drawstrings.

Safe weather for outdoor play:

Children must play indoors if the temperature falls below -20C, regardless of the wind chill factor.

Children must play indoors, regardless of the temperature, if the following occurs:

- The wind chill factor is reported as -20 C or greater (This is the temperature at which exposed skin freezes in a few minutes

Adopted from guidelines published by The Hospital for Sick Children, University of Toronto.

APPENDIX E

Suggested Parent/Guardian Guidelines for Hot Weather

Summer can be a wonderful time of year, but it also brings warmer weather and humidity. Here's how to keep kids safe during the summer months.

- Wear loose fitting clothing that is light in weight; light colour clothing is better than dark.
- Wear clothing made of fabrics that wick sweat away from the skin and allow sweat to evaporate.
- When outside wear a bucket hat with a wide brim
- Students should eat light meals and drink plenty of liquids to replace fluid loss due to heat.
- Encourage students to bring refillable water bottles to school that they can keep with them both outside and while in class.
- Allow students to make frequent trips to the water filling stations to ensure they have water with them

Safe activities for outdoor play:

- Alter types of physical activities for students so they are not overexerting themselves in the hot weather
- Encourage kids to find shady spots to take a break when outside
- Ensure students remain hydrated when outside
- Encourage kids to wear sunscreen when outside SPF 30 or higher

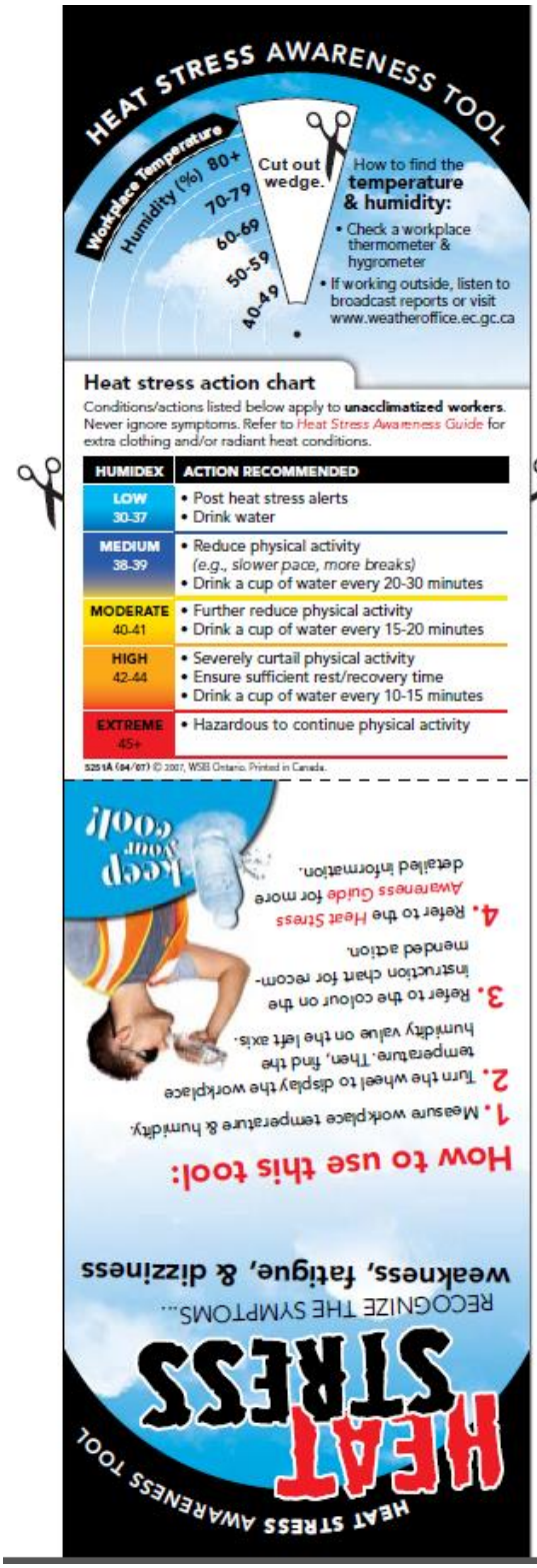
Classroom activities:
Environmental Controls such as the following can be used to help make a more comfortable environment in the warm weather

- Open windows and doors to allow air to circulate where effective and applicable.
- Use school purchased portable fans to assist in circulating air.
- Use blinds, curtains, or reflective coatings on windows to reduce direct sunlight.

Relocate staff and students when necessary to a cooler location (e.g. third floor class moved to the first floor, cafeteria

APPENDIX F

Heat Stress Awareness Tool



Once cutting and folding is complete, insert wheel so that the coloured side shows through the cut-out wedge.

Insert fastener at small black dot below the wedge to hold together, and rotate wheel.

Cut along vertical edges.

Fold on dotted line.

Cut out around wheel's black edge.