

# Beat the Heat!

During the summer months, prolonged exposure to heat can be harmful—and potentially fatal. New York City can be as much as 10 degrees warmer than surrounding areas. This is because so much of the city is made up of heat-trapping materials, such as asphalt, concrete, and metal. It's critical that students know how to stay cool and beat the heat when temperatures rise.

These are the three main types of heat-related emergencies:

1. **Heat Cramps**—painful muscle spasms that usually occur in the legs and abdomen.
2. **Heat Exhaustion**—an early indicator that the body's cooling system is becoming overwhelmed. Symptoms may include weakness and exhaustion; heavy sweating; cool, moist, pale, ashen, or flushed skin; and headache, nausea, or dizziness.
3. **Heat Stroke**—occurs when the body's systems are overwhelmed by heat and stop functioning. Heat stroke is a life-threatening condition. Symptoms may include red, hot, dry skin; vomiting; or changes in consciousness.

During a heat emergency, New York City opens cooling centers in air-conditioned facilities. Call 311 or visit [www.NYC.gov/oem](http://www.NYC.gov/oem) to find a local cooling center.

Let's get ready and stay safe all summer long!

### Heat-Related Terms and Information

- **HEAT INDEX:** An estimate of how it feels when air temperature and humidity are combined.
- **HEAT WAVE:** At least three consecutive days with high temperatures of at least 90°F.
- **HEAT ADVISORY:** For New York City, a Heat Advisory is issued when the heat index is forecast to reach 95°F to 99°F for at least two consecutive days or 100°F to 104°F for any length of time.
- **EXCESSIVE HEAT:** Issued when the heat index values are forecast to reach or exceed 105°F for at least two consecutive hours.

## Plan ahead to stay cool

Review these stay-cool strategies with your class:

- Before temperatures spike, check air conditioners to make sure they are working properly.
- If you don't have air conditioning, keep your windows open to allow fresh air to flow through your house.
- Install window shades or awnings to block the sun.
- Identify nearby air-conditioned locations, such as a shopping mall, library, or friend's house.
- Stay out of the sun if possible.
- Wear sunscreen and a hat.
- Check on neighbors, friends, and family. Those at greatest risk during extreme heat events include those age 65 or older, children younger than five, those with chronic medical conditions, those on medications, and those who are overweight.
- Drink water, even if you don't feel thirsty.
- Wear lightweight, light-colored, loose clothing.
- Children and pets should never be left in parked cars, where the interior temperature can quickly rise.



# Reinforce the message of staying safe in the heat and build skills across the curriculum with these simple activities:



## Language Arts

Ask students to imagine that they are at the park when they hear a child complaining of headache, nausea, and dizziness. The temperature outside is 95 degrees. Discuss the three main types of heat-related emergencies and have each student write a short dialogue, using correct punctuation, about how to explain to an adult that the child is showing symptoms of heat exhaustion.



## Math

Discuss how temperature is measured. Use a thermometer to model how to measure temperature using Fahrenheit and Celsius. Have students investigate the highest and lowest temperatures ever recorded on this date in New York City. Graph high and low temperatures over a week or month.

### To Learn More:

Ready New York Extreme Heat brochure,  
[http://www.nyc.gov/html/oem/html/ready/heat\\_guide.shtml](http://www.nyc.gov/html/oem/html/ready/heat_guide.shtml)

NYC Office of Emergency Management, [www.NYC.gov/oem](http://www.NYC.gov/oem)

OEM on Facebook, [www.facebook.com/NYCemergencymanagement](http://www.facebook.com/NYCemergencymanagement)

OEM on Twitter, [@nycuem](https://twitter.com/nycuem)

Notify NYC: Register for emergency notifications by visiting [NYC.gov/notifynyc](http://www.nyc.gov/notifynyc), calling 311, or following [@NotifyNYC](https://twitter.com/NotifyNYC) on Twitter

<http://www.nyc.gov/html/doh/html/environmental/heat-illness.shtml>



## Social Studies

Brainstorm ways to educate others about the dangers presented by high temperatures. Have each student write a short, simple safety message on several index cards. Be sure students include information about calling 311 or visiting [www.NYC.gov/oem](http://www.NYC.gov/oem) to find a local cooling center. Encourage students to take these home and hand them out or mail them to those who are most vulnerable to heat.



## Science

If you need to be out in the sun during a heat wave, it is important to use sunscreen. Are all sunscreens alike? Encourage your students to find out using this experiment!

### Materials for each group:

- UV beads of the same color (can be purchased from Amazon.com)
- spray sunscreens with different SPF ratings (e.g., SPF 8, 15, 30, 50)
- glue
- square of poster board
- a day with bright sunshine

1. Break the class into five groups and give each group several UV beads to glue to their poster board square.
2. Have group 1 label their poster board “No Sunscreen.” This will be your control group.
3. Have group 2 spray their beads using SPF 8 sunscreen and label their poster board “SPF 8.” Repeat with the remaining groups and sunscreens with different SPFs.
4. Take all of the groups and their poster board squares outside. Ask each student to bring his or her science notebook to record observations. As a class, compare results.