



School Indoor Air Temperature Guidance

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Introduction to Indoor Air Temperature in Schools

This guidance document provides recommendations for Connecticut public schools that serve grades K - 12. These recommendations support maintaining an optimal temperature range which can foster a healthy teaching and learning environment and ensure thermal comfort. Thermal comfort is defined as the condition of mind that expresses satisfaction with the thermal environment and is assessed by subjective evaluation.¹

Optimal Temperature Range

The optimal temperature range established by Section 45 of Public Act No. 23-167² is set between 65 and 80 degrees Fahrenheit for school buildings and facilities, except that gymnasiums and natatoriums may have a larger optimal temperature range. Thermal comfort is a complex matter, therefore multiple factors beyond temperature must be considered when working to ensure that a school's indoor environment provides thermal comfort.

Factors Affecting Thermal Comfort

Humidity: Humidity is an important factor in thermal comfort. Higher relative humidity reduces the ability to lose heat through perspiration and evaporation. Both high and low relative humidity can be uncomfortable. It is recommended to maintain relative humidity levels between 30% and 50%, not to exceed 60%.³ In addition to affecting thermal comfort, sustained relative humidity over 60% can promote mold and mildew growth, while relative humidity below 30% can accelerate the release of fungal spores into the air.

Thermal Radiation: This involves heat transfer that typically occurs between surfaces or between a source and a surface. Controlling thermal radiation can significantly impact indoor thermal comfort.

Air Speed: Indoor air speed (velocity) affects the thermal comfort by influencing the heat exchange between occupants and the surrounding air. Higher air velocity can enhance thermal comfort when temperatures are higher.

Importance of Thermal Comfort

Thermal discomfort can lead to various adverse effects, particularly for sensitive individuals. It can worsen existing medical conditions such as asthma and contribute to heat stress, breathing difficulties, and dehydration. Cognitive impairments associated with thermal discomfort, such as reduced concentration, lethargy, and dizziness, can negatively impact student performance.

Young children are more vulnerable to heat-related illnesses than older children and adults. For signs and symptoms of heat-related illnesses and recommendations for what to do, please review the [CDC's Heat-Related Illnesses chart](#).

Recommendations for Maintaining Thermal Comfort

Consider these actions to help achieve or maintain thermal comfort:

- Modify physical activity schedules, including considering moving activities to the earlier morning hours.
- Turn off classroom lights and unnecessary electronics to reduce thermal radiation.
- Close window coverings to reduce thermal radiation.
- Use oscillating fans to increase air speed.
- Encourage hydration.
- Suggest using damp towels on the back of the neck.
- Recommend water misting bottles.
- Move individuals to air conditioned spaces (e.g., library/media center) as often and for as long as feasible.
- Encourage wearing light-colored, lightweight, loose-fitting clothing and dressing in layers.

More ideas can be found on our [Extreme Heat and Schools](#) page.

When to Consider Closing School

Ultimately, the decision to close school, or shorten the school day, will be made by each local school district. Thermal comfort is influenced by factors beyond just temperature. As such it is essential to take into account the level of relative humidity, thermal radiation, and air speeds when assessing the need to close schools. Research indicates that occupants can endure higher temperatures more comfortably in environments with lower humidity levels and adequate air circulation.

Applicability to Other Environments

Although this document is written for public schools serving grades K-12, it is equally applicable to other child-centered environments such as private schools, group childcare centers, preschools, and before and after-school programs. Where feasible, non-school programs or entities may utilize these recommendations.

For additional information you may contact the Connecticut Department of Public Health Environmental and Occupational Health Hazards Program or your [local health department](#).

References:

¹ American Society of Heating, Refrigerating and Air-Conditioning Engineers. (2023). *ANSI/ASHRAE Standard 55-2023: Thermal Environmental Conditions for Human Occupancy*. American National Standards Institute.

² Public Act No. 23-167: An Act Concerning Transparency in Education. (2023). Connecticut General Assembly. <https://www.cga.ct.gov/2023/act/Pa/pdf/2023PA-00167-R00SB-00001-PA.PDF>

³ U.S. Environmental Protection Agency. (2017). *Sensible steps to healthier school environments*. https://www.epa.gov/sites/default/files/2017-06/documents/sensible_steps_final_may2017_web.pdf

For more information, contact:

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