

## TEN TIPS FOR IMPROVING COMFORT IN SCHOOLS DURING WARM WEATHER

In recent years, Colorado has experience above normal heat temperatures that have affected our academic environment in non-air-conditioned facilities. In early fall and late spring, the heat in many of the classrooms in the District increases beyond the comfort zone of their occupants. However, by managing the ventilation well, the comfort level in most spaces can be significantly improved. Since some of these actions vary by school and by day, they cannot be totally managed centrally by the Facilities Department, and must be managed in coordination with each site, typically by the Facility Manager.

1. Filters -- Dirty filters can reduce airflow and ventilation and are the source of many "hot school" problems. Make sure all filters on all air handling equipment are in good condition. Replacement filters can be ordered through the Work Order Desk system. Many filters are available within one week. Unit ventilator filters are a special order item that can take up to a month to receive.
2. Preventive Maintenance -- Make sure all belts and pulleys on all HVAC equipment are in good condition. Also make sure the HVAC pneumatic control system air compressor(s) is operating and in good repair. These compressors provide control for the HVAC units. Without air pressure the outdoor air dampers will not open and the unit will fail into the full-heat mode.
3. Pre-cool – Many (but not all) schools can benefit from pre-cooling, which is changing the operating cycle to bring in cool outside air for a "pre-cool" cycle beginning at 5:00 AM. or earlier.
4. Windows -- On schools with operable windows, open them as early in the morning as possible, but close them once the outdoor air temperature is warmer than inside. Windows can be opened again towards the end of the day, if the classroom temperature rises above the outdoor air temp. This is most effective when classrooms directly across hallways from each other open both their windows and their hallway doors at the same time to allow cross ventilation. Do not leave the windows open at night as this would pose an unacceptable security risk. Close window blinds and shades, but do not block the airflow through operable windows.
5. Doors – Many schools have classrooms with doors that open directly to the outside. Because of security concerns, we want to keep these doors closed. Interior doors may be propped open at any time to improve air flow. If there is a fire alarm, all door props must be removed and the doors closed after all students and staff has exited.
6. Lights and Equipment -- Turn off hallway and classroom lights whenever practical to reduce the additional heat generated by the lights. A number of schools have lighting systems, which allow for dimming or some of the lights to be turned off while others still are on. Use these to your advantage. Also, unneeded equipment, including classroom computers can be shut down as they add to the heat load of the room.
7. Fans – Use portable fans to circulate air in the classrooms. Over the past few years literally hundreds of portable fans have been issued to the schools for this purpose. Staff may bring additional fans into the classrooms as needed. However, it is your responsibility to insure that all plugs, extension cords and other electrical connections are in good repair and do not create a tripping hazard. All fans must have

blade guards. The use of ceiling fans is NOT authorized in the district as they can present an unacceptable safety hazard.

8. Evaporative Coolers (“swamp” coolers) -- Schools may use portable evaporative coolers, but it is the responsibility of the school to buy them. Facilities have evaluated several units and recommend the Adobe Air Whisper Cool Model P400 – many other makes and models can also be effective. To avoid health risks it is important to follow the manufacturer’s recommended maintenance procedures. Do not leave these devices turned on during unoccupied hours. In addition to wasting electricity, an evaporative cooler running 24 hours a day in an unventilated space will increase the humidity to an uncomfortable level and cause damage. Do not use evaporative coolers in computer labs, as excess humidity can damage the equipment. All maintenance procedures must be followed to prevent mold and other health risks.

a. The use of installed evaporative coolers must be approved by Facilities on a case-by-case basis. The schools will still need to allocate funding but Facilities can help determine size, specification, and if the electrical capacity at the school is adequate to handle the additional load.

b. Portable air conditioners are NOT authorized, except in a few rare circumstances, which must be specifically approved of by the Facilities Department.

9. Water – Make sure students and staff drink adequate amounts of water. Allow or even encourage them to bring personal water bottles.

10. Move – If conditions become unbearable for comfort, consideration should be given to moving the class to another room or even outside.