

Tools for Improving your IAQ IQ

by Ken Roy

A healthy school physical environment is critical to a successful learning environment. The school environment is one of eight core components in the the Centers for Disease Control and Prevention's Coordinated School Health Program (CDC 2012). There are three factors that influence the physical environment: the school facility and its campus; the presence of any hazardous biological or chemical agent, including those detrimental to one's health; and physical conditions such as humidity, lighting, noise, and temperature.

According to the Environmental Protection Agency (EPA), poor maintenance of school facilities and campuses causes increases in illnesses for students and teachers, creating higher absenteeism rates, less time staying on task in the classroom, and reduced academic achievement (2012). Programs that foster healthy indoor air quality can improve health, provide a better learning environment, improve test scores, and improve adult productivity in the school system—all helping to yield better academic outcomes. A more comprehensive and contemporary approach is indoor environmental quality, as it encompasses more than traditional indoor-air quality (IAQ) issues like ventilation, mold, etc. It would also include integrated pest management, lab clean outs, and other environmental workplace factors.

In an effort to reduce exposure to indoor classroom environmental contaminants, the EPA developed an



indoor air-quality-management program, the IAQ Tools for Schools (TfS) program. The program is a complete resource to help schools secure and maintain a healthy school facilities environment by identifying, rectifying, and preventing IAQ problems. This well-designed approach can reduce and even eliminate both acute and chronic health problems. The program website also contains a special section on how to address IAQ issues in school science laboratories.

An effective TfS model

In order to promote and adopt the TfS program in public schools, a consortium of 24 Connecticut-based agencies and organizations formed the Connecticut School Indoor Environment Resource Team (CSI-ERT). Since 1999, CSIERT has helped hundreds of schools across the state adopt the TfS program. According to CSIERT, steps that a school can take to help ensure the successful implementation of the program include the following:

- organizing a team with a committed group of individuals dedicated to ensuring proper IAQ, with clear support from senior management;
- assessing current IAQ conditions and issues;
- creating a plan outlining a strategic approach to identifying, resolving, and preventing IAQ problems;
- taking actions to improve IAQ in schools, which leads to increased student and staff health and productivity;
- evaluating the IAQ management program by tracking and assessing results; and
- communicating the intent, results, and next steps of the IAQ management program.

The EPA program provides free materials to schools, including the IAQ Tools for Schools materials at no cost, which include the IAQ TfS Action Kit, specialized fact sheets, brochures, and software programs. These materials provide in-depth information on environmental topics. CSIERT also provides a two-part, five-hour TfS training program for TfS team members in school districts. Each school district's five-member team, consisting of a teacher, nurse, administrator, custodian, and parent, is trained by environmental health professionals. In addition, high school teams are highly encouraged to include students, thus providing for a great learning opportunity. The first workshop involves training of the school's team on IAQ issues and the TfS program. The second workshop includes a walk-through exercise to train members on how to identify problem areas. A final report is then developed with recommendations and priorities for the school administration and board of education. Once received, efforts are made to correct IAQ issues.

The final word

Middle school teachers can be advocates by being involved with programs such as TfS to help foster an improved learning environment—not only in the laboratory, but also in the rest of the school. Check out the Connecticut Department of Public Health website (see Resources) and the EPA TfS website (see References) for additional information. ■

Question of the month

What kind of disinfectant can be used to clean lab workstations?

Answer

First, know that NSTA and other professional science associations do support the “green clean” approach for schools. In this situation, a green cleaner should first be used on the workstations prior to applying the disinfectant. In concert with the CDC protocol for laboratories, follow up with use of a disinfectant, such as a 10% bleach or 70% ethanol solution to wipe down benches and work areas. There should be a standing time of about 15 minutes or more.

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References

- Centers for Disease Control and Prevention (CDC). 2012. Components of coordinated school health. www.cdc.gov/healthyyouth/cshp/components.htm.
- Connecticut School Indoor Environment Resource Team (CSIERT). EPA indoor air quality TfS program and Connecticut's school indoor environment resources. www.ct.gov/dph/lib/dph/environmental_health/eoha/pdf/tfs_overview_&_training_program.pdf
- Environmental Protection Agency (EPA). 2012. Creating healthy indoor environments in schools. www.epa.gov/iaq/schools/

Resources

- Connecticut Department of Public Health. Healthy environments in Connecticut schools—www.ct.gov/dph/schools
- Pollution prevention measures for safer school laboratories—www.epa.gov/region8/humanhealth/children/pdf/1PreventiveMeasuresToolkit.pdf.

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