



Instructions

Read this section before completing the Teacher's Classroom Checklist.

Background Information for Teacher's Classroom Checklist

GENERAL CLEANLINESS

Regular and thorough classroom cleaning helps to ensure good indoor air quality (IAQ). While custodians typically clean the classroom, teachers also play an important role in promoting and maintaining classroom cleanliness. The presence of dirt, moisture, and warmth stimulates the growth of molds and other biological contaminants. Unsanitary conditions attract insects and vermin, leading to possible IAQ problems from animal or insect allergens. Excessive or improper use of pesticides for secondary control of insects, vermin, and head lice can also cause IAQ problems.

ANIMALS IN THE CLASSROOM

Some people are allergic to common indoor pollutants, such as pet dander.

Isolated or repeated single exposure to allergens may cause a previously non-allergic or non-sensitive person to become allergic to that allergen. Repeated exposure may also cause increased sensitivity in a person who is already allergic.

Pay attention to the needs of sensitive students, especially those with asthma.

DRAIN TRAPS

Drain traps, if present, can become a problem when the water in the drain trap of a pipe evaporates due to infrequent use, allowing sewer gases to enter the room.

EXCESS MOISTURE

Excess moisture contributes to mold growth. Mold can trigger allergic reactions and asthma in sensitive individuals. Mold can also cause odors and other IAQ problems. Excess moisture is the result of condensation on cold surfaces, leaking or spilled liquid, or excess humidity. Note any signs of present or recurrent moisture.

Monitor for condensate (condensed water, or "fog") on cold surfaces.

Check for leaks or signs of moisture from plumbing or roofs.

Clean spills promptly.

- For large spills on carpets, contact custodial staff immediately. (Clean and dry carpets within 48 hours to prevent mold growth.)
- If liquids spill in the unit ventilator, request that custodians clean the unit ventilator and replace the filter.
- Report previous spills on carpets or in unit ventilators to a custodian, since they can affect current IAQ.

THERMAL COMFORT

Temperature and relative humidity are aspects of IAQ that can affect comfort. Changing thermostat settings or opening windows to control temporary fluctuations in temperature can not only worsen comfort problems but also have an adverse effect in other areas of the school. Comfort for all occupants is a worthy objective, but because people have different levels of comfort, a more practical goal is assuring that 80 percent of the occupants are comfortable.

VENTILATION

Ventilation is the process by which air is circulated throughout the school and your classroom. Stale indoor air is exhausted to the outside, and fresh (outdoor) air is drawn into the building. Schools may either have mechanical ventilation (supplied by fans) or natural ventilation (i.e., operable windows). Improperly-operated or poorly-maintained ventilation systems can cause serious IAQ problems. In addition, the ventilation system can carry air pollutants from one location in the school to another.

Use the HVAC diagrams in the *IAQ Background* to determine your classroom's ventilation method. If you have mechanical ventilation, confirm that air is flowing into the room from the air supply vent(s). Check for airflow by holding a piece of tissue paper near the air supply vent(s); if air is flowing, the tissue will flutter away from the supply vent. Don't obstruct the airflow with books, papers, furniture, or other obstacles. Never place anything on top of unit ventilators.

If you have mechanical ventilation, confirm that air is flowing from the room into the air return grille(s). Check for airflow at air return grille(s) in the same manner as above. If air is flowing, the plastic or tissue will be pulled toward the return. In addition, a piece of plastic that nearly covers the grille will stick to the face of the grille if air is flowing properly. Again, don't obstruct airflow with books, papers, furniture, or other obstacles.

Check for unexplained odors. Odors, or the need to use scented air fresheners, may indicate a ventilation problem. Remember, the ventilation system can carry air contaminants from another location in the school to your classroom.

In addition, maintenance vehicles or buses should never idle near the outside air intake vents. If your school or state has anti-idling policies in place, locate and review these. If not, consider advocating the creation of such a policy (refer to **Appendix B** of the *IAQ Coordinator's Guide*).

LOCAL EXHAUST FANS

Use local exhaust fans and fume hoods to prevent air pollutants and moisture from accumulating in, or spreading beyond, the local area or classroom. Local exhaust fans may be used to exhaust entire rooms (for example, bathrooms or locker rooms). Fume hoods are appropriate for activities that generate significant quantities of pollutants in a local area within a room (for example, science experiments, spray painting, and welding).

Determine if your classroom activities generate air pollutants and whether your classroom is equipped with local exhaust fans and/or fume hoods. If there are no activities that generate air pollutants, you do not need a local exhaust fan or fume hood.

Confirm that fume hoods and local exhaust fans function properly.

Check for air flow when fans are turned on. (Hold a piece of tissue paper near the fan—or within the space of the fume hood—to see whether it is pulled away from the room). Train students and others who use the classroom or equipment on when and how to use the fume hoods and fans. Ensure that pollutant-generating activities are conducted under the fume hood with exhaust fan turned on. Monitor use throughout the year.

Confirm that fume hoods and fans are used whenever activities that generate pollutants take place.

EDUCATIONAL SUPPLIES

Ensure that you are familiar with all of your supplies. Read labels and identify precautions regarding fumes or ventilation. Request information and Material Safety Data Sheets (MSDS) from suppliers and manufacturers and ensure that this information is accessible to staff and parents. For example, consider posting MSDSs on the school's Web site.

Follow good safety, handling, and storage practices. Develop appropriate procedures and have cleaning supplies (i.e., absorbent materials, etc.) available in case of spills. In addition, label all hazardous supplies with the date of receipt/preparation and pertinent precautionary information. Tightly seal containers. When ready to discard the substance, follow recommended procedures. Be especially careful to secure compressed gas cylinders. Also, remember that supply storage areas should be separate from classrooms and well ventilated.





Minimize exposure to hazardous materials (as recommended in guidance documents). Substitute less- or non-hazardous materials where possible. Always use local exhaust fans and/or fume hoods and isolate contaminant-producing activities or operations. Use moist, pre-mixed products (rather than powdered) and techniques that require as little hazardous material as possible.

ART SUPPLIES

Art supplies may emit contaminants during use and storage. In addition, certain activities (for example, firing ceramic kilns) may generate air contaminants or heat up the classroom, causing thermal discomfort to occupants.

By federal law, potentially toxic supplies must have appropriate warning labeling. The Labeling of Hazardous Art Materials Act (Public Law 100-695) requires that all art materials be reviewed to determine their potential for causing a chronic hazard and be labeled accordingly. The U.S. Consumer Product Safety Commission recommends that parents and others buying art materials, school supplies, and toys (such as crayons or paint sets) purchase only those products that are labeled "Conforms to ASTM D-4236."

In classrooms, teachers should ensure that safety precautions are followed. Examples of art supplies that can contribute to IAQ problems include solvents, inks, adhesives, glues, wax varnishes, lacquers, powdered pigments, acids, clays, paints, and firing kilns. Check whether your supplies are listed as toxic or nontoxic. Supplies that are nontoxic should be labeled accordingly by the Art and Creative Materials Institute (<http://www.acminet.org/>).

Read labels and identify precautions regarding fumes or ventilation (e.g., vent operational kilns to the outside). If you make purchasing decisions or recommend products for purchase, confirm that supplies are safe to use.

SCIENCE SUPPLIES

Some teaching aids in science laboratories can contribute to IAQ problems. Examples of potentially troublesome science supplies include solvents, acids, flammables, caustics, biological products, and compressed gases. Remember to conduct science experiments in well-ventilated rooms using fume hoods and local exhaust systems. Basic safety precautions should be followed at all times to prevent spills or other mishaps that cause air contamination.

The following guidance documents are available:

Chemical Safety for Teachers and their Supervisors. 2001. American Chemical Society. (800-227-5558, <http://membership.acs.org/c/ccs/publications.htm>)

Safety in the Elementary (K-6) Science Classroom, Second Edition. 2001. American Chemical Society. (800-227-5558, <http://membership.acs.org/c/ccs/publications.htm>)

Prudent Practices in the Laboratory: Handling and Disposal of Hazardous Chemicals, Second Edition. 1995. National Research Council. National Academy Press. (<http://www.nap.edu/>)

Science and Safety, Making the Connection. Council of State Science Supervisors, American Chemical Society, Eisenhower National Clearinghouse, National Aeronautic and Space Administration, and National Institutes of Health. (<http://csss.enc.org/safety.htm>)

School Science Laboratories: A Guide To Some Hazardous Substances. 1984. Council of State Science Supervisors and U.S. CPSC. (800-638-2772) U.S. GPO #1984 421-506/3308.

Manual of Safety & Health Hazards in the School Science Laboratory. 1980. NIOSH/U.S. Department of Health & Human Services, National Technical Information Service. (800-553-6847) #PB-85-238-228.

INDUSTRIAL/VOCATIONAL SUPPLIES

Industrial and vocational education materials and operations can create IAQ problems. A few examples of activities that may contribute to IAQ problems include machining, grinding, painting, soldering, welding, and baking/heating. Supplies such as solvents, fuels, and adhesives can also adversely affect IAQ.

LOCKER ROOMS

Locker room conditions that affect IAQ include standing water, high humidity, warm temperatures, and damp or dirty clothing. In addition, some of the methods necessary to control germs and odors in the locker room (for example, use of disinfectants) may themselves contribute to IAQ problems if used improperly.

It is important to maintain cleanliness and reduce excess moisture in the locker room. Verify that showers and other locker room areas are cleaned regularly and properly. In addition, you should dry wet towels promptly, wash and dry soiled practice uniforms regularly, encourage students to take soiled clothes home, and operate exhaust fans to remove moisture. Ensure that the local exhaust fan in the locker room is functioning and that drain traps contain water so that sewer gases do not enter the room.

