

Example of  
Tools for Schools  
Action Packet

**CT School Indoor Environment Resource Team**

# Sample Memo for School Staff

step 1

## Forest Lake School

[Date]

Dear Staff Member,

This month, [Forest Lake] begins a new program to monitor and improve indoor air quality in our school. This letter accompanies specific guidance prepared by the U.S. Environmental Protection Agency (EPA) that shows how you can make this program a success.

[Forest Lake] is proud to be taking a leadership role in providing a safe, comfortable, and productive environment for our students and staff so that we achieve our core mission - educating students. Our school will follow the EPA guidance to improve our indoor air quality (IAQ) by preventing as many IAQ problems as possible, and by quickly responding to any IAQ problems that may arise.

Good air quality requires an ongoing commitment by everyone in our school, because each of us daily makes decisions and performs activities that affect the quality of the air we breathe. You can make an important contribution to this IAQ improvement program by reading the background information and applying the simple, yet important, activities in your Checklist, which is attached.

When you have read the IAQ Backgrounder and completed the Checklist, return the Checklist to our IAQ Coordinator [Name], so that [he or she] can follow up on any unresolved IAQ problems you may have. [Name] has agreed to administer the IAQ Management Plan, which includes taking a team leadership role, coordinating emergency response, and serving as our information resource on IAQ. [Name] may be contacted at [phone and room number]. Please return the Checklist to [him or her] by [date].

The school newsletter will carry progress reports as we learn more about indoor air quality in our school.

Sincerely,

[Name]

[Principal or Superintendent]

# Indoor Air Quality Backgrounder: The Basics

**I**ndoor air quality (IAQ) is an increasingly important issue in schools across the nation. IAQ can directly affect the health and comfort of students and staff. There are many ways that school occupants can help to improve air quality. EPA developed the *Indoor Air Quality Tools for Schools (IAQ TFS)* Program to help schools address many IAQ issues using practical and often low-cost measures (such as unblocking ventilation supply vents to improve airflow).

By simply reviewing this *Indoor Air Quality Backgrounder* and completing the IAQ checklists, occupants can learn how to make a significant impact on IAQ and provide a healthy learning and working environment.

This guidance is based on the following principles:

- Most IAQ problems can be prevented and resolved by school staff through simple, inexpensive measures.
- The cost and effort needed to **prevent** most IAQ problems is significantly less than the cost and effort required to **resolve** problems after they develop.

## WHY IAQ IS IMPORTANT TO YOUR SCHOOL

Most people are aware that outdoor air pollution can impact their health, but indoor air pollution can also have significant, harmful effects. EPA studies of human exposure to air pollutants indicate that indoor levels of pollutants may be two to five times—and occasionally more than 100 times—higher than outdoor levels. EPA and its Science Advisory Board consistently rank indoor air pollution among the top five environmental health risks to the public.

This is especially important to schools, as children may be more susceptible to air pollutants.

Failure to prevent or respond promptly to IAQ problems can:

- Increase potential for long- and short-term health problems for students and staff.
- Negatively impact student attendance, comfort, and performance.
- Reduce teacher and staff comfort and performance.
- Accelerate deterioration and reduce efficiency of school facilities and equipment.
- Increase potential for school closings or relocation of occupants.
- Strain relationships among school administration, parents, and staff.
- Create negative publicity.
- Impact community trust.
- Create liability problems.

## UNDERSTANDING IAQ PROBLEMS AND SOLUTIONS

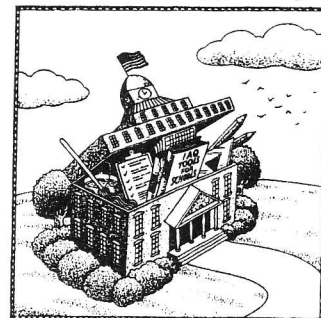
To understand IAQ problems and solutions, it is important to know what factors affect IAQ. These include:

- Sources of indoor air pollutants.
- Heating, ventilation, and air conditioning (HVAC) systems.
- Building occupants.
- Pollutant pathways.

## SOURCES OF INDOOR AIR POLLUTANTS

Indoor air contaminants can originate within the building or be drawn in from outdoors. Air pollutants consist of numerous particulates, fibers, mists, bioaerosols, and gases. It is important to control air pollutant sources (see the table on the next page), or IAQ problems can arise—even if the HVAC system is properly operating.

## Indoor Air Quality



## Tools for Schools

Good IAQ helps to provide a healthy and productive environment for students, teachers, and staff in order to assist a school in its core mission—educating children.

A complicating factor is that indoor air pollutant concentration levels can vary by:

- Time (for example, weekly, during floor stripping); and
- Location (within a school or even within a single classroom).

### HVAC System Design and Operation

Properly designed HVAC equipment in a school helps to:

- Control temperature and humidity to provide thermal comfort.
- Distribute adequate amounts of outdoor air to meet ventilation needs of school occupants.
- Isolate and remove odors and pollutants through pressure control, filtration, and exhaust fans.

Not all HVAC systems accomplish all of these functions. Some buildings rely only on natural ventilation. Others lack mechanical cooling equipment, and many function with little or no humidity control.

The two most common HVAC designs in schools are unit ventilators and central air-handling systems. Both can perform the same HVAC functions, but a unit ventilator serves a single room while a central air-handling unit serves multiple rooms.

The diagrams on page 5 of this *Indoor Air Quality Backgrounder* show how three typical HVAC designs circulate air through classrooms. As shown in the diagrams, it is important that all rooms have both an air supply and exhaust.

## TYPICAL SOURCES OF INDOOR AIR POLLUTANTS

Outdoor Sources	Building Equipment	Components and Furnishings	Other Indoor Sources
<p><b>Polluted Outdoor Air</b></p> <ul style="list-style-type: none"> <li>• Pollen, dust, fungal spores</li> <li>• Industrial emissions</li> <li>• Vehicle emissions</li> </ul> <p><b>Nearby Sources</b></p> <ul style="list-style-type: none"> <li>• Loading docks</li> <li>• Odors from dumpsters</li> <li>• Unsanitary debris or building exhausts near outdoor air intakes</li> </ul> <p><b>Underground Sources</b></p> <ul style="list-style-type: none"> <li>• Radon</li> <li>• Pesticides</li> <li>• Leakage from underground storage tanks</li> </ul>	<p><b>HVAC Equipment</b></p> <ul style="list-style-type: none"> <li>• Microbiological growth in drip pans, ductwork, coils, and humidifiers</li> <li>• Improper venting of combustion products</li> <li>• Dust or debris in ductwork</li> </ul> <p><b>Other Equipment</b></p> <ul style="list-style-type: none"> <li>• Emissions from office equipment (volatile organic compounds, ozone)</li> <li>• Emissions from shop, lab, and cleaning equipment</li> </ul>	<p><b>Components</b></p> <ul style="list-style-type: none"> <li>• Microbiological growth on or in soiled or water-damaged materials</li> <li>• Dry traps that allow the passage of sewer gas</li> <li>• Materials containing volatile organic compounds, inorganic compounds, or damaged asbestos</li> <li>• Materials that produce particles (dust)</li> </ul> <p><b>Furnishings</b></p> <ul style="list-style-type: none"> <li>• Emissions from new furnishings and floorings</li> <li>• Microbiological growth on or in soiled or water-damaged furnishings</li> </ul>	<ul style="list-style-type: none"> <li>• Science laboratory supplies</li> <li>• Vocational art supplies</li> <li>• Copy/print areas</li> <li>• Food prep areas</li> <li>• Smoking lounges</li> <li>• Cleaning materials</li> <li>• Emissions from trash</li> <li>• Pesticides</li> <li>• Odors and volatile organic compounds from paint, chalk, adhesives</li> <li>• Occupants with communicable diseases</li> <li>• Dry-erase markers and similar pens</li> <li>• Insects and other pests</li> <li>• Personal care products</li> </ul>

## Building Occupants

The effects of IAQ problems on school occupants—including staff, students, and others—are often non-specific symptoms rather than clearly-defined illnesses. Symptoms commonly attributed to IAQ problems include:

- Headache, fatigue, and shortness of breath.
- Sinus congestion, cough, and sneezing.
- Eye, nose, throat, and skin irritation.
- Dizziness and nausea.

These symptoms could be caused by air quality deficiencies, but may also be linked to other factors—poor lighting, stress, noise, and more. Due to varying sensitivities among school occupants, IAQ problems may affect a group of people or just one individual. In addition, IAQ problems may affect people in different ways. Individuals that may be particularly susceptible to effects of indoor air contaminants include, but are not limited to, people with:

- Asthma, allergies, or chemical sensitivities.
- Respiratory diseases.
- Suppressed immune systems (due to radiation, chemotherapy, or disease).
- Contact lenses.

## Pollutant Pathways and Driving Forces

Airflow patterns in buildings are determined by the combined forces of mechanical ventilation systems, human activity, and natural effects. Air pressure differences created by these forces move airborne pollutants from areas of higher pressure to areas of lower pressure through any available openings in building walls, ceilings, floors, doors, windows, and HVAC systems. For instance, as long as the opening to an inflated balloon is kept shut, no air will flow. When opened, however, air will move from the inside (area of higher pressure) to the outside (area of lower pressure).

Even if the opening is small, air will move until the inside pressure is equal to the outside pressure.

## SIX BASIC CONTROL STRATEGIES

There are six basic control methods that can lower concentrations of indoor air pollutants. Specific applications of these basic control strategies may be noted in the attached checklist(s).

**1. Source Management** - Management of pollutant sources includes:

- **Source removal** - Eliminating pollutant sources or not allowing them to enter the school. Examples include not allowing buses to idle, not placing garbage in rooms with HVAC equipment, and replacing moldy materials.
- **Source substitution** - Replacing pollutant sources. Examples include selecting less- or non-toxic art materials or interior paints.
- **Source encapsulation** - Placing a barrier around the source so that it releases fewer pollutants into the indoor air. Examples include covering pressed wood cabinetry with sealed or laminated surfaces or using plastic sheeting to contain contaminants when renovating.

**2. Local Exhaust** - Removing point sources of indoor pollutants (through exhausting fume hoods and local exhaust fans to the outside) before they disperse. Examples include exhaust systems for restrooms and kitchens, science labs, storage rooms, printing and duplicating rooms, and vocational/industrial areas (such as welding booths and firing kilns).

**3. Ventilation** - Lowering pollutant concentrations by using cleaner (outdoor) air to dilute polluted (indoor) air. Local building codes likely specify the quantity (and sometimes quality) of outdoor air that should be continuously supplied in your school, as do voluntary standards set by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE). Temporarily increasing ventilation coupled with proper use of the exhaust system while painting or applying pesticides, for example, can be useful in diluting the concentration of noxious fumes in the air.

**4. Exposure Control** - Adjusting the time and location of pollutant exposure. An example of time control is scheduling floor stripping and waxing (with the ventilation system functioning) for Friday after school. This allows products to off-gas over the weekend while the school is unoccupied. Location control involves moving the pollutant source away from occupants or even relocating susceptible occupants.

**5. Air Cleaning** - Filtering particles and gaseous contaminants as air passes through ventilation equipment. In most cases this type of system should be engineered on a case-by-case basis.

**6. Education** - Teaching and training school occupants about IAQ issues. People in the school can reduce their exposure to many pollutants by understanding basic information about their environment and knowing how to prevent, remove, or control pollutants.

Some solutions, such as major ventilation changes, may not be practical to implement due to lack of resources or the need for long periods of non-occupancy to ensure the safety of the occupants. Use temporary measures to ensure good IAQ in the meantime. Other solutions, such as anti-idling programs, offer low-cost options that can be easily and quickly implemented.

## YOUR ROLE IN THE IAQ TEAM

As a school occupant, your activities and decisions have an impact on the quality of the school's indoor air. You can participate by completing the appropriate checklist and by continuing to apply these principles on a daily basis. Your school's IAQ Coordinator serves as a focal point for collecting IAQ information and handling IAQ concerns.

## HOW TO KNOW IF YOU HAVE AN IAQ PROBLEM

Diagnosing IAQ-related symptoms can be tricky, especially because acute (short-term) symptoms are similar to those from colds, allergies, fatigue, or the flu. There are clues, however, that can help link symptoms to IAQ problems:

- Symptoms are widespread within a class or school.
- Symptoms disappear when the students or staff leave the school building for a day or for extended periods of time.
- Onset is sudden after some change at school (such as painting or pesticide application).
- Reactions occur indoors but not outdoors.
- Symptoms have been identified by a doctor as being IAQ-related.

It is not safe to assume that a lack of symptoms means that the IAQ in your school is acceptable. Symptoms of long-term health effects (such as lung cancer due to radon) often do not become evident for many years.

## IF YOU THINK YOU HAVE AN IAQ PROBLEM

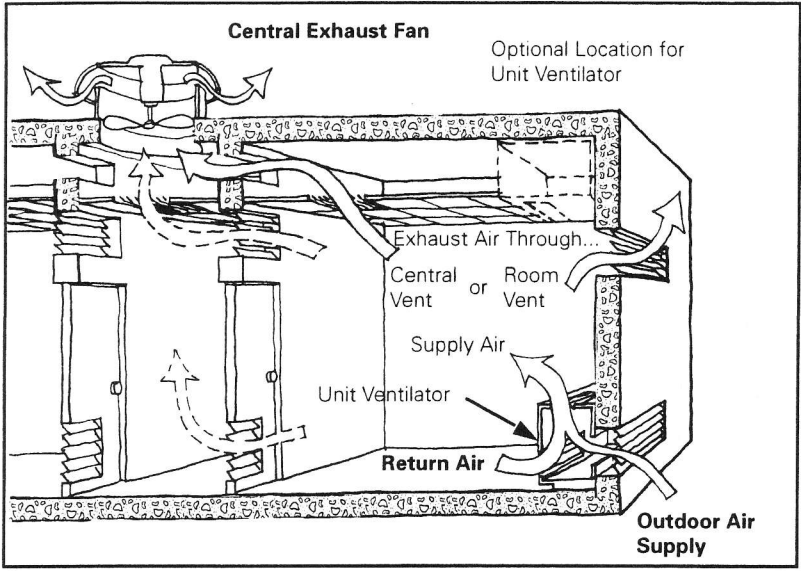
If you have a potential IAQ problem in your school or area that requires a simple solution or action, correct the problem. If the problem cannot be easily corrected or if the complaint seems to indicate a potentially severe IAQ problem, contact the IAQ Coordinator immediately. The IAQ Coordinator will investigate the problem further, either using in-house resources or by calling in help from outside the school.

## COMMUNICATION

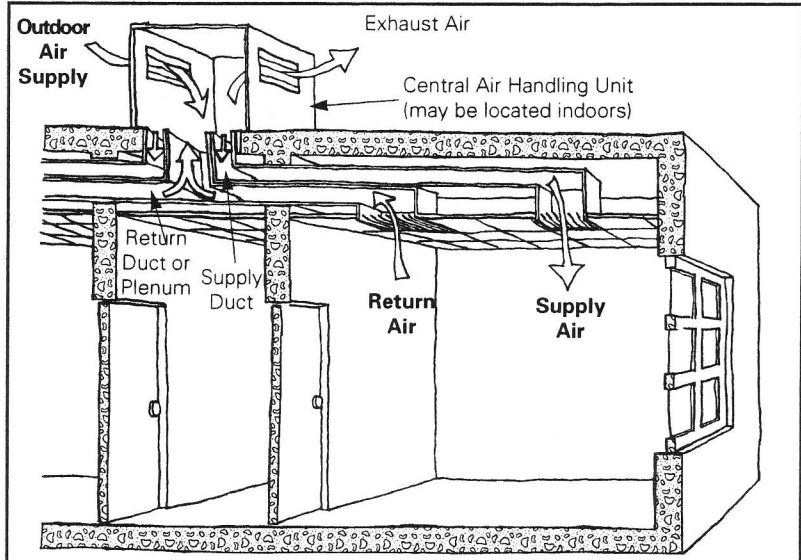
Because of the health risks involved, parents, the community, and media may react strongly to reports of poor indoor air quality in your school. It is recommended that you follow your school's IAQ communications guidelines. This typically involves referring all questions and inquiries to one central source—the IAQ Coordinator. This is the best way to avoid incomplete, incorrect, or conflicting information regarding the quality of the air in your school and any actions necessary to improve IAQ. For more information, refer to the *IAQ TJS Communications Guide*, posted on EPA's Web site: [www.epa.gov/iaq](http://www.epa.gov/iaq).

## IAQ Checklists Available

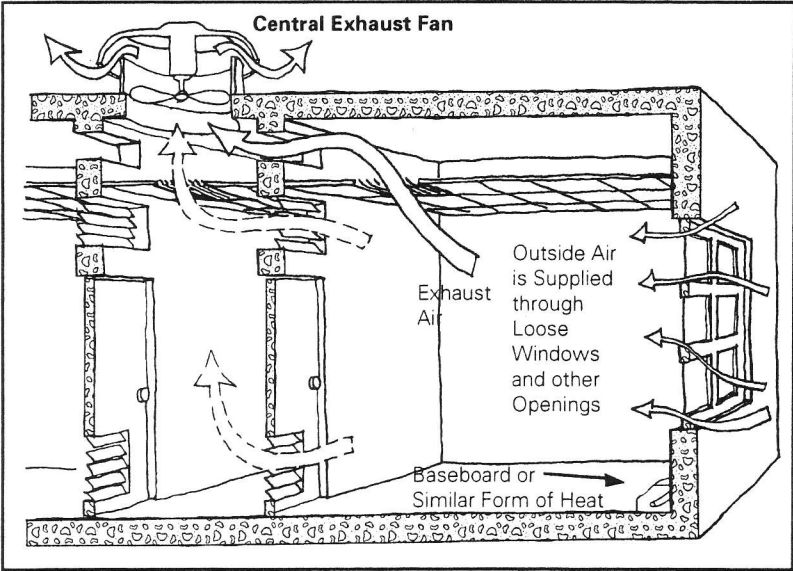
- Teacher's
- Administrative Staff
- School Official's
- Health Officer's
- Ventilation
- Building Maintenance
- Food Service
- Waste Management
- Renovation and Repairs
- Integrated Pest Management
- Walkthrough



**Air Supply through a Unit Ventilator**



**Air Supply in a Central Air Handling System**



**Air Supply in an Exhaust-only System**



### 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 Backgrounder* 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/ccs/publications.htm>)

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





# Teacher's Classroom Checklist

Name: \_\_\_\_\_  
 School: \_\_\_\_\_  
 Room or Area: \_\_\_\_\_ Date Completed: \_\_\_\_\_  
 Signature: \_\_\_\_\_

Assess the status of the following:

## 1. GENERAL CLEANLINESS

	Yes	No	N/A
1a. Rooms are dusted and vacuumed regularly.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1b. Rooms are free of clutter.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1c. Trash is removed daily.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1d. All food is stored in tightly sealed containers.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1e. Room is free of pests and vermin.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1f. Unscented, school-approved cleaners and air fresheners, if any, are used in rooms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 2. ANIMALS IN THE CLASSROOM

2a. Exposure to animal allergens is minimized.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2b. Animals are kept in cages (as much as possible).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2c. Cages are cleaned regularly.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2d. Animal cages are placed away from supply and return vents.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2e. School nurse is consulted about student allergies or sensitivities (privacy laws may limit the information that health officials can disclose).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2f. Potential allergies of students are identified.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2g. Sensitive students are moved away from animals and habitats.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 3. DRAIN TRAPS IN THE CLASSROOM

3a. Water is poured down floor drains once per week (approx. 1 quart of water).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3b. Water is run in sinks at least once per week (about 2 cups of water).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3c. Toilets are flushed once each week, especially if not used regularly.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 4. EXCESS MOISTURE IN CLASSROOMS

4a. Condensate is wiped from windows, windowsills, and window frames.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4b. Cold water pipes are free of condensate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4c. Indoor surfaces of exterior walls are free of condensate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4d. Areas around and under classroom sinks are free of leaks.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4e. Classroom lavatories are free of leaks.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4f. Ceiling tiles and walls are free of leaks (discoloration may indicate periodic leaks).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4g. Spills are cleaned promptly.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Instructions

1. Read the *IAQ Backgrounder* and the Background Information for this checklist.
2. Keep the Background Information and make a copy of the checklist for future reference.
3. Complete the Checklist.
  - Check the "yes," "no," or "not applicable" box beside each item. (A "no" response requires further attention.)
  - Make comments in the "Notes" section as necessary.
4. Return the checklist portion of this document to the IAQ Coordinator.

## 5. THERMAL COMFORT

- |   | Yes                      | No                       | N/A                      |
|---|--------------------------|--------------------------|--------------------------|
| 5a. Temperature is maintained at moderate levels .....                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5b. Drafts have been prevented .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5c. Student seating is away from direct sunlight.....                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5d. Indoor humidity is maintained at acceptable levels (between 30 and 60 percent)..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## 6. VENTILATION

- |  |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|
| 6a. Unit ventilator located (if applicable) .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6b. Air supply and return vents located (if applicable) .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6c. Air is flowing from supply vent .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6d. Air supply pathway is free from obstruction.....   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6e. Exhaust vent is working.....   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6f. The classroom is free of vehicle exhaust, kitchen/food and chemical odors...   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6g. Risk factors for mold or mildew have been minimized (refer to <b>Appendix H</b> of the <i>IAQ Reference Guide</i> )..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6h. Windows are operable.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## 7. EDUCATIONAL SUPPLIES (Art, Science, Industrial/Vocational)

- |   |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|
| 7a. Supplies and their labels reviewed .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7b. Material Safety Data Sheets are accessible .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7c. Spill clean-up procedures developed and implemented .....   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7d. All chemicals are labeled accurately with date of receipt/preparation and pertinent precautionary information.....    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7e. Supplies are stored according to manufacturers' recommendations .....   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7f. Recommended procedures for disposal of used substances understood and followed.....                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7g. Compressed gas cylinders are stored securely .....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7h. Storage areas are separated from main classroom area and are ventilated separately .....                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7i. Diluted substances, rather than concentrates, used wherever possible.....   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7j. Exposure to hazardous materials (i.e., used non-hazardous materials and pre-mixed products) minimized.....            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7k. Fume hoods capture respirable particles, gases, and vapors released within them and are exhausted to the outside..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## 8. LOCAL EXHAUST FANS

- |   |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|
| 8a. Major pollutant-generating activities, if any, identified ..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8b. Exhaust fan(s), if any, located.....                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8c. Fans operate properly.....                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8d. Adjacent rooms or halls are free of odor.....                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## 9. LOCKER ROOM

- |  |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|
| 9a. Locker room and showers are cleaned regularly and properly.....      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9b. Soiled clothes are removed regularly .....                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9c. Wet towels are removed from locker room.....                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9d. There is water in the drain trap.....                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9e. Local exhaust fan is functioning properly and used consistently..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

