



[See the Overview Document for More Information](#)

Hazard Mapping



Hazard Mapping

Identifying Hazards and Health Symptoms in the Workplace

If you cannot conduct a walkthrough in-person or would prefer first to collect data, then facilitate the following hazard mapping exercise.

A hazard map is a visual representation of the general health and safety hazards and health symptoms in the workplace. The goal of the exercise is to collect information about the hazards from staff and work toward mitigating exposures. Mapping hazards and health symptoms will help identify patterns associated with the location, timing, and type of health symptoms or hazards occurring. A group of staff from a cross-section of different job classifications should participate in this exercise to add insight. If appropriate, parents/caregivers and age-appropriate students can participate. The duration of the activity ranges from one to two hours.

A facilitator can facilitate the hazard mapping exercise during a membership meeting, local association workshop, or other event/meetings. This is a health survey that will help users identify what areas/items require further investigation. It is part of a series of documents in an NEA Building Walkthrough toolkit. The instructions below describe how to facilitate the hazard mapping exercise.

Hazard Mapping Instructions

- 1) Assign participants to work in small groups (3–5 people per group). Have each group identify a scribe, reporter, and timekeeper. Inform each group about how much time they have for each step based on the amount of time for the entire activity.

Ask each group to think of their worksite and the grounds on which it resides. Ask participants to conduct a virtual walkthrough of the building and grounds to identify actual or potential hazards or hazardous conditions and health symptoms that staff and students are experiencing in the eight tables beginning on page 8.

Each of the eight tables represents different rooms/areas of a building and includes two columns labeled “health and safety hazards” and “health symptoms,” which the scribe will document with the group’s responses.

Materials Needed

- Markers (7 different colors: red, orange, pink, green, blue, purple, and black)
- Pen/pencils
- Dot stickers: (7 different colors: red, orange, yellow, green, blue, neon pink, and neon green)
- Large notepad paper with adhesive on the back
- Easel (for large notepad paper)
- Floor plan
- Health survey
- Building walkthrough checklist or other checklists from the toolkit

If using large notepad paper, the scribe should label each room/area listed on the tables (one piece per room/area) and draw two columns (one for health and safety hazards and one for health symptoms) on each notepad paper.

- a. **Health and Safety Hazards:** As a group, brainstorm and list all possible hazards under each room/area, starting on page 8 or the notepad paper. Use the *Building Walkthrough Checklist* provided in this toolkit to help identify the hazards. It is important to note that some health and safety hazards are visible, and some are not. Some hazards cause immediate harm, while others cause delayed harm; some only take one exposure to cause harm, while others may take repeated exposures.
- b. Health and safety hazards are further divided into chemical, physical, biological, ergonomic, and stress-related categories.

**If the health and safety committee or team conducted a health survey or completed the building walkthrough checklist, incorporate those responses in this step.*

- c. **Health Symptoms:** As a group, brainstorm and list any health symptoms that students and staff are experiencing on the table for each room/area beginning on page 8. Use the *Health Survey* in this toolkit to help identify the health symptoms. Note, it is valuable to document if no health symptoms are reported in a room/area.

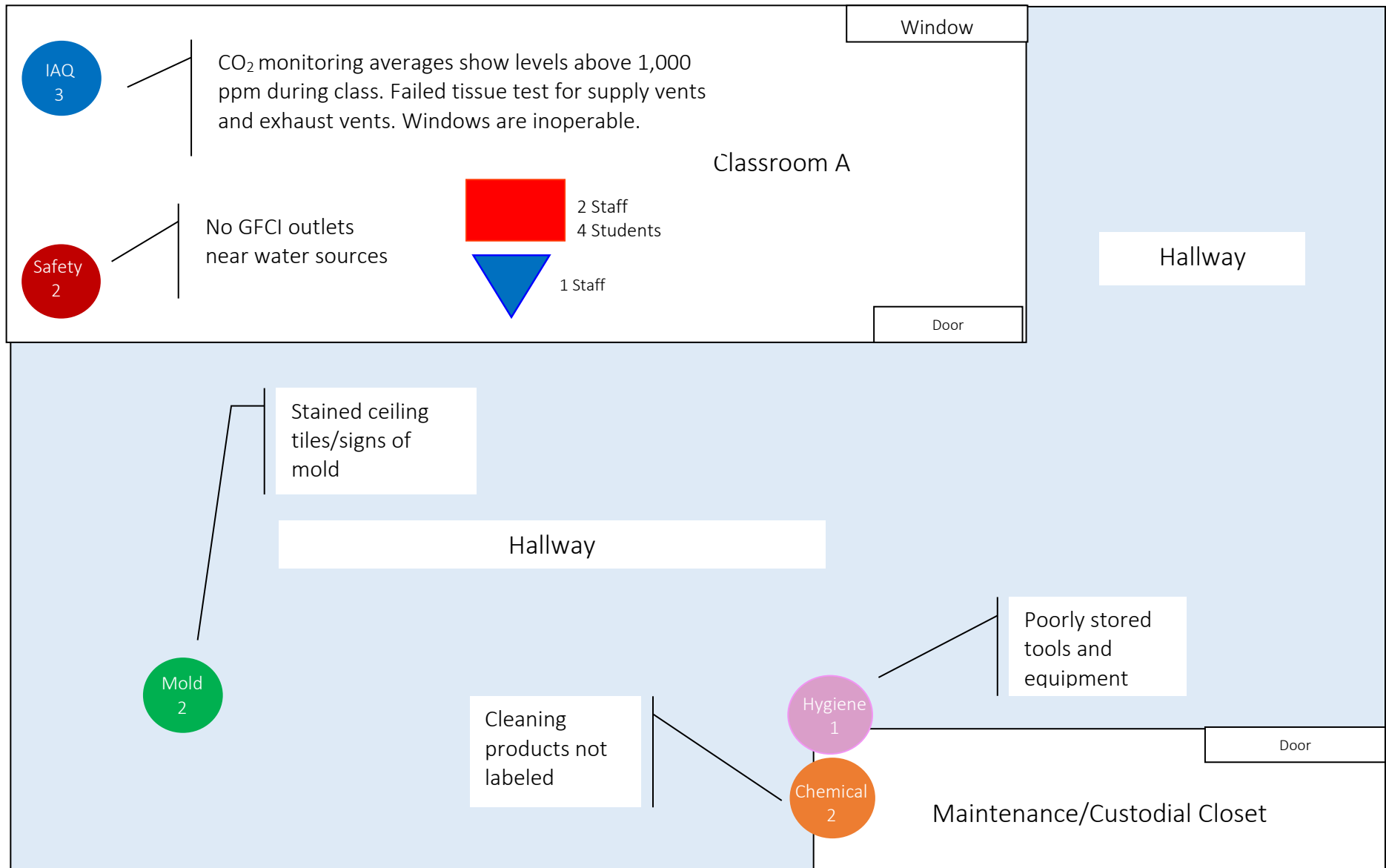
**If the local association conducted a health survey, incorporate those responses in this step.*

- 2) After the groups have completed the eight tables, allow each group to choose or assign one or more tables to illustrate. Each group's scribe will draw a simple floor plan showing the room/work area(s), furniture, equipment-work processes, air vents, doors, and windows. Each group should use the entire notepad paper for their floor plan. Refer to the floor plan on page 5, if helpful.
- 3) Ask each group's scribe to mark the location of hazards using the dot stickers provided; use the corresponding coding system on pages 6–7. The scribe should also write the hazard type (e.g., safety, chemical, outdoor pollution) on the dot and the specific hazard(s) next to each dot. Each hazard should then be labeled 1 to 3 indicating its level of risk, with:
 - (1) being a **low-risk** hazard;
 - (2) being a **medium-risk** hazard; and
 - (3) being a **high-risk** hazard.
- 4) Ask each group's scribe to mark the location of the health symptoms on the map by drawing geometric shapes using the coding system on pages 6–7. The scribe should use the markers provided to draw the geometric shape in the appropriate color on the floor plan. The scribe should write the specific symptom(s) next to the hazard or location where the symptom(s) are experienced and the number of staff who experience the symptom(s).

For example, if 10 staff members experience eye irritation in the cafeteria, the scribe would draw the inverted triangle in blue and put the number 10 next to it, representing the 10 staff members that are experiencing that symptom.

- 5) Ask each group's reporter to present their hazard map (floor plan) by explaining the hazards and their risk rating, why they think the item is a hazard, and any health symptoms that building occupants are experiencing. Encourage other groups to add any hazards that may have been missed or ask questions. The facilitator can highlight the key points.
- 6) Participants should carefully review and discuss findings, prioritize the issues found, and develop a plan to mitigate hazards. For more information on prioritizing concerns, see the *Overview* in this toolkit.

Hazard Mapping Example: Below is an example of a hazard map of an area that includes a classroom, custodial closet, and hallways. Note: the map only shows a few hazards and symptoms. Be sure to include **all hazards and symptoms** when completing the exercise.



HAZARD CODING SYSTEM

	Red Dots: Safety/emergency preparedness issues. For example, blocked fire exits; missing hand railings; hazards that cause slips, trips, and falls; poor lighting; no evacuation plans posted; etc.
	Orange Dots: Chemicals and other hazardous or toxic materials, such as pesticides; cleaning products; maintenance supplies; science, art, and other classroom materials; asbestos; lead; fiberglass; halide and mercury vapor lights; PCBs; etc.
	Yellow Dot: Outdoor and underground pollution sources, including vehicle exhaust; construction and renovation; factories, waste sites, and farms; radon; sewer gas; leaking underground storage tanks; etc.
	Green Dot: Mold and moisture problems. For example, leaks, condensation, flooding, etc.
	Blue Dot: Thermal comfort issues, including ventilation and airflow, temperature, and humidity.
	Neon Pink Dot: Hygiene, sanitation, and restroom issues, including inadequate handwashing facilities, poor student hygiene, body odor, flatulence, lack of privacy doors on restroom stalls, dust, and dirt problems.
	Neon Green Dot: Pests—such as rodents, cockroaches, bats, and pigeons—and animal dander, and dust mites.

HEALTH CODING SYSTEM

	Rectangle: Lightheadedness, headaches
	Triangle: Cough, shortness of breath, tightness in the chest
	Diamond: Stomach pain, muscle pain, other types of pain
	Cross: Fatigue, drowsiness, reduced memory, poor coordination
	Inverted Triangle: Irritated/burning eyes, nose, and throat; irritated/itchy skin or rash; redness
	Star: Nausea, vomiting, indigestion
	Hourglass: Other symptoms, such as swelling, inflammation, stiffness, numbness, tingling, bleeding, fainting, weight loss, etc.

Table 1. General Classrooms

Health and Safety Hazards	Health Symptoms

Table 2. Special Purpose Classrooms (art rooms, computer labs, dark rooms, chemistry/biology labs, career/vocational classrooms)

Health and Safety Hazards	Health Symptoms

Table 3. Athletic Areas (gymnasiums, locker rooms)

Health and Safety Hazards	Health Symptoms

Table 4. Special Purpose Rooms/Areas (entryways, hallways, copy rooms, staff lounges, administrative offices, health room/nurse's office, auditorium/multipurpose rooms, swimming pools, student disciplinary rooms)

Health and Safety Hazards	Health Symptoms

Table 5. Custodial/Maintenance Rooms and Areas (custodial/maintenance closets, boiler rooms, storage rooms, tool storage rooms, and mechanical equipment rooms)

Health and Safety Hazards	Health Symptoms

Table 6. Restrooms

Health and Safety Hazards	Health Symptoms

Table 7. Cafeteria and Food Preparation Areas

Health and Safety Hazards	Health Symptoms

Table 8. School or Institution of Higher Education Grounds (dumpsters, athletic fields, storage sheds, playgrounds, drop-off/pick-up areas, parking lots, etc.)

Health and Safety Hazards	Health Symptoms

