



# Safer Science

February 2015, Best Practices for Safety Issues in the Science Classroom and Laboratory

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## Avoid Overcrowding Your Lab

Class size matters. School laboratories have legally prescribed occupancy load requirements to make them safer learning and working environments. Unfortunately, some principals and other administrators tend to ignore this fact.

The National Science Teachers Association (NSTA) Science Safety Advisory Board (SAB) recently examined this issue in two safety topic papers: “Overcrowding in the Instructional Space,” providing teachers information about how to address overcrowding, and “Duty or Standard of Care,” discussing teacher liability. *Duty or standard of care* is the degree of caution a prudent, careful, and reasonable person should exercise in a specific situation to ensure safety. Both papers appear on the NSTA Safety Portal (see “On the web”).

### What do I need to know?

The laboratory can be a dangerous place to work and learn. Teachers need to be attentive to safety at their worksite given the risk of an accident occurring and their own liability.

The first new safety paper, “Overcrowding in the Instructional Space,” lays the groundwork for addressing the problem of having too many students in the lab. It provides recommendations based on legal safety standards and better professional safety practices and discusses academic research showing that as class size increases, the number of accidents increases). The paper then addresses the legal term *occupancy load*, which mandates the maximum number of occupants allowed at any one time in a building or part of a building. Among the paper’s other recommendations are:

- ◆ Science class sizes in every class (not average over all classes) should be limited to:
  - ◆ 24 (high school/middle school) students if there is at least 60 sq. ft. (5.6 sq. m)/student net (in a combination of classroom/laboratory room) or 50 sq. ft. (4.5 sq. m)/student net in a pure laboratory room.
  - ◆ 24 students for field trips (depending on the number of chaperones [student/adult ratio],

safety hazards of the location, number of special needs students [number of necessary paraprofessionals], etc.).

- ◆ At the secondary level, schools should provide workspace area for each student of at least 60 sq. ft. (5.6 sq. m)/student in classroom/laboratory space or 50 sq. ft. (4.5 sq. m)/student in a laboratory room.

The second safety paper, “Duty or Standard of Care,” details the behaviors required of teachers to legally meet the duty or standard of care:

- ◆ notify students of safety practices and procedures,
- ◆ instruct and model safety,
- ◆ warn students of hazards,
- ◆ inspect for safety,
- ◆ enforce safety regulations, and
- ◆ maintain equipment.

The paper also includes information about actual lawsuits against teachers and how duty of care was critical to the defense.

### Conclusion

Science teachers must know how to make the lab safer for their students and how to protect themselves from legal entanglements. Both of these safety papers are a must-read for educators and students alike.

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### On the web

OSHA Hazard Communication Standard:  
<http://1.usa.gov/1w1GuE>  
NSTA Safety Portal—Safety in the Science Classroom: [www.nsta.org/safety/](http://www.nsta.org/safety/)

