

LAWS, RULES, AND REGULATIONS

The purpose of this chapter is to present the laws, rules, and regulations necessary for a safe learning environment in science laboratories, classrooms, and field investigations. Providing a safe environment for students is not the responsibility of the teacher, but is shared with students and building and central office administrators as well.

The *National Science Education Standards* recommends approaching safety as...

... “a fundamental concern in all experimental science. Teachers of science must know and apply the necessary safety regulations in the storage, use, and care of the materials used by students. They adhere to safety rules and guidelines that are established by national organizations such as the American Chemical Society and the Occupational Safety and Health Administration, as well as by local and state regulatory agencies. They work with the school and district to ensure implementation and use of safety guidelines for which they are responsible, such as the presence of safety equipment and an appropriate class size. Teachers also teach students how to engage safely in investigations inside and outside the classroom.”

National Research Council, National Academy of Science, 1996

As science educators, teachers have the responsibility to show by example and to teach the need for safe work habits and interaction with the environment. To understand this responsibility, teachers must have a working knowledge of federal, state, and local laws, rules, and regulations including the actions required by you and others under these requirements. The federal and state laws are very specific about what safety requirements are to be used in the science laboratory and classroom. Local safety codes can be acquired from the city government offices in your community.

A summary of the relevant laws, rules, and regulations related to safety in Texas' schools is presented in this chapter. For the complete version of each of these laws, rules, and regulations (see Appendix A).

FEDERAL LAW

INDIVIDUALS WITH DISABILITIES EDUCATION ACT

Public Law (P.L.) 105-17. A school district must ensure that students with disabilities are not excluded from participation in, or denied the benefits of, its services, programs, and activities (Least Restrictive

Environment). It must also ensure that they are not subjected to discrimination by the school system. Therefore, certain modifications in laboratory design may be necessary to accommodate a students with disabilities so that they may participate in laboratory investigations safely.



STATE LAWS, RULES, AND REGULATIONS

AUTHORITY OF THE STATE BOARD OF EDUCATION

The State Board of Education (SBOE) is assigned specific rulemaking authority under the Texas Education Code (TEC). SBOE rules are codified under the Texas Administrative Code (TAC). The TAC is the official compilation of all final state agency rules published in the Texas Register. Following its effective date, a SBOE rule is entered into the TAC under Title 19, Part II. Title 19 is Education, and Part II is the Texas Education Agency. Under the Texas Education Code, the Commissioner of Education is also authorized to adopt rules governing specified areas of education. Commissioner's rules are also part of the TAC, Title 19, Part II.

TEXAS EDUCATION CODE, TITLE 19

REMOVAL OF A DISRUPTIVE STUDENT

Chapter 37. Discipline: Law and Order. A teacher may remove a student from the classroom or laboratory and send the student to the principal's office for disruptive behavior to maintain effective discipline and a safe environment.

PROTECTIVE EYE DEVICES

Chapter 38. Protective Eye Devices in Public Schools. Teachers and students are required to wear protective eye devices during science investigations or activities where harmful materials or substances are being used. Local school districts must adopt rules designating when protective eye devices should be worn and the type necessary under these conditions. This requirement applies to anyone observing a science investigation or activity where protective eye devices are required to be worn by the teacher and students.

EDUCATOR'S CODE OF ETHICS

Chapter 247. The Code of Ethics and Standard Practices for Texas Educators requires educators to:

- ☼ comply with written local board policies, state regulations, and other applicable state and federal laws.
- ☼ make reasonable efforts to protect the student from conditions detrimental to learning, physical health, mental health, or safety.
- ☼ not exclude a student from participation in a program, deny benefits to a student, or grant an advantage to a student on the basis of race, color, sex, disability, national origin, religion, or family status.

TEXAS ADMINISTRATIVE CODE, TITLE 19, PART II

SCHOOL FACILITIES STANDARDS

Chapter 61. Commissioner's Rules Concerning School Facilities. Standards for science classrooms and combination lecture / laboratories are defined in this chapter of the Texas Administrative Code.

Square feet per room measurements

The net footage of a room that will house 22 students at the elementary level and 25 students at the middle or high school level. The net square footage of a room includes exposed storage space, such as cabinets or shelving, but does not include hallway space or storage space, such as closets or preparation offices.

Space, minimum square footage requirements

Specialized classrooms. Science lecture / lab shall have a minimum of 41 square feet per pupil or 900 square feet per room at the elementary school level; 50 square feet per pupil or 1,000 square feet per room at the middle school level; 50 square feet per pupil or 1,200 square feet per room at the high school level.

- ☼ Grades 6-8, students conduct field and laboratory investigations using safe, environmentally appropriate, and ethical practices.
- ☼ Grades 9-12, the students, for at least 40% of instructional time, conduct field and laboratory investigations using safe, environmentally appropriate, and ethical practices.

40% LABORATORY AND FIELD REQUIREMENT

Chapter 74. Curriculum Requirements. In addition to the requirements found in the Texas Essential Knowledge and Skills for Science, The State Board of Education defined the percentage of the instructional time that is to be laboratory instruction. High school courses shall include at least 40% hands-on laboratory investigations and field work using appropriate scientific inquiry.

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS

Chapter 112. Required Curriculum. Safety during laboratory and field investigations is required beginning with Kindergarten and continuing through Grade 12. The Texas Essential Knowledge and Skills for Science require that as part of the regular instruction in science, students participate in and conduct investigations. For example:

- ☼ Kindergarten-Grade 5, students participate and conduct laboratory investigations following home and school safety procedures that are environmentally appropriate and follow ethical practices.

TEXAS DEPARTMENT OF HEALTH

TEXAS ADMINISTRATIVE CODE, TITLE 25, PART I

FACE AND EYE PROTECTION STANDARDS

Chapter 295. Standards for Face and Eye Protection in Public Schools. This chapter applies to teachers and students in Texas public schools participating in science courses and laboratories where potentially hazardous activities exist. The law requires that:

- ☞ local school boards and administrators furnish eye protectors of the type suitable for the work performed.
- ☞ eye protection equipment be worn when there is a reasonable probability of injury to the body
- ☞ the eye protectors be kept clean and in good repair.
- ☞ teachers and students who wear corrective lenses must be provided goggles that can be worn over corrective spectacles without disturbing the adjustments of the spectacles.

HAZARDOUS SUBSTANCES

Chapter 501. Description of Hazardous Substance. This chapter defines the kinds of hazardous substances that may be found in the science laboratory. It clarifies that public school employees are not required to comply with the Occupational Safety and Health Administration (OSHA) standard on hazardous substances.

It clarifies that students are not defined as employees for the purpose of the Texas Hazard Communications Act. Therefore, the Act is not applicable to students in their capacity as students. (July 21, 1993 ruling of the Texas Attorney General, Opinion No. DM-239)

HAZARD COMMUNICATIONS ACT (HAZCOM)

Chapter 502. Hazard Communications Act. This chapter requires that:

- ☞ a chemical manufacturer is required to provide Material Safety Data Sheets (MSDS) to employers who acquire hazardous chemicals. It further requires employers to maintain a legible copy of a current MSDS for hazardous chemicals used in the workplace that are legible, accurate, and readily available to employees on request at each workplace.
- ☞ labels are to be on existing containers of hazardous chemicals. Employees may not be required to work with hazardous chemicals from unlabeled containers.
- ☞ an education and training program for all employees who use or handle hazardous chemicals be established. It requires employers to maintain a written hazard communication program that specifies certain contents of the program, who is to receive training and maintain training records.
- ☞ employers post and maintain adequate notice informing employees of their rights under the Hazard Communications Act.

VOLUNTARY INDOOR AIR QUALITY GUIDELINES FOR PUBLIC SCHOOLS

Chapter 297. Voluntary Indoor Air Quality Guidelines. This set of guidelines presents three voluntary recommendations.

- ☞ Establish guidelines for initial program development, a management plan, and school board review for program status and future needs of public schools.

- Develop a written preventive maintenance program for a healthy learning environment for students.

- Recommends considerations for students with allergies or chemical intolerances, handling of foods, garbage storage and disposal, smoking, and reporting of conditions that are not conducive to clean air.

TEXAS STATE LAW

CIVIL PRACTICE AND REMEDIES CODE, TITLE 5

SAFETY AND TORT LAW

The obligation to comply with legal safety requirements and recommendations affords school districts the opportunity and means to provide exemplary science learning in a safe environment. The potential for lawsuits increases when the school district fails to provide these safe conditions for teachers and students.

Texas governmental entities are generally immune from tort liability under the doctrine of sovereign immunity. However, governmental immunity can be waived under certain instances as found in the Texas Tort Claims Act, Civil Practice and Remedies Code 101.001 et. Seq. Professional employees may be held liable in circumstances involving: use of excessive force in the discipline of students; negligence resulting in bodily injury to students; or the operation, use, or maintenance of any motor vehicle.

A “tort” is a wrong or injury to a person or property with the standard of proof being the preponderance of evidence.

Negligence is defined as conduct that falls below a standard of care established by law to protect others against an unreasonable risk or harm. Situations where a person could be found negligent include:

- doing that which should not have been done or the committing of an unlawful act (malfeasance). For example, forcing a student to assume an unnecessary risk is malfeasance.
- the failure to do what should be done (nonfeasance). For example, inadequate facilities or lack of proper facilities could be considered nonfeasance.

Public educators are expected to minimize the risk of accidents to students in science classrooms and laboratories. According to the National Science Teachers Association...

“The accident rate in schools is 10-50 times higher than that of the chemical industry. Research goes beyond the headlines to look at the factors that accompany school accidents, which include:

- inadequate or poorly designed working space, overcrowding, and too few work stations*
- teachers with poor course work preparation*
- teachers who are teaching more than two preparations at the same time*
- inadequate safety training.”*

NSTA, *Guide to School Science Facilities*, 1999