

Safety In The School Science Laboratory

An overview of the sections of the course

Introduction

Safety is really just a matter of choices. But, you are not free to choose unless you know the choices. And, equally importantly, you don't make the best choices unless you understand the consequences. This course teaches about the choices and the consequences in a way that makes them both fun and memorable.

Scope of the Problem

Life is filled with hazards. Labs have them too, but that's just part of life. Tens of thousands of people die and millions are injured each year. Billions of dollars are wasted. And yet, the solution is clear, simple, and obvious. By taking the time to make health and safety an integral and important part of science education, work, and life, we can live safer, healthier, longer lives.

Accidents

LSI has been collecting anecdotal accounts of lab accidents for 35 years. In this section we share some stories. They are powerful examples, make lasting impressions, and serve as a graphic reminder. The stories have been published in our series, *Learning By Accident*, Volume 1 & 2. Please send us your account of the most serious lab accident you recall.

Legal Aspects

One of the unfortunate outcomes of accidents is a lawsuit. Liability and negligence issues can't be ignored in today's lab operations. In this section we explain the types of negligence, the responsibilities of supervisors and employees, and how to reduce the likelihood of lawsuits.

Planning for Emergencies

What are the twelve most common types of lab emergencies? What immediate action should be taken? How should you prepare to deal with those emergencies? Sadly, less than five percent of the more than 100,000 scientists and science educators LSI has spoken to have been discussing these emergency situations with their colleagues or written plan to deal with them.

Handling Chemicals

There are four properties of chemicals, which make them dangerous. We review those properties and draw the connection to similar chemicals in our homes. What about the experimentation? What are the prudent practices, protective equipment and protective facilities needed to minimize the risk?

Storage of Chemicals

Six critical areas are discussed: Access, Space, Fire Control, Ventilation, Shelf Security and Arrangement. LSI believes that keeping the door locked is the most important. And, we suggest some simple ways to have less crowded storage.

Biological and Animal Hazards

Infection is the biggest problem. Five percent of lab infections result in death. Appropriate precautions are discussed along with other bio lab hazards including fieldwork.

Eye and Face Protection

The ANSI standard sets the stage for a discussion of glasses, goggles, and face shields. When should each be used? Why are ANSI approved safety glasses four ways better than street glasses? Contact lens use, portable shields, and eyewash fountains with the related problem of a blindness causing amoebae are covered in this section. Who was Bob Aspromonte?

Disposal of Chemicals

In this section, LSI presents the concept and practice of a chemical management system. It begins with assuming responsibility. Then, we discuss determining hazard, inventory, purchasing philosophy, avoiding waste formation, obeying the law, and selecting a vendor. This section concludes with teaching the home application.

Electrical Safety

Here is an area of lab safety that most lab workers don't understand. Ninety-nine percent of the people we speak to were never taught the correct way to plug in a two prong unpolarized plug. You'll learn that here along with a graphic and musical demonstration of why ground fault interrupters are necessary.

Your Worst Problem

We are going to have a discussion by the seminar participants of their most serious lab safety problem. We're sure many of them might well be yours as well.

Safety Program Planning

It takes a lot of things to have an effective safety program. Join the course participants in a group discussion to improve their lab safety program. Then, we present our five top characteristics for an effective program. You'll learn about the one thing, which causes more accidents and injuries than anything else.

Concluding Comments

After the course participants complete an evaluation, there will be some summary and concluding comments.

Remember, whenever you have lab safety questions, LSI is happy to help provide answers. You can contact LSI at info@labsafetyinstitute.org.