

Learning by Accident

Learning by Accident is an ongoing *Crucible* feature, in which real-life lab accidents or incidents are recounted and explained. The goal is to highlight the consequence of ignoring safety rules so that science educators will be further encouraged to become knowledgeable, and to take appropriate action, in areas of safety that affect their daily activities in the science classroom. **Submissions are encouraged.** Anonymity will be guaranteed. Please send written descriptions to Ian Mackellar, STAO Safety Committee Past-Chair, Box 191, MAITLAND, ON K0E 1P0

A Gusher in Biology Class

The class was working on dissecting a frog. The students were working in groups of three or four. In attempting to cut through the chest cavity, some preservative solution was sprayed into the eyes of one of the students. The student panicked and became frantic in her effort to get to the eyewash station, overturning several pieces of furniture. Luckily, no serious injuries were sustained.

Submitted by a STAO member at a safety workshop

Comments from the STAO Safety Committee

This incident highlights several problems that must be addressed when planning classroom activities in science. It is clear that the student was not wearing eye protection (chemical splash-proof goggles); if she was wearing an eye protector, it was not certified for use in the presence of splash hazards as required by the Canadian Standards Association's standard Z94.3-02 *Eye and Face Protectors*. There was apparently no clear path from the work area to the eyewash station, and she could have sustained further injuries if she had fallen into the overturned furniture in her panicked state.

Teachers must plan activities carefully and anticipate what hazards must be controlled. Students and teachers must use safety equipment that is appropriate for the activity. If an accident or injury occurs, the teacher must be prepared to react quickly to minimize the consequences.

Due diligence by the teacher includes identifying the hazards associated with the dissection of a preserved specimen, including the handling of sharp instruments such as scissors and scalpels, exposure to the preservative fluids and vapours, and the possibility of chemical splash when tissues and organs are cut. Safety measures, including adequate ventilation, the use of protective clothing such as gloves and lab coats, and use of appropriate eye and face protection, must all be considered. Fortunately, most animal specimens are now preserved in less toxic preservatives than formaldehyde solutions.

Accessibility of emergency equipment such as first aid kits, eyewash stations and utility shut-off controls must also be assessed. The floor in high-traffic areas such as the work area, and paths to emergency equipment and exits should be kept clear of backpacks, clothing and furniture.

Finally, students must be prepared to take action in case of an emergency or injury. A description of the various hazards and associated first aid or emergency responses should be presented. This should be part of the preparation for any classroom activity.

