

Dissection Safety Tips

Introduction

The policy for handling and disposal of dissection materials is no different than that required for any other biological or chemical material. Common sense, knowledge of the material, and a familiarity with local disposal regulations and procedures must prevail.

Rationale

Dissection of preserved organisms is an integral part of many life sciences courses. The rationale for dissection work should be well thought out and available in written form for answering potential questions from parents or the community. Careful and clearly written directions are critical for safe and meaningful dissection work. Professionally illustrated dissection guides add an important degree of authenticity to classroom dissection work. Many software programs are available to prepare students to carry out dissection activities. However, nothing can replace the actual experience of dissection.

The science department should regularly review the:

1. Courses where dissection activities are used in instruction.
2. Quality of the dissection guides used in these courses.
3. Quality of the dissection tools and workspace available for these courses.
4. Availability of personal protective equipment and proper ventilation in biology work areas.
5. Nature of the preservatives used in the dissection materials used by your department.
6. Inventory of preserved materials in the department and the date of their purchase.
7. Local regulations relative to the disposal of preserved materials.

Equipment Considerations

Protective gloves, chemical-resistant aprons, and protective eyewear are dissection necessities. Quality dissection tools that are sharp and free of rust should be provided. Routine procedures for inspecting dissection tools should be instituted. (Dull and dirty scissors, scalpels, or blades are much more dangerous than sharp, clean ones!) Student laboratory directions should include the proper techniques for using specific dissection instruments, as well as how to dispose of sharps. Appropriate dissection pans and table protection should be provided at each workstation. Common-sense rules relative to jewelry, nails, hair length, etc. should be reviewed in terms of student personal safety during dissection work.

Preservatives and Ventilation

Preserved materials are often fixed in formaldehyde or other toxic chemicals. After the fixing process, the excess fixative is removed and replaced with safer preservatives. A certain degree of preservative odor is likely to linger, and thus good ventilation of the work area (classroom) is critical. Good ventilation will provide fresh air and will not “announce” to the entire school that it is dissection time. Rinsing procedures are often specified for specimens. Follow any such directions carefully, especially if the preserved materials will be used over an extended period of time. With the extremely low levels of preservative in most specimens, odors are minimal but the expected shelf life of a preserved specimen is also shortened.

Cleanup and Disposal of Preserved Materials

Proper cleanup and disposal of dissected materials is critical. Be sure to read the Flinn Scientific “Biological Waste Disposal” instructions in the *Flinn Scientific Catalog/Reference Manual* and note especially the

Scalpel Safety Reminders:



- Hold a scalpel as you would a pencil.
- Cut with a downward motion but never push down very hard to make a cut. (If extreme pressure is required, you have a dull scalpel or require a different instrument.)
- Watch the placement of your specimen-holding hand. Do not cut toward your holding hand.
- Scalpels are not appropriate for bone or cartilage tissue work.

section on the disposal of Type III Biological Materials. Local conditions (septic systems, sewers, etc.) and local regulations may influence the proper disposal procedures of your biological materials. It is critical to know your local regulations and guidelines for such materials. Plenty of soap and water should be provided after all dissection work and adequate time should be provided for the proper cleanup of materials and students.

General Guidelines

- Be sensitive to any students who may be put under physical stress when using preserved materials.
- Monitor students for any signs of illness during dissection.
- Wear chemical splash goggles and chemical-resistant gloves and apron.
- Properly mount dissection specimens to the dissecting pan or tray. Do not dissect a specimen while holding it.
- Handle scalpels, razor blades, and other sharp instruments with care.
- Cut away from the body and away from other students.
- Do not use excessive force when working with sharp instruments. Use scissors instead of scalpels wherever possible.
- Students should be cautioned to never ingest specimen parts.
- Students should not be allowed to remove specimens or specimen parts from the classroom.
- All dissection parts should remain within the dissecting pan.
- Properly dispose of dissected materials.
- Store specimens in accordance with directions and chemical storage safety rules.

Keep your dissection instruments organized and clean to improve safety

For a full listing of dissection supplies, see the *Flinn Scientific Catalog/Reference Manual*.

