

**SAFETY FIRST!**● **Lab and Field Safety**

The study of science is challenging and fun, but it can also be dangerous. Don't take any chances! Follow the guidelines listed below, as well as safety information provided in the particular lab or field activity you are doing.

You will find important safety symbols included with laboratory and field activities throughout your textbook and accompanying worksheets. These safety symbols alert you to particular safety concerns of which you should be aware. Become familiar with these symbols shown below so that when you see them, you will know what they mean and what to do.

Also, follow your teacher's instructions and don't take shortcuts—even when you think there is little or no danger. Accidents *can* be avoided.

**Animal Safety**

- Always obtain permission before bringing any animal to school.
- Handle animals carefully and respectfully.
- Wash your hands thoroughly after handling any animal.

**Caustic Substances**

- If a chemical gets on your skin or clothing or in your eyes, rinse the affected area immediately and alert your instructor.
- If a chemical is spilled on the floor or lab bench, alert your instructor, but do not clean it up yourself unless your teacher says it is OK to do so.

**Chemical Safety**

- Always use caution when working with chemicals.
- Never mix chemicals unless specifically directed to do so.
- Never taste, touch, or smell chemicals unless specifically directed to do so.
- Always add acid or base to water; never add water to an acid or base.
- Never return unused chemicals to the original container.
- Follow instructions for proper disposal.
- Never transfer substances by sucking on a pipet or straw; use a suction bulb.

**SAFETY FIRST!**● **Lab and Field Safety** *(continued)***Clothing Protection**

- Secure loose clothing and remove dangling jewelry. Do not wear open-toed shoes or sandals in the lab.
- Wear an apron or lab coat to protect your clothing when working with chemicals.
- If a spill gets on your clothing, rinse it immediately with water for at least five minutes while notifying your instructor.

**Electrical Safety**

- Do not place electrical cords in walking areas.
- Do not let cords hang over a table edge such that equipment will fall if the cord is pulled.
- Do not use equipment that has damaged cords.
- Be sure that the power switch for a piece of equipment is in the off position before plugging the equipment in.
- Never use an electrical appliance when you are near water or when your hands are wet.
- Be sure to turn off and unplug electrical equipment when you are finished using it.

**Eye Protection**

- Wear safety goggles when working around chemicals, acids, bases, flames, or heating devices. Contents under pressure may become projectiles and may cause serious injury.
- Never look directly at the sun through any optical device or use direct sunlight to illuminate a microscope.
- Avoid wearing contact lenses in the lab.
- If any substance gets in your eyes, notify your instructor immediately and flush your eyes with running water for at least 15 minutes.

**Explosion Safety**

- Use flammable liquids only in small amounts.
- When working with flammable liquids, be sure that no one else in the lab is using a lit Bunsen burner or plans to use one. Make sure that no other heat sources are present.

**SAFETY FIRST!**● **Lab and Field Safety** *(continued)***Glassware Safety**

- Check the condition of glassware before and after using it. Inform your teacher of any broken, chipped, or cracked glassware because it should not be used.
- Do not pick up broken glass with your bare hands. Place broken glass in a specifically designated disposal container.

**Hand Safety**

- To avoid burns, wear heat-resistant gloves whenever instructed to do so.
- Always wear protective gloves when handling chemicals.
- If you are unsure of whether an object is hot, do not touch it.
- Use tongs when heating test tubes. Never hold a test tube in your hand to heat it.

**Heating Safety**

- Avoid wearing hair spray or hair gel on lab days.
- Whenever possible, use an electric hot plate as a heat source instead of using an open flame.
- When heating materials in a test tube, always angle the test tube away from yourself and others.
- Make sure that glass containers used for heating are made of heat-resistant glass.
- Know your school's fire-evacuation routes.

**Plant Safety**

- Do not eat any part of a plant or plant seed used in the lab.
- Wash hands thoroughly after handling any part of a plant.
- When outdoors, do not pick any wild plants unless your teacher instructs you to do so.

## **SAFETY FIRST!**

### ● **Lab and Field Safety** *(continued)*

#### **Sharp Objects**



- Be extremely careful when using knives and other sharp instruments.
- Place objects on a suitable work surface for cutting. Never cut toward your hand.
- Never use a double-edged razor in the lab.

#### **Waste Disposal**



- Clean and decontaminate all work surfaces and personal protective equipment as directed by your instructor.
- Dispose broken glass, contaminated sharp objects, and contaminated materials (biological and chemical) in special containers as directed by your instructor.