

# Safety In The Lab

Name:

Date:

Block:

Safety in the lab is often common sense! Answer the following questions and circle the appropriate items:

### Clothing

Consider the following items. **Circle** the items of clothing that are allowed/appropriate for the lab:

Close-toed shoes	Baggy sweaters	Hat	Shorts	Contact lenses
Glasses	Hair tie	Long pants	T-shirt	Sandals

### Items to bring

Consider the following items. **Circle** the appropriate items to bring into the lab.

Apple	Pen/Pencil	Coffee	Eraser	Extra paper
Calculator	Lab Activity Sheet	Water	Ruler	Sandwiches

### Behaviour in the lab

Consider the following actions. **Circle** the appropriate actions for students to follow in the lab.

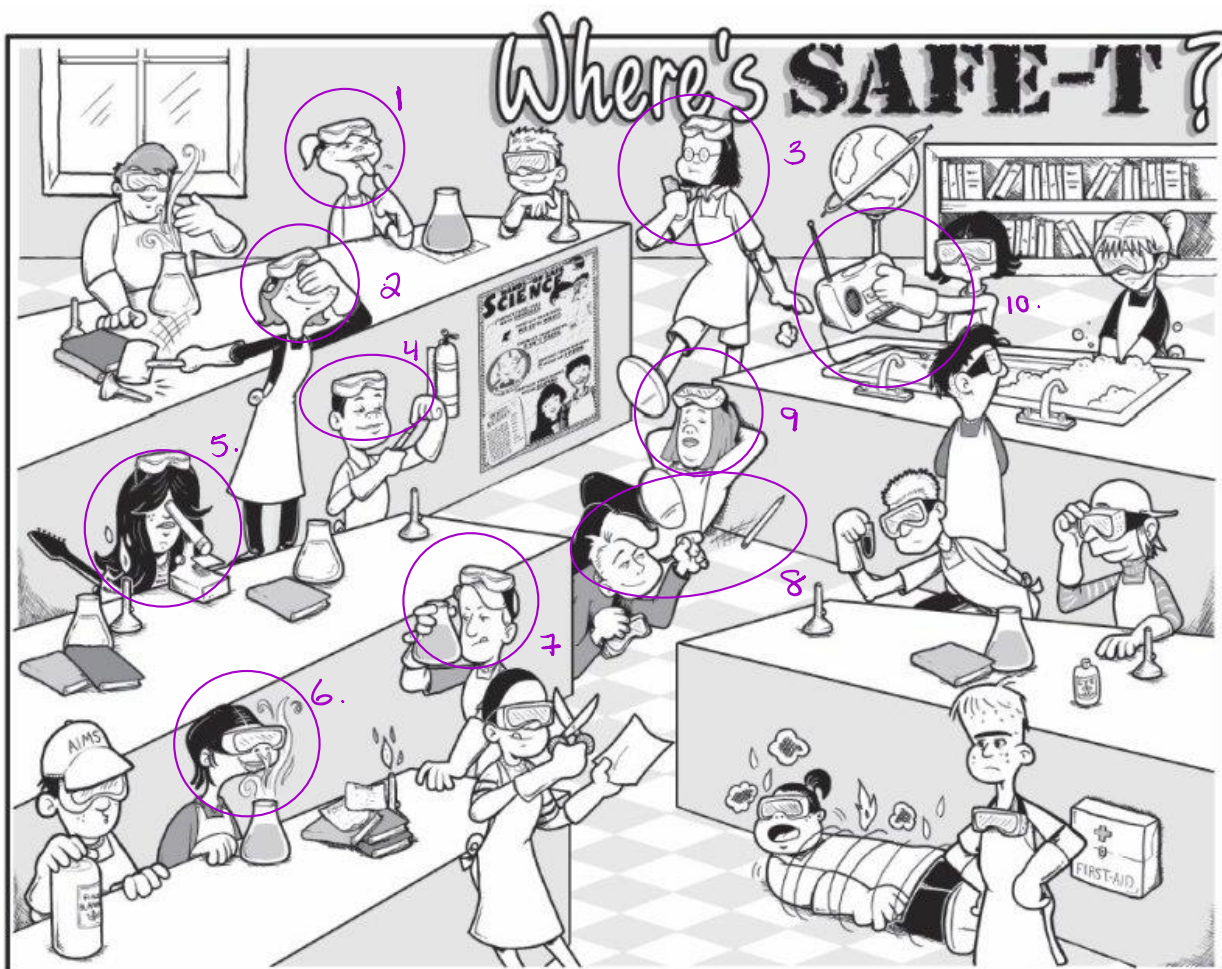
Walk around to another lab group	Follow given instructions	Stay with your assigned table
Waft chemicals when smelling them	Try to clean up broken glassware yourself	Always attend to open flames
Return unused chemicals into the original container	Dispose of chemicals as per your teacher's instructions	Always treat chemicals and specimens with respect

### After the experiment

Consider the following actions. **Circle** the appropriate actions for students to follow after taking part in an experiment.

Wash hands	Ensure that everyone in the group has collected data	Copy answers
Turn off and unplug any equipment used	Confirm the due date for the lab report	Leave the station the way you found it

**CIRCLE and NUMBER** all the UNSAFE lab activities shown in the following picture. Can you find at least 10?  
**In the space below, identify the possible hazard of the unsafe lab activity.**



1.	No safety goggles ; tasting substances	6.	Smelling the chemicals directly
2.	Not looking at what they're doing	7.	Safety goggles are not on
3.	On their phone & walking around the lab; dropping garbage	8.	Throwing a pencil across the lab
4.	Safety goggles are not on.	9.	Sleeping in the lab
5.	Safety goggles are not on; Hair not tied up; Open flame	10.	Electrical cord near water

# Safety Rules for the Science Lab

**There are many safety rules in the lab! Put a check mark  next to the rules that you already know!**

## **DRESS CODE**

- To protect your eyes from possible injury, wear safety goggles whenever you are working with chemicals, burners, or any substance that might get into your eyes. Never wear contact lenses in the lab.
- Tie back long hair to keep it away from any chemicals, burners, and candles, or any other lab equipment.
- Remove or tie back any article of clothing or jewelry that can hang down and touch chemicals and flames. Open shoes or sandals should not be worn in the lab.

## **GENERAL SAFETY RULES**

- Learn the location of all safety equipment, such as: safety goggles, fire extinguisher, fire blanket, fire alarm, eyewash fountains and showers. Learn when and how to use them.
- Read all directions for an experiment several times and follow the directions exactly as written. If you are in doubt about any part of the experiment, ask your teacher for help.
- Never perform activities that are not authorized by your teacher. Obtain permission before "experimenting" on your own.
- Never carry hot equipment or dangerous chemicals through a crowd of students.
- If you spill a chemical or material, immediately ask your teacher about the proper cleanup procedure.
- Never eat or drink in the lab.
- Always unplug electric cords by pulling on the plug, not the cord. Report damaged cords or outlets to your teacher.
- Wash your hands with warm water and soap after each experiment.

## **HEATING SAFETY**

- Always wear safety goggles when using a heat source, such as a candle or burner.
- Never heat a chemical you are not instructed to heat. A chemical that is harmless when cool may be dangerous when heated.
- Never heat a flammable liquid over a Bunsen burner (or other open flame).
- Maintain a clean work area and keep all materials away from flames.
- Make sure you know how to light a Bunsen burner. (Your teacher will demonstrate the proper procedure.) If the flame leaps out of a burner toward you, immediately turn off the gas at the bench valve. Do not touch the burner. It may be hot.
- Never reach across a flame.
- Never leave a lighted burner unattended! The flame of a lighted Bunsen burner often has little or no color and may be invisible. Other students passing by may be burned.
- Always turn off the gas at the bench valve, not at the base of the Bunsen burner.

- When heating a liquid in a test tube, always point the open end away from yourself and others, as hot chemicals may shoot out of the test tube during heating.
- Never heat a liquid in a closed container. The expanding gases produced may blow the container apart, injuring you and others.
- When heating materials in a test tube, make sure the test tube is made of Pyrex and it is not cracked. Keep moving the test tube through the flame so that it is heated evenly.
- When heating a liquid in a test tube, heat the top of the liquid first by holding the test tube at an angle in the burner flame.
- Before picking up a container that has been heated, first hold the back of your hand near it. If you feel heat on the back of your hand, the container may be too hot. Move hot containers with clamps or tongs.
- If you receive a burn, immediately run cold water over the burned area. This removes the heat from the area and lessens the amount of damage done.

### **IF A FIRE OCCURS**

- Shut off all gas supplies at the bench valve. Notify your teacher immediately.
- If the fire is not easily put out, or if poisonous gases are escaping, pull the fire alarm and leave the building quickly and quietly.  
Note: Most small fires are easily put out with water. They can also be smothered by using an upside-down container (such as a beaker) or sand. If the fire extinguisher is required, your teacher should be informed.
- If a student's clothing catches fire, make sure that the student immediately rolls on the floor to try to smother the flames. Then, get the fire blanket and wrap it around the student.

### **USING CHEMICALS SAFELY**

- Never mix chemicals for the "fun of it". You might produce a dangerous, possibly explosive substance.
- Never touch, taste, or smell a chemical unless you are instructed by your teacher to do so. Many chemicals are poisonous. If you are instructed to smell a chemical, gently waft (wave your hand over the opening of the container and move any fumes toward your nose). Do not place your nose close to the container and inhale.
- Use only those chemicals needed in the activity. Keep all lids closed when a chemical is not being used. Notify your teacher whenever chemicals are spilled.
- Dispose of all chemicals as instructed by your teacher. When disposing a dissolved chemical in the sink, flush the sink well with water. Solid waste material must be disposed into a container provided, not into the sink.
- Pour acids and bases very carefully (preferably over the sink). Notify your teacher if any acid spills. Clean up spilled chemicals as instructed by your teacher.
- When diluting an acid, pour the acid into the water. Never pour water into the acid as the acid may begin to boil and spatter.
- Wash any acid or other harmful chemical spilled on your skin or clothing with lots of water. If a harmful chemical gets into your eyes, wash them with water immediately and continuously for up to 10 minutes. Do not rub your eyes.

- Never return unused chemicals to their original container unless instructed to do so. They may be contaminated.

### USING GLASSWARE SAFELY

- Never force glass tubing into a rubber stopper or rubber tubing. Wet the glass tubing and the rubber with water and then push the glass tubing using a turning motion.
- After cutting glass tubing, fire-polish the cut ends to remove sharp edges.
- Never use broken or chipped glassware. If glassware breaks, notify your teacher and dispose of the broken glass into a container provided for this purpose.
- Never eat or drink from laboratory glassware.
- Thoroughly clean glassware before putting it away.

### USING SHARP INSTRUMENTS

- Handle scalpels or razor blades with extreme care. Never cut material toward yourself; cut away from yourself.
- Immediately notify your teacher if you cut your skin when working in the lab.

### END-OF-EXPERIMENT RULES

- Clean up your work area and return all equipment to its proper place.
- Wash your hands after every experiment.
- Turn off all burners or candles or hot plates. Double check that the gas valve to the burner is completely closed.



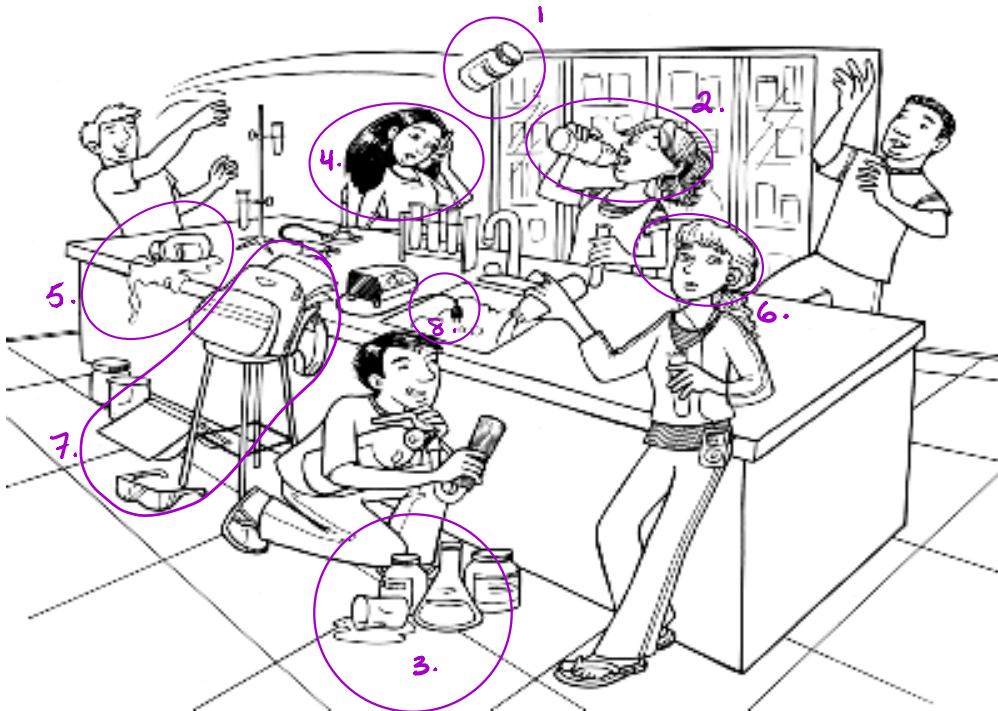
Name \_\_\_\_\_

Date \_\_\_\_\_

Use with textbook pages 8-15.

## What is wrong with this picture?

There are many unsafe situations in the science lab shown below. In the first column of the chart, identify seven unsafe situations. In the second column, describe an injury that might occur as a result of each situation.



Unsafe situation	Possible injury
1. Throwing materials	Head or other injuries
2. Drinking liquids	Drinking harmful substances
3. Spilled chemicals	Slip and fall
4. Hair not tied back	Burns caused by hair catching on fire
5. Chemical spill on table	Acid burn if spill is corrosive
6. No safety goggles; Not paying attention	Chemicals may get in eye
7. Crowded work area	Spillage, causing acid burns or falls

8. Electric plug by water

May cause electrocution when plugged in