

Safety in the Science Classroom

Textbook pages 8–15

Before You Read

Why should you know about safety *before* you start a science activity? Write your ideas on the lines below.

Create a Quiz

After you have read this section, create a five-question quiz based on what you have learned. Trade your quiz with a partner. Answer each other's questions.

What safety rules can protect you and your classmates?

Safety is your first concern when you are doing science activities. You can protect yourself and your classmates by following some important rules.

Rule 1: Listen to your teacher.

- ◆ Listen carefully to all instructions that your teacher gives you, and follow those instructions.

Rule 2: Be alert.

- ◆ Know where the nearest fire alarm is.
- ◆ Know where to find the first aid kit and all other safety equipment.
- ◆ Read the whole activity before you start. If you do not understand something, ask your teacher.
- ◆ Tie back long hair. Do not wear any dangling clothing or jewellery.
- ◆ Wear the protective clothing that your teacher tells you to.
- ◆ Do not chew gum, eat, or drink in your science classroom. Do not taste any substances.
- ◆ Do not smell any substances directly. Hold the container in front of you and waft the fumes toward your nose instead.

Rule 3: Be careful.

- ◆ Be on the lookout for dangerous behaviour or situations.
- ◆ Never use broken or chipped glassware.
- ◆ If any part of your body comes in contact with a dangerous substance, inform your teacher right away as you wash the area with lots of water.
- ◆ Handle hot objects carefully.
- ◆ Make sure you know the right way to light and use a Bunsen burner.
- ◆ Pull on the plug, not the cord, when you unplug electrical equipment.

Rule 4: Clean up.

- ◆ Clean up any spills according to your teacher's instructions.
- ◆ Clean and dry equipment before you put it away.
- ◆ Wash your hands when you are done.
- ◆ Dispose of materials as instructed by your teacher. ✓

How can safety symbols help you stay safe?

The **Workplace Hazardous Materials Information System (WHMIS)** has eight safety symbols to warn about dangerous materials and products. Look for these symbols on materials and products that you use. ✓



Compressed gas



Flammable and combustible material



Oxidizing material



Poisonous and infectious material causing immediate and serious toxic effects



Poisonous material causing other toxic effects



Biohazardous infectious material



Corrosive material



Dangerously reactive material

WHMIS symbols**✓ Reading Check**

1. List the four main safety rules.

✓ Reading Check

2. What does WHMIS stand for?

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.	
2.	
3.	
4.	
5.	
6.	
7.	

Use with textbook pages 8–15.

Safety do's and don'ts

Each of the following situations could happen in a science classroom. Describe the unsafe practices and explain what should be done.

1. You mix two chemicals and notice that a bright yellow gas is produced. You were told to make some observations, so you hold the beaker up close to your face so you can see the gas and smell the fumes.

Unsafe practice: _____

Correct thing to do: _____

2. Your partner's shirt catches on fire while using the Bunsen burner. You tell your partner to stay still while you run to get a cup of water from the sink to put out the fire.

Unsafe practice: _____

Correct thing to do: _____

3. After finishing a lab, you have some chemicals left over. You do not want to waste them, so you carefully pour them back into the container you got them from.

Unsafe practice: _____

Correct thing to do: _____

4. You accidentally spill some water on the classroom floor. You leave it because it is only water and it will quickly evaporate.

Unsafe practice: _____

Correct thing to do: _____

5. You were talking with your partner and did not hear the teacher's instructions on how to do the lab. You figure that it will be okay if you and your partner copy what everybody else is doing.

Unsafe practice: _____

Correct thing to do: _____

6. You need to use some copper (II) sulfate, which is a blue liquid. You go to the shelf and find a flask with blue liquid in it and use that. There is no label on the flask, but it is the only one with a blue liquid in it.

Unsafe practice: _____

Correct thing to do: _____

Use with textbook pages 12-15.

What is WHMIS?

In the second column, write the name of each WHMIS symbol. Then choose the correct meaning of the symbol from the list below. Write the meaning in the third column.

- ◆ Likely to cause illness or death if ingested or spilled on skin
- ◆ Will readily burst into flame
- ◆ May readily react with other substances to produce harmful effects
- ◆ Will corrode substances with which it comes in contact, including human flesh

WHMIS symbol	Name of the symbol	What the symbol means
1. 		
2. 		
3. 		
4. 		

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Safety in the science classroom

Match each Descriptor on the left with the corresponding WHMIS symbol on the right. Each WHMIS symbol may be used only once.

Descriptor	WHMIS symbol
1. _____ compressed gas	A. 
2. _____ corrosive material	B. 
3. _____ oxidizing material	C. 
4. _____ dangerously reactive material	D. 
5. _____ biohazardous infectious material	E. 
6. _____ flammable and combustible material	F. 
7. _____ poisonous material causing other toxic effects	G. 
	H. 

8. Which of the following is an unsafe practice in the science lab?
- A. using clean glassware for a lab
 - B. using a broken beaker during a lab
 - C. using chemicals from a container that is clearly labelled
 - D. holding a test tube away from your face when pouring chemicals

9. A student splashed some chemicals into his eyes. Which of the following describes the proper procedure that he should take next?
- A. rub his eyes
 - B. stop, drop, and roll
 - C. dry his eyes with a paper towel
 - D. wash his eyes immediately with water for 15 min

10. Which of the following describes the proper way to smell a substance?
- A. Directly breathe in the fumes for at least 2 min.
 - B. Stick your nose in the container and inhale the fumes.
 - C. Hold the container at arm's length and waft the fumes toward you.
 - D. Hold the container directly under your nose and breathe in the fumes.

11. Which of the following should you do when you are working with an open flame?

I.	tie long hair back
II.	roll up long sleeves
III.	leave the flame unattended

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II, and III