Name:\_\_\_\_\_

Period: \_\_\_\_\_

# Science Safety Booklet

Grade 8



# **BC SCIENCE CONNECTIONS 8**

#### GETTING TO KNOW YOUR TEXTBOOK



1. List the authors of your textbook (last names only)

- In what year was the book published? \_\_\_\_\_
  Why is it helpful to know this information?
- 3. Which company published this Textbook? \_\_\_\_\_

4. How many UNITS are there in the textbook?

\_\_\_\_\_

5. List the NAMES of each of the units, and put a star (\*) next to the one you think will be the most interesting.

- 6. How many Topics are there in the Textbook?\_\_\_\_\_
- 7. What is the purpose of the "At a Glance" page at the start of each unit?

8.	List at least 3 parts in the REVIEW section at the end of each UNIT.
9.	On what page is the SCIENCE SKILLS GUIDE found?
10	. On which page would you find the information on how to draw a graph?
11.	List the page numbers for each of the following:
	Index Glossary Safety Symbols
12	. What is the scientific definition of PHOTON?
13	. Where did you look to find this information?
14	. On what pages could you find information about:
	Density: Sir Isaac Newton
15	. Where did you look for this information?
16	. What page is Figure 2.2 on?
17	. The figure number gives you a CLUE to help you locate the figure quickly. What is the clue?
18	. What pages are the SCIENCE CLASSROOM safety rules listed?

#### Safety Rules for the Science Lab

#### General

2. Make sure you \_\_\_\_\_\_the procedure before you start an experiment.

**3.** Make sure you know how to use your \_\_\_\_\_\_equipment properly before you start an experiment.

**4.** Always use appropriate \_\_\_\_\_\_equipment, such as a lab apron or protective eyewear. Tell your teacher if you are wearing contact lenses.

5. Do not wear \_\_\_\_\_\_clothing, sandals, or open-toed shoes.

6. Do not \_\_\_\_\_, drink, or chew gum in the laboratory.

7. Never engage in\_\_\_\_\_.

8. Know the location and use of all emergency \_\_\_\_\_\_and emergency exits

**9.** In case of an emergency, follow \_\_\_\_\_\_your teacher has taught you. Use whatever emergency equipment is appropriate to respond to the emergency. Act immediately to protect people first and then equipment.

#### Glassware

**10.** Never use broken or \_\_\_\_\_glassware. Dispose of it in a "sharps" bucket or as your teacher directs. Use clean glassware, and after use wash it, or put it in an approved place to soak.

loose	read	procedure	procedures	protective
horseplay	eat	chipped	lab	equipment

#### Chemicals

**11.** Know the safety precautions and \_\_\_\_\_\_for all chemicals you are using before you start your lab.

**12.** If you come in contact with a substance, \_\_\_\_\_\_the affected area immediately and thoroughly with water. If you get anything in your eyes, do not touch them. Wash them immediately and continuously for and inform your teacher.

**13.** Hold containers \_\_\_\_\_\_\_from your face when pouring liquids.

**14.** \_\_\_\_\_\_ labels on containers. Never use a chemical from a container that does not have a readable label. Take it to your teacher.

**15.** When in the lab, never put anything in your \_\_\_\_\_\_ such as fingers, equipment, hair, pencils, or chemicals that you are working with, even if they are \_\_\_\_\_\_ items.

**16.** Never return a chemical to its \_\_\_\_\_\_ container. Doing this could contaminate the original stock.

**17.** Never put any chemical down the sink or into the garbage permission.

**18.**\_\_\_\_\_up any spills according to your teacher's instructions.

**19.** If you are asked to smell a substance, never smell it directly. Hold the container at arm's length and \_\_\_\_\_\_ fumes toward you. Gradually bring the container closer to your nose until you can smell the fumes safely.

20. When diluting a concentrated acid with water, add the

\_\_\_\_\_to the water, not the water to the acid. This prevents sudden overheating of the water.

Acid	away	waft	mouth	original	15 min
clean	rinse	food	without	read	hazards

#### **Hot Plates and Open Flames**

**21.** Handle hot objects carefully. Be especially \_\_\_\_\_\_with a hot plate even if it looks as though it has cooled down.

**22.** Know how to \_\_\_\_\_\_and operate a Bunsen burner.

**23.** \_\_\_\_\_back long hair and avoid fuzzy clothing and long sleeves when you are in an area with open flames.

**24.** Never leave an \_\_\_\_\_\_flame unattended, even for a moment. Assign someone else to watch it, or turn the flame off.

**25.** Clear area of \_\_\_\_\_\_materials before lighting the Bunsen burner.

#### **Electrical Equipment**

**26.** Make sure your hands are \_\_\_\_\_\_ when touching electrical cords, plugs, or sockets.

**27.** Pull the \_\_\_\_\_\_, not the cord, when unplugging electrical equipment.

**28.**\_\_\_\_\_\_ frayed cords and any other damaged equipment to your teacher.

**29.** If any electrical component becomes \_\_\_\_\_\_during an activity, disconnect the circuit immediately.

dry	hot	careful	report	light	plug	tie	
		careful	open	flammable			

Circle all the safety hazards, and describe how you would correct them.



<sup>©</sup> Getting Nerdy, LLC

#### Safety in the Science Classroom

For each of the following safety rules, give one GOOD reason why we have that safety rule.

- 1. Never begin an experiment or lab without your teacher's permission.
- 2. Keep your safety goggles on as long as there are any chemicals being used in the lab, even if you yourself are finished.
- 3. Never eat, drink, or chew gum during a lab.
- 4. Put test tubes in a test tube rack before pouring liquids into them.
- 5. Make sure your hands are dry when using electrical equipment.
- 6. Report any injuries, no matter how minor, to your teacher.
- 7. Clear the area of flammables around a Bunsen burner
- 8. Never rough house in the class.
- **9.** If your clothing catches on fire, never run.
- 10. If a chemical gets in your eye, flush it with running water for at least 15 minutes.

#### LABELS ON HAZARDOUS PRODUCTS

#### Household Hazardous Product Symbols (HHPS)

Many of the chemicals you use in class are hazardous, but so are many products you use at home. It is important for you to be able to recognize and interpret hazard symbols on products so you can use these products safely in the lab or at home.

Each symbol has two components: its shape and the symbol inside the border. The shape tells you how hazardous a product is. Going from least dangerous to most dangerous:

- A triangle means "caution"
- A diamond means "warning"
- An octagon means "danger"



POISON CORROSIVE FLAMMABLE

EXPLOSIVE

Within these shapes are symbols that tell you what kind of hazard the product is. For example, the skull and crossbones means the substance is toxic. The most toxic substances show a symbol inside an octagon. The skeletal hand shows you a substance is corrosive, the flame represents a flammable substance, and the exploding object represents an explosive substance.

#### WHMIS SYMBOLS

Throughout Canada, standard symbols are used to identify dangerous materials.

The Workplace Hazardous Materials Information System (WHMIS) has produced symbols for such workplaces as science laboratories. These are known as WHMIS symbols. WHMIS symbols are similar to the hazardous product symbols described above, but they are always in a circle. They identify a wider range of hazards than the household symbols do.



### **HHPS and WHMIS SYMBOLS**

1. Draw the three shapes for HHPS Symbols, in order from least to most hazardous.



2. Identify the following International Safety Symbols.

3. Study the display your teacher has provided of products many people use in their homes. Choose three products and determine for what each product is used and look for symbols. Check the labels for precautions for each product's use and then complete the chart below:

Product	Use	Symbol	Meaning	Precautions

- 4. What does WHMIS stand for?
- 5. What is the purpose of WHMIS?

6. Do all products and chemicals have WHMIS labels? Explain.

7. Identify the following symbols, write down at least one hazard this symbol represents and give one example of a material or chemical that may have this symbol.

Symbol	Identify Symbol	Hazard	Example
٨			
۲			



## **Common Laboratory Equipment**

beaker	bottle brush	Bunsen burner	electronic balance
dropper	flask	forceps	glass slide + cover plate
graduated cylinder	hot plate	petri dish	scoopula
stoppers	stirring rod	test tube	test tube rack
thermometer	tongs		

Picture	Name	Function
		To provide a source of heat energy (without an open flame) for an experiment
		To mix and store solutions
		To measure the temperature (i.e., average kinetic energy of matter)
		To temporarily hold or heat liquids
		To thoroughly clean a test tube, beaker, or flask
		To safely pick up and/or pour the contents of a hot beaker
		To provide a source of heat energy (open flame) for an experiment
		To pick up and examine small solids without using hands

	To precisely measure the mass of a chemical object
	To transfer small amounts of a solid from a bottle or container to another location
	To hold 6-8 test tubes
	To precisely measure different volumes of liquids
	To culture bacteria and/or hold small amounts of solids
	To hold chemicals and observe a chemical reaction or heat a chemical substance with a Bunsen burner
	To stir liquids when heating or preparing solutions
	To close the end of a test tube or flask
	To dispense droplets of a liquid
	To support and cover a specimen to be observed using a light microscope

#### **COMMOM LABORATORY GLASSWARE & EQUIPMENT**

