

OPEN SCHOOL BC

Science 10

Introduction Assignment

This assignment is intended to familiarize you with some of the basic concepts and skills related to Science 10. This is the first meaningful assignment for Science 10, so complete it with care.

Student Name _____

Student No. _____ Date _____

Address _____ Postal Code _____

Complete the following Science 10 Assignment independently and return it to your teacher based on the instructions provided by your school. No external resources are required to complete this assignment.

There are three parts to this assignment:

Part A: Tool for Success—Safety Rules!	20 marks
Part B: HHPS and WHMIS	15 marks
Part C: SOS Safety Test	40 marks
Total:	75 marks

Contents:

16 pages

Assignment time:

2 hours

Before you start, read these important tips.

1. Read each question carefully before answering.
2. Answer all questions to the best of your ability.
3. Take your time. Check your work before handing in the assignment.
4. Write neatly and check your spelling.

Science 10 Introduction Assignment

Part A: Tool for Success—Safety Rules!

Getting Ready

In this Tool for Success you will learn common science safety rules and be introduced to the basic safety symbols found on household cleaners and on bottles in a typical science classroom. Before beginning an experiment, always familiarize yourself with the hazards associated with the substances you will use.

Before You Begin

1. Always read and follow all instructions and ask your teacher about anything you do not understand.
2. Never do an experiment without the approval and direct supervision of an adult.
3. Make sure you understand all the safety labels (HHPS and WHMIS).
4. Tie back long hair and avoid wearing loose clothing, such as scarves, ties, or long necklaces.
5. Wear proper safety protection as instructed by your teacher.
6. Know the location of safety and first-aid equipment, including fire extinguisher, fire blanket, first-aid kit, and fire alarm.

Avoiding Pain

1. When using a knife or razor blade, always cut away from yourself and others.
2. If you need to walk while holding scissors or other sharp objects, always keep the pointed ends facing away from yourself and others.
3. Work carefully and make sure your work area is not cluttered.
4. Do not use open flames unless you are instructed to do so.
5. Handle hot objects carefully. Bring the back of your hand close to, but not touching, the object. If you are burned, hold the burned area under cold water or put ice directly on it.
6. If you need to smell a chemical, hold the container away from your face and slowly move (waft or wave) the air directly above the container towards your nose with your hand.
7. To avoid electrical shock, make sure your hands are dry when touching electrical cords, plugs, or sockets.
8. Unplug electrical cords and equipment by holding the plug, not by pulling on the cord. Do not use equipment if the cord is frayed or cracked.
9. Never play or tamper with safety equipment.
10. Never drink or taste any substances during an activity.
11. Never eat or drink in the laboratory.
12. Never remove your goggles during an activity.
13. Never use cracked or broken glassware.
14. Wash hands carefully with soap and water after handling chemicals.
15. Clean equipment before you put it away.
16. Clean up your work area after you complete an activity.
17. Dispose of broken glass as your teacher directs.

18. Dispose of materials as directed by your teacher. Do not pour chemicals down the drain as they may get into a salmon-spawning stream or cause other problems.

Reducing Pain

1. If chemicals splash onto your body, immediately flush them off with water. If the chemical splashes in your eyes, wash your eyes immediately and continue for 10 minutes. Get to a physician as soon as possible. Proper laboratories will have eyewash stations and many have showers.
2. Tell your teacher immediately if an accident or spill occurs, no matter how minor.
3. If you are on fire, drop to the ground and roll on the floor to smother the flames. To help smother the flames, cover them with coats or blankets.
4. In case of fire, use a fire extinguisher (if available). Call 911 or the fire department.
5. Use sand or a large container to smother small fires. This cuts off the supply of oxygen.

MARKS

Activity 1: Safety Rule Matching (10 marks)

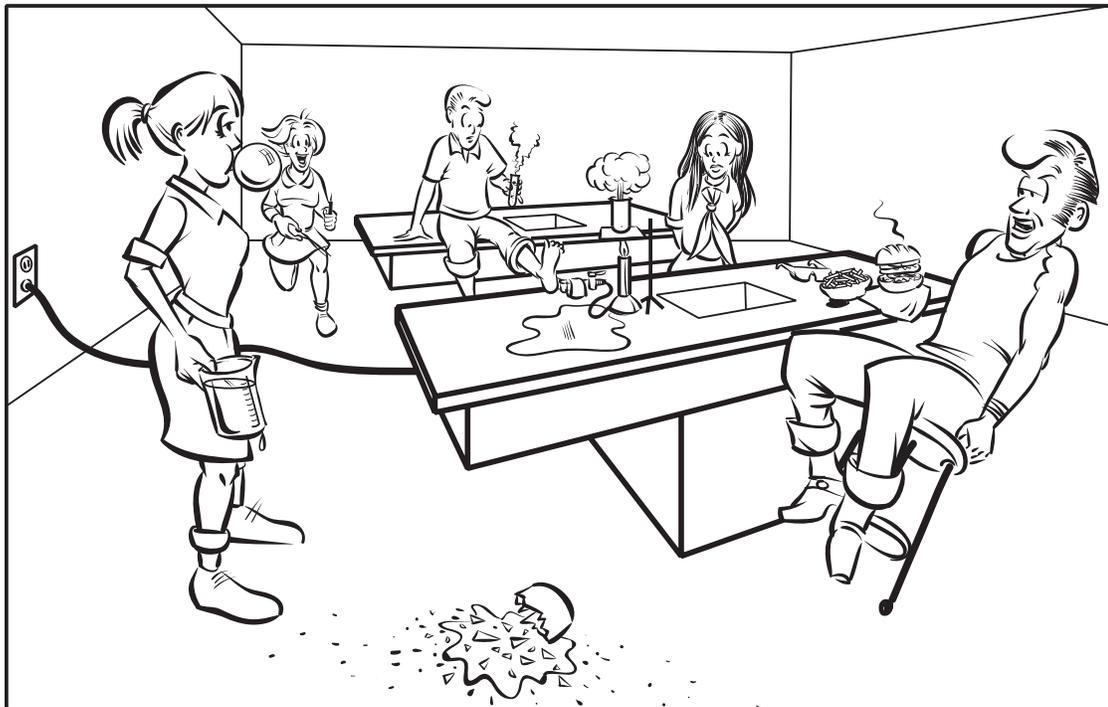
Match the mixed-up safety rule with the real safety rule.

- _____ 1. Flushing has another meaning (or two) in science safety.
 - _____ 2. The backhand rules!
 - _____ 3. A bucket of sand saves the land!
 - _____ 4. To wave or to waft, that is the question.
 - _____ 5. Common sense is not that common, so what are three key rules of safety?
 - _____ 6. Why would you want to roll on the dirty floor?
 - _____ 7. Butter is not very good for this.
 - _____ 8. Home Alone isn't a good science safety movie
 - _____ 9. How could your safety behaviour protect fish?
 - _____ 10. Forgetting these locations can be hazardous to your health.
- a. *Never do any experiment without the approval and direct supervision of your teacher, parent, or guardian.*
 - b. *Read all written instructions before doing an activity.*
 - c. *If you are on fire, drop to the ground, and roll on the floor to smother the flames. Cover the flames with coats or blankets to help smother the flames.*
 - d. *Know the location of safety and first-aid equipment, including fire extinguisher, fire blanket, first-aid kit, and fire alarm. Never play with safety equipment.*
 - e. *If chemicals splash onto your body, immediately flush them off with water. If a chemical lands in your eyes, wash your eyes immediately and continue for 10 minutes. Get to a physician as soon as possible.*
 - f. *Use sand or a large container to smother small fires.*
 - g. *If you need to smell a chemical, hold the container away from your face and slowly waft or wave the air directly above the container toward your nose with your hand.*
 - h. *Dispose of materials as directed by your teacher. Do not pour chemicals down the drain as these may get into a salmon-spawning stream.*
 - i. *Handle hot objects carefully. Bring the back of your hand close to, but not touching, the object. If you are burned, hold the burned area under cold water or put ice directly on it.*
 - j. *Never taste anything or directly smell an unknown chemical.*

MARKS

Activity 2: Spot the Safety Violations (10 marks)

Spot the safety violations in the following picture. There are at least thirteen—can you find **ten** of them? List the safety violations in the space provided below.



Part B: HHPS and WHMIS

At school, in the lab, and at the workplace, safety rules and standards are important. Learning to identify safety issues, safety rules, the Hazardous Household Products Symbols (HHPS), and the Workplace Hazardous Materials Information System (WHMIS) may reduce your risk of injury or death.

Hazardous Household Products Symbols

Hazardous Household Products Symbols (HHPS) are found on many household cleaners and on containers in the science laboratory. They alert the user to the potential dangers of that particular product. In recent years the symbols have changed. There used to be three shapes but now there are only two—the triangle and the octagon.



This symbol means the container is dangerous. It can explode if heated or punctured causing flying bits of metal or plastic that can lead to serious injuries.



Usually you will see the triangle with the explosive symbol inside it. Examples include aerosol cans, such as hair spray or spray paint.



This symbol means the product inside the container is dangerous. The octagonal stop sign usually appears with one of three cautions.



Product is corrosive and will burn skin, eyes, throat, or stomach. Examples include oven cleaner and toilet bowl cleaner.



Product is flammable and will catch fire easily if it is near heat, flames, or sparks. Examples include gasoline and hair spray.



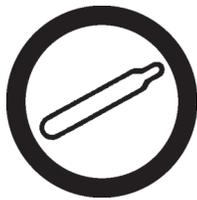
Product is poisonous and will cause illness or death if ingested. Examples include furniture polish and windshield washer fluid.

MARKS

Workplace Hazardous Materials Information System

All containers in the chemical storage area in your science classroom, if you are in a school, have Workplace Hazardous Materials Information System (WHMIS) symbols. This system is used across Canada in every workplace that uses chemicals. Each chemical comes with an information sheet that gives all the known data on its toxic effects and other hazards.

Look at the following WHMIS symbols. Make sure you can recall the symbol with its meaning.



Compressed Gas

Flammable and
Combustible
Material

Corrosive Material



Oxidizing Material

Dangerously
Reactive MaterialPoisonous and
Infectious Material
Causing Other
Toxic EffectsPoisonous and
Infectious Material
Causing Immediate
and Serious Toxic
EffectsBiohazardous
Infectious Material

MARKS

Activity 3: Household Hazardous Products Symbols (15 marks)

With help from your parent or guardian, find six household products that display one of the hazardous household product symbols. For each, write the product name, the type of hazard (corrosive, flammable, poison) and draw the corresponding hazard shape around the symbol. Label the top row of the table with the following terms: Corrosive, Flammable, Poison.
(15 marks)

Household Product Name	_____	_____	_____
_____			
_____			
_____			
_____			
_____			
_____			

MARKS

Part C: SOS Safety Test

Safety Rules (20 marks)

Place an F in the parentheses if a statement is false, a T if it is true. For the statements you marked F, use the BLANK space below the statement to rewrite the bold words to make the statement true.

1. () Touching heated containers with your fingers is a **good** way to see if it is cool enough to move.

2. () You **should** taste chemicals or substances unless told to do so by your teacher.

3. () **Tie** back long hair when doing a lab experiment.

4. () Keep your work area **dry** when working with electrical equipment.

5. () Report **all** injuries, no matter how minor, to your teacher.

6. () You **can** use broken, chipped, or cracked equipment as long as it doesn't leak.

7. () If you spill any liquid on your skin, you **must** flush the area with lots of water.

8. () Use the bucket of sand for **chemical spills**.

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9. () If you need to smell a chemical, hold the container away from your face and slowly move the air directly above the container **away from** your nose with your hand.

10. () Always read the activity thoroughly **before** you begin.

11. () If your clothing catches fire, always **run**, drop, and roll.

12. () Apply **butter** to the affected area when you burn yourself.

13. () If you splash any liquid in your eyes, you must flush the area with lots of water for **no less** than 10 minutes.

MARKS

Hazardous Household Products Symbols (12 marks)

1. Match each description with the correct symbol.

Description	Symbol
_____ corrosive	A 
_____ the container is dangerous	B 
_____ the product inside the container is dangerous	C 
_____ poisonous	D 
_____ flammable	E 

2. List two products that are flammable.

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3. List two products that are corrosive.

4. List two products that are poisonous.

5. List one container that may explode if heated or punctured.

MARKS

Workplace Hazardous Materials Information System (8 marks)

Match the following descriptions with the correct symbol.

Description	Symbol
_____ biohazardous infectious material	A 
_____ compressed gas	B 
_____ corrosive material	C 
_____ dangerously reactive material	D 
_____ flammable and combustible material	E 
_____ oxidizing material	F 
_____ poisonous and infectious material causing immediate and serious toxic effects	G 
_____ poisonous and infectious material causing other toxic effects	H 

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Evaluation Guidelines	Marks
Part A	/20
Part B	/15
Part C	<u>/40</u>
Total Marks	/75

**If time permits, please
reread your work and
add your initials below.**

I REREAD MY WORK:

Student's Initials

N/02/2011