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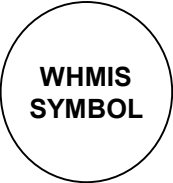
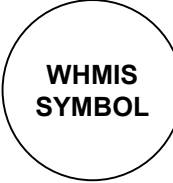
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Making Your Own WHMIS Labels

Every product that is controlled by WHMIS legislation has its own WHMIS Label. The label will give a brief summary of the most important things to know about the chemical. This includes:

- name of the chemical: may be the common name, trade name, generic name, brand name, code name
- the WHMIS hazard symbols representing the WHMIS hazard classes
- risks and precautions: short phrases describing the hazards to supplement the information provided by the symbols, and precautions to be taken when using, handling or being exposed to the product
- first aid instructions: these statements indicate immediate first aid measures that can be taken by the victim or others in case of an accident or emergency
- supplier's name and address
- a reference to the matching MSDS stating that more information is available

Note where this information is placed on the template of a WHMIS label below. Information on the right side of the label is in English and on the left side it is in French.

	Name of Product	
Risk Phrases • • • •		Indication Des Risques • • • •
Precautionary Measures • • • •		Mesures Des Prevention • • • •
First Aid Measures • • • •		Mesures De Secours D'urgence • • • •
Refer to material safety data sheet for more information		
Name of Supplier Address of Supplier City, Country, Postal Code Area Code, Phone Number		

Your Task: Working in groups of 2, design your own WHMIS label, for an imaginary chemical that you invent

- Decide on a name for the chemical, its properties, risks, precautionary measures, and first aid measures.
- Create a company name and address, and put all this information in clear, legible form on a properly formatted WHMIS label.
- Though the product itself is imaginary, whatever hazards you decide to give it must correspond to the actual WHMIS symbols. The precautions you cite should be logical given the hazards that you describe for your product, and the first aid measures must be the actual steps that would be taken if an accident occurred with this chemical.
- Colour and present your label as a poster.
- Feel free to make the product as hazardous as you want, using more than one WHMIS symbol.
- Bonus marks for French translation? Ask your teacher!

“Ricky’s First Job” - A Case Study in Safety

Ricky Dosanj had turned 15 two months previously and was already planning his 16th birthday, which he considered would be the most important year of his life so far. Yes, Ricky couldn't wait to get his driver's license. He wanted to have his own car by the time he got his learner's license. One of Ricky's best friends, Vic, had just gotten a job at one of the local quick-service restaurants, and he told Ricky he would get him an application form. And so it was that a few weeks later, Ricky was hired on at **Cardiac Burger** to work in the kitchen.

Besides a summer job helping to deliver flyers when he was 12, Ricky had never had a “real job,” and he was extremely excited about starting work. He calculated that he could work enough shifts over the next nine months to purchase a used car. He could fix it up in a few months so that by summer time he'd have his “dream machine.” He could see himself in his mind's eye that summer, cruising the beach strip in White Rock, shades on, windows down, tunes cranked. The image made him laugh with anticipation. He couldn't wait!

Ricky was also looking forward to working with Vic and several of his other friends who had jobs at Cardiac Burger. It was quite understandable that Ricky was quite nervous on his first day at work, which was devoted to training. He had decided that he really needed this job, and was determined to make a good impression on his boss. He was also worried about how he looked to his friends and other co-workers -- he definitely did not want to look awkward and unsure of himself in front of them. He wanted to show everyone that he could handle this job.

His first shift started at 4:00 after school on Tuesday, and he was so excited that he could hardly pay attention in class that day. In Science class, his teacher, Mr. Payne, was droning on about safety symbols and something called “WHMIS”, but Ricky's mind was far away, flipping burgers and driving around in the shiny vintage Chevy that was becoming so real to him that he could almost reach out and touch it.

Ricky was three quarters of an hour early for his shift. He sat in the lobby, waiting for the manager to come and get him, and growing more and more nervous. Finally, **Rubeena**, the training Manager at Cardiac Burger, came out to get him. She introduced herself and seemed very nice, but quite formal, and she seemed very busy. She looked only a couple of years older than he was, and Ricky thought she must be a very good worker to have been promoted so fast. He was now more determined than ever to make a good impression.

Rubeena brought him inside and took him to the back of the restaurant. On the way back, he noticed Vic, his friend, was working. Vic smiled and waved, and then turned to a co-worker and gave her a knowing grin.

At the back, Rubeena led Ricky into a room that Rubeena told him was the “Training Room,” and here he met **Sonya**, a girl he had seen before in his school who he knew was in Grade 10 and who was, to his eye, absolutely beautiful.

“Sonya, this is Ricky,” said Rubeena, “and this is his first day. You'll be working together learning how to prepare French fries.” Ricky smiled, somewhat awkwardly, he thought, and sat down on the bench next to Sonya. Her perfume, he noticed, was the same brand as that worn by his older sister. This beautiful fragrance seemed to be radiating from her. She smiled slightly, and Ricky hoped that he wasn't starting to blush. He bit his lower lip self-consciously.

“Ricky and Sonya, I'm going to show you a video that tells you a little bit about Cardiac Burger, the safety rules and procedures that we use here, and the WHMIS system, which is used by all workplaces in B.C. After that, the video is going to tell you how fries are cooked. And then,” Rubeena paused for effect, “I'm going to take you onto the floor and show you how to make French fries.” Ricky just nodded. Things seemed to be moving pretty fast, and he was relieved when Rubeena excused herself from the room after starting the video, saying she would return when it was over.

Though he was facing the screen and not talking, whatever was said on the video was basically going in one of Ricky's ears and out the other. The day's events and the presence of Sonya so nearby was not allowing his mind to stay focused on the rather boring video. At one point he noticed the announcer pointing to some “WHMIS symbols” which he vaguely remembered looked something like the symbols Mr. Payne was talking about in class. Before they could really register, the video was talking about deep frying vats, and 375°C, and frozen potatoes, warm-up times, holding times, salting procedures, draining procedures, and timers for this and other timers for that.

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He had no idea that there was such a science to making French fries. He understood the basic idea -- you put the fries in a steel mesh basket and put the basket in this hot oil (actually vegetable shortening, the video said), but there were so many little details -- too many to learn all at once, he thought. At one point during the video, he just let his mind drift out of the room and into his Chevy. He wondered if Sonya could tell that he wasn't paying attention.

Just as the video ended, Rubeena came back into the room and smiled. “Well,” she said, “any questions about the video, or anything you want me to go over?” Ricky smiled and shook his head. “Do you think you’re ready to go out there and make some fries?” asked Rubeena. Ricky, though he basically had no idea about how to make French fries, felt that a positive response was expected. He smiled and nodded his head. Sonya, however, said, “Well, I don’t think I’m really ready yet. Could I watch that video again?”

To Ricky’s surprise, Rubeena seemed pleased at Sonya’s question. “Of course you can! I’ll let you watch it again at the end of your shift as a review. I’m not going to leave you alone to make fries just yet, but I am going to take you and demonstrate how it’s done. Feel free to stop me anytime and ask questions. Now, you both understood the WHMIS information, right? I mean you’ve probably been learning about it in school for a few years already. Is there anything about WHMIS that you would like me to review?”

Ricky smiled and shook his head.

“Are there any chemicals that could hurt me that I’ll be using? And are the fumes from the fry vat dangerous?” asked Sonya.

Rubeena smiled again. “Those are excellent questions. No, the fumes are not dangerous, but the fry vat is hot, and that’s the biggest hazard. Also, the floor around the vats sometimes gets a bit greasy, so you will have to be careful not to slip, and you should also clean the floor regularly. As far as chemicals go, yes there are some chemicals that do pose hazards, but you won’t be using them today. Everything you use here has a WHMIS label that explains the hazards, and we keep the MSDS’s in a file in the first aid room.”

“Will you train me how to use those chemicals when the time comes?” asked Sonya. “If I do get injured, who do I see? Is there a first aid attendant?”

“Good questions, Sonya!” said Rubeena with a broad smile. “You certainly ask a lot of questions! Don’t worry about training. We’ll show you how to do everything before you start any new position. All of our managers have received first aid training. If you injure yourself in any way, tell any manager or myself. We can all help you.”

Rubeena gave them their uniforms from a large closet, and after they had returned from the changing rooms, took them on a tour of the restaurant. Ricky smiled and nodded as he was shown the freezers, grill area, storage room, lunchroom, and the first aid room. There seemed to be so much to absorb, and Ricky was feeling quite overwhelmed by it all. He was determined to not let it show. Feeling that he should ask a question to show he was paying attention, Ricky asked, as they were being shown the lunchroom, “Do we get paid for our breaks?”

Rubeena smiled again (though Ricky noticed it wasn’t the same sort of smile), and said, “Yes, if you remember that part on the video, it told you that everyone gets paid for a 15-minute break on a four-hour shift.”

At the first aid room, Rubeena was looking at her watch and seemed to be in a bit of a hurry. Ricky thought Sonya seemed to be spending too much time looking around the room. “Is that the eye wash station?” asked Sonya.

“Yes, and behind that partition is the safety shower. There is an extra fire extinguisher here, and the fire blanket is right by that door. I’m glad you asked, as I’m in a bit of a hurry and I forgot to tell you those things. Do you both know how to use an eyewash bottle?”

This time, both Ricky and Sonya smiled and nodded, but Ricky had a nervous feeling that maybe Sonya wasn’t pretending she knew, like he was.

By now, over two hours had gone by, and still feeling awkward and nervous, Ricky was led up past the workers in the grill area (who all turned to look) to the French fry station.

In rapid-fire succession, Rubeena listed off a series of facts about the French fry station that she had obviously memorized long ago. As with the video, Ricky found it hard to follow all the information. Sonya stopped Rubeena three times to ask for clarification about several points. Ricky almost felt embarrassed for Sonya. Didn’t she know she was making herself look like a moron. Whenever Rubeena asked Ricky if he understood something, he smiled and nodded.

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Rubeena showed them how to put the fries in the basket evenly, how to load them into the vat and set the timer, how to shake them part way through cooking, how to empty the basket, drain, salt, and package the fries. Again, Sonya sometimes would ask Rubeena to go through it a second or even a third time. Ricky thought he was “getting the hang of it” pretty quickly, and was actually feeling quite pleased with himself. Rubeena complimented him on his first few attempts at packaging the fries in their little serving bags. Ricky flushed with pride and relief. He was *doing okay*, he thought.

Finally the time had come to let them make the fries on their own. Ricky stuck with packaging the cooked fries, while Sonya tackled the more complex job of the actual cooking. Rubeena stepped in to help out Sonya two or three times, but only had to change one of Ricky’s packages. Again, Ricky felt pleased with himself. The restaurant was quite busy now with the dinner rush, and Ricky and Sonya seemed to build up a rhythm speed as time went on. They were keeping up with the rush of customers! Before Ricky knew, it was 20 minutes to 8:00, and Rubeena took the two trainees back to the training room. On the way there, they passed by an employee cleaning a grill. Sonya asked Rubeena what he was doing, and she explained. The employee was wearing gloves and an apron, and squirting a gray fluid out of a bottle onto the grill. Ricky noticed that the bottle had a label with three of those WHMIS type symbols on them. He had a pretty good idea what the first one meant, but not the other two. But he shrugged and put it out of his mind. The only thing he was thinking about was food and rest and not making any mistakes before his shift ended. He had, he thought, done really well so far.



“I think you two handled the rush very well today,” Rubeena smiled. “Do you have any questions?” Ricky smiled and shook his head. Sonya, who looked tired, smiled and said, “Not at the moment. My brain feels full! But if I think of any tonight, can I ask you tomorrow?”

“Of course you can.” replied Rubeena. “Now, later this week I will give you a shift making fries on your own. Do you think you can handle it?” Ricky smiled and nodded. Sonya, however, looked a bit worried.

“Would it be okay if you worked with me for about five minutes at the beginning of my shift? At least until I get the hang of it again?”

“Absolutely,” said Rubeena. “Just ask. Whatever you need, just ask.”

Ricky smiled to himself. Sonya, beautiful as she was, just didn’t know how dumb she appeared. Didn’t she know that people have to show confidence in themselves?” Ricky bet that Rubeena must have thought Sonya was really spaced out and silly. He predicted that Sonya would probably not get very many shifts. The managers would get sick and tired of all her pestering questions. He could almost see his own name on the “**Employee of the Month**” plaque that hung prominently in the lobby.

“Yes,” Ricky thought to himself as he waved goodbye to Vic, a strut almost visible in his step, “I’ve got it figured out here. Just shut up and work hard, and I’ll be rewarded. Chevrolet, here I come!”

That night, he dreamed of Chevrolets, French fries, beaches, and -- for some reason -- Sonya.

Epilogue

Unfortunately for Ricky, things did not go quite as he planned. On his very next shift, while rushing to keep up, he splashed hot oil on his skin, causing a painful burn on the inside of his right forearm. Fearing that he would get in trouble, he hid the burn from the manager, despite the pain, and did not get first aid. Because of this, the burn took a long time to heal, and left a permanent scar the size of a quarter on his arm. On his fourth shift by himself, he slipped on the greasy floor around the fry station (he had neglected to mop the area regularly), banging his head, bruising his knee, and almost poking his eye out on the protruding handle of a fry basket. His manager sent him to the first aid room and then home. He didn’t get another shift for over a week.

After a month, he was trained in the grill area, and in similar fashion, received several burns to his fingers, hands, and arms over the next weeks.

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One evening shift about two months later, feeling that he was a veteran worker, he stayed late and watched Vic clean a grill. The next shift, he offered to clean the grill at the end of the day, hoping that his offer would show the manager that he had initiative and reward him with more shifts. The manager asked if he had been trained to safely clean a grill. Ricky said, yes, he had been trained the night before, when that particular manager had been off-duty. The manager gave him permission.

Ricky neglected to wear safety goggles when he cleaned the grill and, unfortunately, his vigorous scrubbing and application of too much of the grill cleaner in one spot caused a glob of the grill cleaning fluid to splash into his eye. Ricky howled in pain, rubbed his eye desperately, and ran looking for help. His shouts brought the manager from the back office, and she quickly brought Ricky to the eyewash station. She helped him wash his eye for over 15 minutes, and took him to the hospital. Ricky’s eye was a red, swollen, bloody mess, and he was in great pain. He had caused severe blistering of his cornea, and only the manager’s thorough washing had saved his eye from permanent damage. Still it would take months to heal, and during that time, Ricky wore a bandage and eye-patch, something that caused him considerable embarrassment the first few days that he wore it at school. He was off work for six months, and though his eye eventually healed, he found that his vision was not as sharp as it used to be. The crew at Cardiac Burger sent him a get well card, which was signed by all the employees. Sonya wrote that she would miss him and that she had also recently been given a raise and a promotion to the position of “Crew Chief.” When he returned to work, she would be his supervisor! Ricky’s heart sank when he read this.

On his 16th birthday, instead of taking his driver’s test, Ricky was being fitted for prescription eyeglasses. Ricky’s Chevrolet remained a distant dream for a long time.

Case Study Questions

1. Was Ricky justified in feeling excited and nervous about his first job? Why or why not?
2. What do you think was the first mistake Ricky made?
3. List at least eight mistakes that Ricky made while working at Cardiac Burger.
4. Why do you think that Ricky did not ask any questions during the training session?
5. Do you think that, by asking so many questions, Sonya gave Rubeena the impression that she was too nosy and not very smart to begin with? Explain.
6. Imagine you are Rubeena, the manager. If you had to write a report about Sonya and Ricky, based on their first day of training, what would you say?
7. Who would you rather have working alongside you, Ricky or Sonya? Explain.
8. If you were an employee hired on the same day as Ricky, what questions would you ask?
9. What do the WHMIS symbols mean that Ricky noticed on the bottle of grill cleaner? What other injuries or adverse health effects, besides corroding skin and eyes, could a product with those three labels cause?
10. In terms of prevention and first aid treatment, what should Ricky have done about the burn he received on his second shift?
11. In terms of prevention and first aid treatment, what should Ricky have done about the fall he received on his fourth shift?
12. In terms of prevention and first aid treatment, what should Ricky have done about the injury to his eye?
13. For this question, answer either a) or b).
 - a) List at least 5 important things that you should do to ensure your safety on your first job.
 - b) If you have a job right now, list the safety risks that you face at work, and what you can do to prevent them.
14. Write a happy ending to our story.

Extension

In a group of three students, **write and act out a skit** in which you play the roles of Ricky, Sonya, and Rubeena, except choose a different work site such as a supermarket or gas station, etc. Demonstrate an example of what not to do as well as what an employee should do. The boss can be a nice, safety-conscious person like Rubeena, or can be a negative, pushy, mean-spirited hazard-provoking ogre -- it’s up to you! Be creative and have fun, but be sure to demonstrate what the potential hazards are on the job, and how these can be avoided by asking the right questions and learning the WHMIS system.

Safe Laboratory Techniques: Testing for Acids and Bases

Introduction

Being able to safely pour and mix chemicals is essential to success in laboratory chemistry. In this lab, you will review the correct procedures for pouring and mixing chemicals as you test some common household materials to see if they are acids or bases.

Observe the following guidelines:

1. **Always wear safety goggles throughout** a lab that requires chemicals. Keep them on throughout the lab.
2. **Tie back long hair and loose clothing.**
3. **Never inhale chemicals.** Use the “**wafting**” technique if you need to smell a chemical. **Do not taste anything** unless given specific permission by your teacher.
4. Make sure you **label all** the containers or test tubes when you place chemicals from one container and put them into smaller containers or test tubes.
5. Hold the containers away from your face when pouring liquids. Put **test tubes in a test tube rack** before pouring liquids into them.
6. When holding a bottle from which you are going to pour chemicals, **keep the label against the palm of your hand**. If everyone does this, any drips will only touch the opposite side of the bottle, and not get on your hand.
7. **Do not** return unused chemicals to the original containers. Your teacher will tell you what to do with unused chemicals and how to dispose of any other materials. Never pour unused chemicals down the drain without permission from your teacher.
8. **Report all chemical spills** to your teacher. All chemical spills must be cleaned up completely and immediately. Wipe up any splashes or spills of water immediately.
9. **Report any accident or injury, no matter how small**, to your teacher.
10. Place any **broken glass** in the **container(s) reserved for broken glass**. Do not put broken glass in the regular garbage.
11. **Clean and dry** your work area. Do not leave water on the counter or floor.
12. After every lab **wash your hands with soap and water**.

Apparatus and Materials

In this lab, you will use **litmus paper**, which usually comes on thin rolls or on small pieces of paper. **Blue Litmus** turns **red** when it contacts an **acid**, and **Red Litmus** turns **blue** when it contacts a **base**.

• distilled water	• 10 ml graduated cylinder	• Dropping pipettes
• 6 pieces of red litmus paper	• 6 pieces of blue litmus paper	• 6 test tubes
• marker or grease pencil	• test tube rack	• household ammonia
• vinegar	• cola (or any soft drink)	• lemon juice
• table salt	• baking soda	• scoop
• safety goggles & apron	• 50 ml beaker	• 6 stirring rods

Observation and Results

 Copy the following data tables into your notes

Material Tested	Effect on Litmus		
	Red Litmus Turns Blue (Indicates base)	Blue Litmus Turns Red (Indicates acid)	No Effect
A AMMONIA			
B BAKING SODA			
C LEMON JUICE			
D SOFT DRINK			
E TABLE SALT			
F VINEGAR			

Sample only

Procedure

You should do this lab in groups of two, sharing duties equally. One person should be in charge of reading the procedure out loud, step by step, and the other partner should be in charge of getting materials. Both should do the experiments, and both should clean up.

1. **Read the entire procedure** before starting the lab.
2. **Put on safety goggles** and apron or lab coat.
3. Make sure all your glassware is **clean and dry**. Clear off your bench top and make sure that it is clean and dry.
4. Neatly **label test tubes A through F** with grease pencil. Place them in order in your test tube rack.
5. Measure **2 ml. of soft drink** into the **graduated cylinder** using a dropping pipette.
6. Pour the soft drink into test tube D, leaving the test tube in the rack while doing so.
7. Using the grease pencil, **mark the level** that the soft drink comes up to in test tube D. Then, using test tube D as a reference, **mark that same level on test tubes A, B, C, E, and F**. This line represents approximately 2 ml.
8. Add **ammonia** to test tube A, using a clean dropping pipette, to the level of the marked line. **Be careful with ammonia; it is very corrosive.**
9. Add **lemon juice** to the marked line in test tube C, and **vinegar** to test tube F to the marked line.
10. **Smell each liquid** using the “**wafting technique**” and record a description of its odour in your observations.
11. For each **solid material**, use a scoop. Place an amount about the size of a pea into its respective test tube - baking soda into test tube B and table salt into test tube E.
12. Add about 10 ml. of distilled water to a 50 ml. beaker. Using a clean dropping pipette, add distilled water up to the grease pencil line into tubes B and E. Gently stir each with **different** clean stirring rods.
13. **Test the lemon juice (C)** with a piece of **blue litmus** paper by dipping a stirring rod into the juice and transferring a small drop onto the litmus paper that is lying flat on a piece of paper on your bench top. Observe and record the results in your table. Repeat the procedure using a piece of **red litmus** paper. **Observe and record the results.**
14. **Test the rest of the materials, using new pieces** of red and blue litmus paper for each test. Record your observations each time.
15. Dispose of used litmus in the garbage. The solutions in your test tubes can be poured down the sink with plenty of water.
16. Clean and dry all glassware and return them to their proper places. Clean and dry your bench top.

Discussion Questions

1. Which substances are acids and which are bases? Which seem to be neither acids or bases?
2. Why did you use separate stirring rods to test each material?
3. How could you use litmus paper to test whether rain was an acid or a base?
4. Ammonia is a corrosive material. Explain what you would do if ammonia accidentally splashed in your eye.